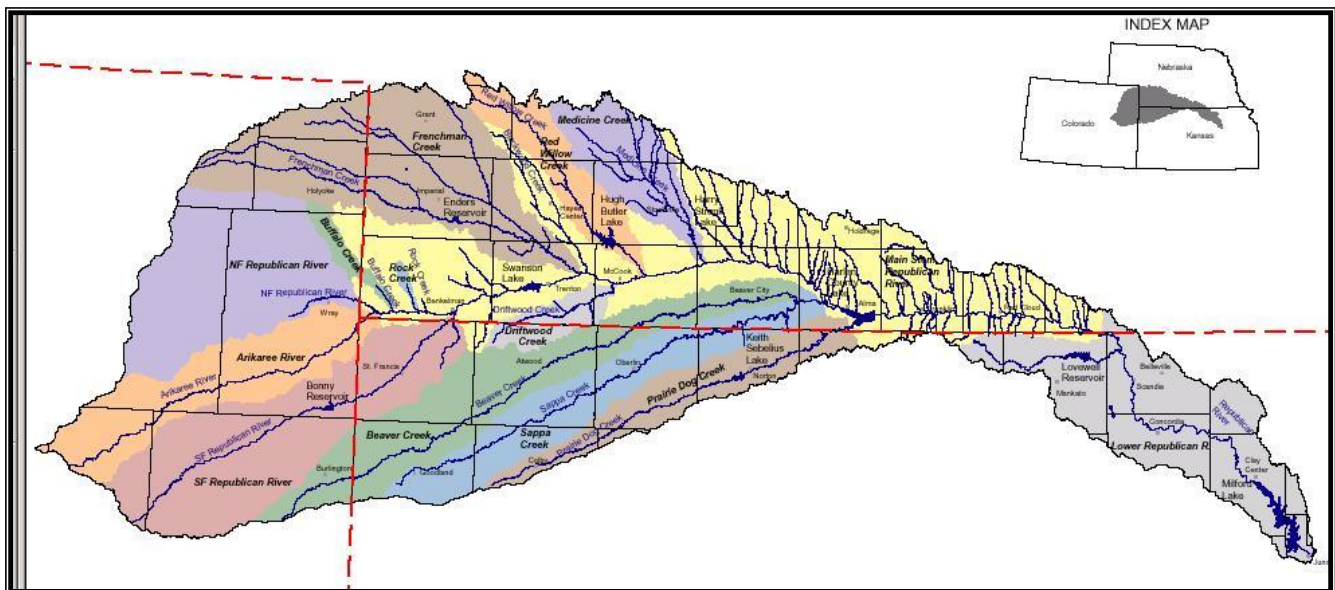


# REPUBLICAN RIVER COMPACT ADMINISTRATION

## 51<sup>st</sup> ANNUAL REPORT

FOR THE YEAR 2011



**JUNCTION CITY, KANSAS**

**OCTOBER 16, 2012**

SUMMARY REPORT OF THE ANNUAL  
MEETING OF THE REPUBLICAN RIVER  
COMPACT ADMINISTRATION

October 16, 2012

Junction City Kansas

**Minutes**

A transcript of this meeting was prepared by a court reporter. Upon the approval of the Republican River Compact Administration (RRCA), the transcript will serve as the official minutes of the 52<sup>nd</sup> Annual Meeting of the RRCA. Copies of the transcript may be obtained from the offices of each of the compact commissioners. The following is a summary of the meeting.

**Introductions**

The Annual Meeting of the RRCA was called to order by Chairman David Barfield at 7:50 a.m. on October 16, 2012, at the C.L. Hoover Opera House in Junction City, Kansas. Each Commissioner introduced staff in attendance and members of the audience introduced themselves. Attendees included:

David W. Barfield	Kansas Commissioner
Chris Grunewald	Kansas Attorney General's Office
Burke Griggs	Kansas Department of Agriculture
Scott Ross	Kansas Department of Agriculture
Brian P. Dunnigan	Nebraska Commissioner
Justin Lavene	Nebraska Attorney General's Office
Jim Schneider	Nebraska Department of Natural Resources
Tom O'Connor	Nebraska Department of Natural Resources
Dick Wolfe	Colorado Commissioner, Chair
Mike Sullivan	Colorado Division of Water Resources
Scott Steinbrecher	Colorado Attorney General's Office

The list of attendees as recorded on the attendance sheets is attached as Exhibit A.

**Modification and Approval of Agenda**

Chairman Barfield asked for modifications to the agenda. As a result of suggestions by the commissioners, the following modification were agreed upon: item 9A was amended to "Discussion of Engineering Committee Report and assignments"; item 9B was amended to "Action on Nebraska's proposed Plan for Reduction of Computed Beneficial Consumptive Uses"; and item 9C through 9G were amended to "Status of" each item. Commissioner Wolfe moved to adopt the amended agenda. Commissioner Dunnigan seconded and the motion was approved unanimously.

A copy of the amended agenda as approved is attached as Exhibit B.

### **Status of Previous Annual and Special Meeting Reports and Transcripts**

A draft report and transcript of the 2011 RRCA meeting were provided to each state. A thorough review had not yet been completed by the states. The Commissioners anticipated that this item would be considered at a later date.

It was noted that the RRCA was not ready to take action on reports and transcripts from the 2007, 2008, 2009 and 2010 meetings of the RRCA which have been provided to each state.

### **Report of the Commissioner from Kansas**

Significant heat and dry conditions in the southern half of Kansas in 2011 led to the creation of Drought Emergency Term Permits to allow appropriators to complete the 2011 irrigation season while reducing their 2012 allocation according to what was used beyond their authorized amount in 2011. As a result of persistent drought conditions, the 2012 Legislature enacted Senate Bill 272 to make the Multi-Year Flex Account tool more attractive by providing multiple options for determining the five-year allocation. In 2012 there were 600 Multi-Year Flex Account applications statewide, including nearly 100 in northwest Kansas.

Chairman Barfield noted additional follow-up to the Kansas governor's Ogallala aquifer initiatives. The 2012 Legislature also enabled Senate Bill 310 which amended Kansas' Groundwater Management District Act to provide another method to deal with water level declines and over-appropriation in parts of western Kansas in particular. The law allowed groundwater management districts to initiate a local enhanced management area (LEMA), in which the stakeholders develop a plan to address severe water resource issues in their district. Once a plan is developed, a hearing process before the chief engineer is initiated whereby the plan is assessed and recommendations are made. Northwest Kansas Groundwater Management District No. 4 has developed a LEMA in Sheridan County and submitted it for review. The first of two hearings has been held and the plan was found to meet statutory requirements. The plan sets an allocation of 55 inches for five years for that LEMA area, which is a 20 percent reduction from recent historical use.

The 2012 water supply conditions continue to be dry, which has led to significant water administration state-wide. In the Republican Basin the Kansas administered users junior to the 1984 minimum desirable stream flows in late summer, which continue to this date.

The State of Kansas continues to be in compliance with all the requirements of the final settlement stipulation in the Compact. Northwest Kansas is fully metered and subject to normal compliance enforcement.

The status of ongoing litigation related to Nebraska's compliance with the compact is that trial was held during the month of August in Portland, Maine and a briefing on the matter was completed.

### **Report of the Commissioner from Colorado**

Commissioner Wolfe reported that achieving Compact compliance is of utmost importance to Colorado and thanked Colorado staff, the Republican River Water Conservancy District (RRWCD) and water users in the basin for their efforts toward achieving compliance. The RRWCD has completed the Compact compliance pipeline and is awaiting decision by the Compact Administration to allow the pipeline to be operational and help Colorado achieve Compact compliance. Commissioner Wolfe reported that the RRWCD expended nearly \$100 million to date to find a local solution to the local problem.

Another component of Colorado compliance efforts was in regard to Bonny Reservoir on the South Fork. Commissioner Wolfe issued an order in September 2011 to the Bureau of Reclamation to drain Bonny Reservoir and recognized the Bureau's efforts in working with Colorado during that process. The reservoir is drained and Colorado intends to keep Bonny Reservoir in a drained condition until the state is in compliance and can make a decision in the future on whether additional storage can occur in the reservoir.

### **Report of the Commissioner from Nebraska**

Commissioner Dunnigan reported that using current accounting procedures, Nebraska had a positive five-year average for the period ending in 2011. Based on projected accounting Nebraska would likely be in compliance through 2012 as well.

Commissioner Dunnigan reported that even though drought conditions placed stress on the basin water supply, any concerns carried over from the last drought about Nebraska's ability to comply with the Compact should not exist. Nebraska has taken significant steps to bolster its water management including the development of third-generation integrated management plans (IMPs), which contain forecasting provisions and accompanying controls. Those procedures incorporate detailed analysis and triggers to ensure that Nebraska is in compliance. The IMPs contain provisions to help manage long-term groundwater depletions such as continuing to reduce groundwater pumping volumes and annual evaluations to determine if additional controls are needed.

Commissioner Dunnigan announced that the basin Natural Resource Districts (NRDs) continue to demonstrate a commitment to compliance through the adoption of rules to support full implementation of the most recent IMPs. The plans contain controls that would require the shut-down of wells in rapid response areas during Compact Call years as well as provisions to administer stream flows to ensure Nebraska compliance. The Department of Natural Resources and Tri-Basin NRD also finalized their IMP, which became effective July 1, 2012. The plan requires the Tri-Basin NRD to limit groundwater depletions to the same volume as groundwater imports.

Commissioner Dunnigan reported that Nebraska continues to invest in long-term solutions for reducing consumptive use in the basin. State and local NRD financial resources continue to be invested in CREP and AWEP programs to provide permanent and temporary reductions in irrigated lands throughout the basin. DNR has been pursuing efforts in coordination with the Nebraska Republican River Management

Districts Association to develop modeling tools to support the evaluation of potential conjunctive management options throughout the basin. The Department plans to work with the other states through the WaterSMART Basin Studies Program to evaluate system and operational improvements.

Commissioner Dunnigan concluded by reiterating Nebraska's intent to comply with the Republican River Compact. Nebraska will continue to evaluate the needs of the Republican River Basin and make changes as necessary to remain in compliance and continued collaboration with all stakeholders in the basin, including Colorado and Kansas, the NRDs, surface water districts, individual water users, and the U.S. Bureau of Reclamation (USBR).

Commissioner Dunnigan then introduced Tom O' Connor from the Nebraska DNR. Mr. O'Conner proceeded to report on the water administration activities in Nebraska for calendar year 2011. In summary, activities included issuance of closing notices for failure to submit water use reports, regulating notices and closing notices to water users associated with Riverside Canal, Meeker-Driftwood Canal, Cambridge Canal, Frenchman Valley and H&RW Irrigation Districts, as well as opening and closing notices to various storage permit holders. Then in early December 2012 water use reports were mailed to all nonfederal irrigation permit holders in the Republican River Basin.

#### **Report by the U. S. Bureau of Reclamation**

Mr. Aaron Thompson, representing the U.S. Bureau of Reclamation (USBR), highlighted the Bureau's operation in 2011 within the Republican River Basin. Bonny Reservoir releases that began in late 2011 were completed in 2012. Repairs to Red Willow Dam began in 2011 and are scheduled for completion in November 2013. Harlan County Reservoir ended 2011 in flood pool and evacuation of the flood pool was accomplished during the first five months in 2012. Based on September 2012 reservoir storage, it is projected that water-short year administration will be in effect in 2013. The Republican River Basin was selected for a WaterSMART basin study in 2012. Mr. Thompson announced that additional funding was available for various irrigation district projects as well as cost-share grants.

The USBR's operations report is attached as Exhibit C.

#### **Report by the U.S. Geological Survey**

Mr. Jason Lambrecht, representing the U.S. Geological Survey (USGS), reported on its activities in the Republican River Basin for 2011. Mr. Lambrecht provided the Compact Administration with a printed PowerPoint presentation containing the annual data report published by the USGS and all of the graphs mentioned at the meeting. Mr. Lambrecht stated that 2011 recorded discharge for all long-term gages were among the lowest on record, except Red Willow Creek near Red Willow, Nebraska due to the draining of Hugh Butler Lake for repairs to the dam. Most notably, Rock Creek gage near Parks was the lowest recorded discharge in 71 years of record. Mr. Lambrecht also mentioned a USGS product called WaterWatch as a way to acquire statistics for all of the stream gages across the United States.

The USGS PowerPoint presentation, 2011 gage records, and WaterWatch brochure are attached as Exhibit D.

### **Engineering Committee Report**

Scott Ross of Kansas presented the Engineering Committee Report. Copies of the report were presented to the RRCA.

The Engineering Committee and technical representatives from each of the three states worked on a number of items that were assigned at the August 31, 2011 annual meeting. Mr. Ross provided an update on the status of each assignment as follows:

- Complete the user's manual for accounting procedures and provide a resolution for its adoption. The assignment should be continued.
- Exchange by April 15, 2011 the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements. Kansas and Nebraska exchanged information on April 15<sup>th</sup>, 2012 and Colorado in late September. The final data exchanges were completed and model runs were completed on October 4<sup>th</sup>, 2012. Data sets were collected by the Engineering Committee for stream flow, pump data, diversion records, and reservoir evaporation records for the three states. However, final accounting for 2011 was not completed.
- 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. The assignment was discussed and recommended to be continued as an assignment.
- Retain Principia Mathematica to perform ongoing maintenance of the groundwater model and periodic updates requested by the engineering committee. Each state separately contracted with Principia Mathematica for said service.
- Continue development of a five-year accounting spreadsheet. Some discussions took place but no progress on the assignment.
- Continue review of Colorado's augmentation proposal. This item was not pursued by the engineering committee as it is the subject of separate discussions between the states.
- Continue efforts to finalize accounting data for 2008, 2009, and 2010. This is a primary issue currently before the United States Supreme Court.
- Develop a procedure to account for inflows to the stream segment between Guide Rock diversion dam and the relocated stream flow gage. After some discussion and review of alternatives the committee recommends continuing this assignment.
- Discuss the application of the revised Bonny Reservoir area-capacity tables to current and past accounting data. Kansas proposed adoption of the area-capacity tables for the 2011 data and into the future. Colorado would like the committee to consider applying the tables retroactively from 2007 through 2010. The committee will continue to discuss.
- Discuss accounting changes that may be needed for surface water diversions for the purpose of recharging groundwater. No further data was available from the Frenchman-Cambridge Irrigation District project. The committee recommends continuing this assignment.

- Apply the procedure described in Exhibit A of the 2011 Engineering Committee report to fill in missing precipitation data in the groundwater model. The initial assignment was completed. An additional issue surfaced in the 2011 data set such that a refined proposal is now required. Such a proposal will be made at a future meeting of the RRCA.
- Discuss archiving the data and materials from the Conservation Committee study. Several possible data storage locations have been identified.
- Amend the RRCA Rules and Regulations. A new draft Rules and Regulations document was prepared, but some discrepancies and typographical errors were identified and need to be fixed. Those items will be dealt with and a new draft prepared for approval at the next RRCA meeting.

Mr. Ross concluded the Engineering Committee report by listing the tasks that should be reviewed by the Engineering Committee in the coming year. The committee did not recommend adopting the 2011 report at this time due to the absence of the Colorado committee member. Chairman Barfield asked Nebraska to clarify the surface diversions for recharging groundwater project. James Schneider of Nebraska replied that Nebraska had a month-long project in spring 2012, but that the data was not available.

#### **Conservation Committee Report**

Mr. Scott Guenther, representing the Bureau of Reclamation, provided the Conservation Committee status report on the study of the effect of non-federal reservoirs and terraces. The study plan was approved by the RRCA at their annual meeting in 2004 and essentially utilized a water balance model to estimate impacts of non-federal reservoirs and terraces.

Mr. Guenther informed the RRCA that the study had been completed and a draft final report developed. At present, the draft report is being edited by the experts. A one-page summary fact sheet has been produced by the Bureau. The final report is expected to be produced in the months following this annual meeting.

The one-page summary of the Conservation Committee's final report is attached as Exhibit F.

#### **Status of 2006, 2007, 2008, 2009, 2010 and 2011 Final Accounting**

Chairman Barfield noted that this topic was not up for action at the current meeting. The RRCA recognizes that the States will continue to work through the Engineering Committee on finalization of data and other information required for adoption of final accounting for these years.

#### **Action on Engineering Committee Report and assignments**

Chairman Barfield noted that the 2011 Engineering Committee report is not ready for action at this time. Commissioner Wolfe clarified the final assignment to the committee should be to continue discussing retroactive application of the Bonny Reservoir area-capacity tables. A final 2011 Engineering Committee report will be prepared and offered for approval at a future RRCA meeting.

The draft 2011 Engineering Committee Report is attached as Exhibit E.

### **Nebraska's Proposed Alternative Water-Short Year Plan**

Commissioner Dunnigan introduced Nebraska's alternative water-short year plan to the RRCA for consideration and approval. The commissioner noted that Nebraska had received a letter from Kansas on October 4, 2012 with comments on the proposed plan and conclusion that Kansas could not approve this plan. Commissioner Dunnigan noted that there seems to be interpretation differences with the language of Appendix M, specifically item 2. Nebraska feels that all issues were addressed in their plan and offered a resolution to the RRCA, which was read into the record by Mr. Jim Schneider.

Commissioner Dunnigan moved to adopt the State of Nebraska's Plan for Reduction of Computed Beneficial Consumptive Uses under Alternative Water-Short Year Administration. Commissioner Wolfe seconded the motion.

In the discussion that followed, Commissioner Wolfe noted that he appreciated Nebraska's efforts towards compact compliance. He recommended that the RRCA move forward in a cooperative manner to avoid a constant state of litigation. Chairman Barfield offered Kansas' comments on the proposed plan. Kansas does not believe the plan conforms to the requirements set forth in Appendix M. Chairman Barfield stated that he would like to see the states work cooperatively to produce a plan that is agreeable to all parties.

Chairman Barfield noted there was a motion and second to adopt the resolution to approve Nebraska's plan and called for a vote from the commissioners. The RRCA failed to adopt the resolution with Commissioner Dunnigan and Commissioner Wolfe voting "yes" and Chairman Barfield voting "no".

The Nebraska resolution is attached as Exhibit G.

The Nebraska water-short year proposal is attached as Exhibit H.

The Kansas October 4, 2012 letter is attached as Exhibit I.

### **Status of Colorado Resolutions: Bonny Reservoir Accounting and Compact Compliance Pipeline**

Commissioner Wolfe commented on Colorado's desire to have a resolution that deals with its augmentation proposal on the North Fork and its planned operation of Bonny Reservoir on the South Fork. The state will continue to move forward with that goal at a future RRCA meeting. Colorado is committed to continue working with the states and water users in the basin to achieve such a resolution.

### **Status of Kansas resolutions: Bonny Reservoir, Ground Water Recharge, and Modeling Augmentation Flows**

Chairman Barfield stated that Kansas has reserved on the agenda an opportunity to offer its own resolution for revisions to the ground water model for the South Fork sub-basin in light of draining Bonny Reservoir. As Colorado chose to delay its resolution to allow more time to seek agreement, Kansas has no resolution to offer at this time.

Chairman Barfield noted that when the final settlement stipulation was developed in 2002 and 2003 that there was a further commitment to improve their data for estimating recharge in the RRCA groundwater model and further evaluate groundwater irrigation recharge methodologies. The issue has been before RRCA since 2004 and no progress has been made. Kansas was hoping to put forth a proposal at this meeting, but the proposal is not yet ready.



Chairman Barfield discussed efforts to respond to Nebraska's request to develop a framework for application and approval of a process by which future augmentation plans could be approved the RRCA. Kansas offered some discussion points through the engineering committee, which should be discussed in the near future. Chairman Barfield noted that Nebraska's Rock Creek project is complete and the expectation is that augmentation plans will be brought before RRCA and approved prior to implementation.

### **Remarks from the Public**

Chairman Barfield opened the floor for public comments.

Mr. Dennis Coryell, representing the Republican River Water Conservation District in Colorado, wanted to emphasize the importance of the Compact Administration reaching an agreement on the accounting for the South Fork sub-basin in light of the fact that Bonny Reservoir has been drained. Mr. Coryell noted that the Colorado pipeline is complete and undergoing testing at this time. He urged the RRCA to approve the accounting for inflows to the North Fork of the Republican River to assist Colorado with its compliance. Mr. Coryell also mentioned that the District budget committee recommended an allocation of a million dollars in the form of rebates for decreases in historical consumptive use. He urged the Administration to work together to reach agreement on Colorado's issues.

### **Future Meeting Arrangements**

There was a discussion by the commissioners to move the annual meeting date to late August. The Engineering Committee was directed to offer an appropriate date in the forthcoming draft of the Rules and Regulations.

Chairman Barfield noted that the 2013 annual meeting will be held in Colby, Kansas and possible dates will be determined at some point in the future.

### **Adjournment**

Chairman Barfield moved to adjourn the annual meeting. Commissioner Wolfe seconded and the motion passed unanimously. The meeting was adjourned at 10:08 a.m.

The transcript for the 2012 RRCA annual meeting is attached as Exhibit J.

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David W. Barfield, Kansas Commissioner, Chairman

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Dick Wolfe, Colorado Commissioner

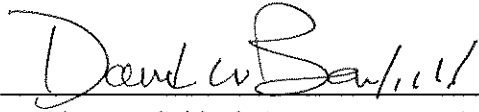
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Brian Dunnigan, Nebraska Commissioner

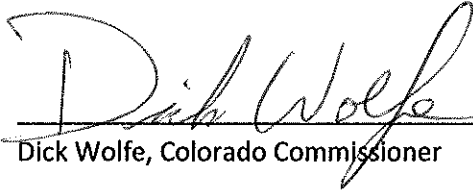
**Exhibits**

- Exhibit A: List of meeting attendees
- Exhibit B: Agenda
- Exhibit C: USBR annual report
- Exhibit D: USGS annual report and accompanying handouts
- Exhibit E: Engineering Committee draft report
- Exhibit F: Conservation Committee handout
- Exhibit G: Nebraska Water-Short Year Resolution
- Exhibit H: Nebraska Water-Short Year Proposal dated July 30, 2012
- Exhibit I: Kansas letter dated October 4<sup>th</sup>, 2012
- Exhibit J: Transcript of the 2012 RRCA annual meeting in Junction City, Kansas

The 51<sup>st</sup> annual RRCA report is hereby approved on this 12<sup>th</sup> day of September 2013.

A handwritten signature in cursive script, reading "David W. Barfield".

David W. Barfield, Chair, Kansas Commissioner

A handwritten signature in cursive script, reading "Dick Wolfe".

Dick Wolfe, Colorado Commissioner

A handwritten signature in cursive script, reading "Brian P. Dunnigan".

Brian Dunnigan, Nebraska Commissioner

# **Exhibit A**

## **Attendance List**

## Republican River Compact Commissioners Annual Meeting

### Attendance List

Junction City, Kansas

October 16, 2012

<u>Name</u>	<u>Representing</u>
David W. Barfield	Kansas Commissioner, Chair
Dick Wolfe	Colorado Commissioner
Brian P. Dunnigan	Nebraska Commissioner
Chris Grunewald	Kansas Attorney General's Office
Burke Griggs	Kansas Division of Water Resources
Scott Ross	Kansas Division of Water Resources
Chris Beightel	Kansas Division of Water Resources
Chelsea Juricek	Kansas Division of Water Resources
Hongsheng Cao	Kansas Division of Water Resources
Sam Perkins	Kansas Division of Water Resources
Mike Sullivan	Colorado Division of Water Resources
Dave Keeler	Colorado Division of Water Resources
Ivan Franco	Colorado Division of Water Resources
Scott Steinbrecher	Colorado Attorney General's Office
Willem Schreüder	Principia Mathematica
David Robbins	Republican River Water Conservation District
Dennis Montgomery	Republican River Water Conservation District
Peter Ampe	Republican River Water Conservation District
Dennis Coryell	Republican River Water Conservation District
Deb Coryell	Republican River Water Conservation District
Jack Dowell	Republican River Water Conservation District
Deb Daniel	Republican River Water Conservation District
Justin Lavene	Nebraska Attorney General's Office
Blake Johnson	Nebraska Attorney General's Office
Jim Schneider	Nebraska Department of Natural Resources
Jesse Bradley	Nebraska Department of Natural Resources
Tom O'Connor	Nebraska Department of Natural Resources
Paul Koester	Nebraska Department of Natural Resources
Tom Wilmoth	Outside Council for Nebraska
Doug White	Outside Council for Nebraska
Tom Riley	Flatwater Group
David Kracman	Flatwater Group
Mark Groff	Flatwater Group
Nate Jenkins	Upper Republican Natural Resource District
Jasper Fanning	Upper Republican Natural Resource District
Dan Smith	Middle Republican Natural Resource District
Mike Clements	Lower Republican Natural Resource District

Attendance List

Junction City, Kansas

October 16, 2012

<u>Name</u>	<u>Representing</u>
Mike Delka	Nebraska Bostwick Irrigation District
Brad Edgerton	Frenchman-Cambridge Irrigation District
Aaron Thompson	United States Bureau of Reclamation
R. Scott Guenthner	United States Bureau of Reclamation
Craig Scott	United States Bureau of Reclamation
RJ Harms	Corps of Engineers, Milford Lake
Jason Lambrecht	United States Geological Survey, NEWSC
Jim Koelliker	Kansas State University – Manhattan
Galen Biery	Kansas Rural Water District No. 1
Kent Askren	Kansas Farm Bureau
Steve Adams	Kansas Wildlife, Parks & Tourism
Harlan Herman	Inavale, Nebraska
Debra Herman	Inavale, Nebraska

**Exhibit B**

**Annual Meeting**

**Agenda**

PROPOSED AGENDA FOR  
**52nd ANNUAL MEETING OF THE  
REPUBLICAN RIVER COMPACT ADMINISTRATION**

October 16, 2012, 9:00 AM

Junction City, Kansas

1. Introductions
2. Adoption of the Agenda
3. Status of Report and Transcript for 2011 Annual Meeting
4. Status of Previous Annual and Special Meetings Reports and Transcripts
5. Report of Chairman and Commissioner's Reports
  - a. Kansas
  - b. Colorado
  - c. Nebraska
6. Federal Reports
  - a. Bureau of Reclamation
  - b. U.S. Army Corps of Engineers
  - c. U.S. Geological Survey
7. Committee Reports
  - a. Engineering Committee
    - i. Assignments from 2011 Annual Meeting
    - ii. Committee Recommendations to RRCA
    - iii. Other Matters
    - iv. Recommended assignments for Engineering Committee
  - b. Conservation Committee
8. Old Business
  - a. Status of unapproved previous accounting
9. New Business and Assignments to Compact Committees
  - a. Discussion of Engineering Committee Report and assignments
  - b. Action on Nebraska's proposed Plan for Reduction of Computed Beneficial Consumptive Uses
  - c. Status of Colorado's Resolution Regarding Operation and Accounting for Bonny Reservoir.
  - d. Status of Colorado's Resolution Regarding Colorado's Compact Compliance Pipeline.
  - e. Status of Kansas' proposal for revisions to the groundwater model for the South Fork sub-basin in light of the draining of Bonny Reservoir.
  - f. Status of Kansas' proposal for adoption of a common set of procedures and recharge values by system type for estimating groundwater irrigation recharge in the RRCA groundwater model.
  - g. Status of Kansas' proposal for accounting and modeling of augmentation flows.
10. Remarks from the Public
11. Future Meeting Arrangements
12. Adjournment



**Exhibit C**

**USBR Annual Report**

# RECLAMATION

*Managing Water in the West*

## **Nebraska-Kansas Area Office**

**Report**

To The

**Republican River**

**Compact Administration**

**Junction City, KS**



**U.S. Department of the Interior  
Bureau of Reclamation  
Great Plains Region**

**October 2012**

## REPUBLICAN RIVER COMPACT MEETING

October 16, 2012  
Junction City, Kansas

### 2011 Operations

As shown on the attached Table 1, precipitation in the Republican River Basin varied from 100 percent of normal at Swanson Lake to 140 percent of normal at Keith Sebelius Lake. Total precipitation at Reclamation project dams ranged from 19.01 inches at Bonny Dam to 34.36 inches at Norton Dam.

Inflows varied from 67 percent of the most probable forecast at Enders Reservoir to 139 percent of the most probable forecast at Keith Sebelius Lake. Inflows into Enders Reservoir totaled 7,516 AF while inflows at Harlan County Lake totaled 174,830 AF.

Average farm delivery values for total irrigable acres were as follows:

<u>District</u>	<u>Farm Delivery</u>
Frenchman Valley	1.4 inches
H&RW	0.0 inches
Frenchman-Cambridge	5.7 inches
Almena	1.5 inches
Bostwick in NE	4.9 inches
Kansas-Bostwick	7.0 inches

### 2011 Operation Notes

**Bonny Reservoir** – Started the year at elevation 3652.27 feet, 19.7 feet below the top of conservation. The annual computed inflow totaled 9,008 AF. The reservoir level peaked at elevation 3655.89 feet (10,724 AF) on June 2<sup>nd</sup>. River releases were made from June 20<sup>th</sup> through July 9<sup>th</sup>, and again from September 21<sup>st</sup> through December 31<sup>st</sup> as requested by the State of Colorado. A total of 8,840 AF was released to the river. Another 272 AF was released into Hale Ditch from September 23<sup>rd</sup> through October 9<sup>th</sup>. The reservoir elevation at the end of the year was 32.3 feet below the top of conservation at 3639.70 feet.

**Enders Reservoir** – Started the year at elevation 3092.49 feet, 19.8 feet below the top of conservation. The 2011 computed inflow totaled 7,516 AF. The reservoir level increased slightly during the spring to a peak elevation of 3094.83 feet on June 21<sup>st</sup>. The conservation pool has not filled since 1968. Due to the extremely low available water supply, no water was released from Enders Reservoir. This was the tenth consecutive year that H&RW Irrigation District did not divert water. It was also the eighth consecutive year that storage releases were not made for Frenchman Valley Irrigation District. The end of the year reservoir level was 19.0 feet (3093.26 feet) below the top of conservation.

**Swanson Lake** – Started the year at elevation 2740.15 feet, 11.8 feet below the top of conservation. The annual computed inflow totaled 33,791 AF. The lake level gradually increased to a peak elevation of 2745.40 feet (6.6 feet below the top of conservation) on June 21<sup>st</sup>. The reservoir level decreased during the irrigation season reaching elevation 2740.17 feet on September 3<sup>rd</sup>. The district diverted 21,538 AF into Meeker-Driftwood Canal from June 20<sup>th</sup> through September 2<sup>nd</sup>. At the end of the year the reservoir level was 11.8 feet below the top of conservation at 2740.16 feet.

**Hugh Butler Lake** – Started the year at elevation 2553.52 feet, 28.3 feet below the top of conservation. The 2011 computed inflow was 17,863 AF. Due to dam safety concerns, releases were made throughout the year to maintain the reservoir elevation between 2552.00 and 2554.00 feet. No irrigation releases were made from Hugh Butler Lake in 2011. The end of year storage of 5,993 AF was the lowest end of December storage ever recorded at the site (elevation 2553.45 feet), 28.4 feet below the top of conservation.

**Harry Strunk Lake** – Started the year at elevation 2365.71 feet, only .4 foot below the top of conservation. The annual computed inflow totaled 44,135 AF. Releases were made during the first three months of the year to maintain the pool level. The reservoir was allowed to fill on April 17<sup>th</sup> and the reservoir level gradually increased to elevation 2367.00 feet on May 3<sup>rd</sup>. Runoff from late May storms increased the pool level to a peak elevation of 2368.38 feet on May 30<sup>th</sup> (2.3 feet into the flood pool). Uncontrolled spills along with irrigation releases dropped the reservoir level to elevation 2359.21 feet by early September. Irrigation releases began in earnest on July 17<sup>th</sup> and ran through September 9<sup>th</sup>. The district diverted 28,850 AF into Cambridge Canal. Late fall and early winter inflows increased the level of Harry Strunk Lake to only 0.9 foot below the top of conservation at the end of the year (2365.24 feet).

**Keith Sebelius Lake** – Started the year at elevation 2296.81 feet, 7.5 feet below the top of conservation. The total 2011 computed inflow was 11,995 AF. The reservoir level slowly increased to elevation 2298.18 feet on May 30<sup>th</sup>. Irrigation releases were made during July reducing the lake level by about 2 feet. Norton Dam recorded 10.42 inches of precipitation during August, the greatest ever recorded for the month. Runoff from the August storms increased the level of Keith Sebelius Lake to elevation 2297.02 feet. Norton Dam recorded another 7.26 inches of rainfall in October, the second greatest on record for the month. Runoff from the storms increased the lake level again and Keith Sebelius Lake ended the year at elevation 2298.43 feet (5.9 feet below the top of conservation). A total of 2,277 AF was diverted into Almena Canal.

**Harlan County Lake** – Started the year at elevation 1946.05 feet, .3 foot into the flood pool. The 2011 computed inflow totaled 174,830 AF. River releases varied from 50 to 350 cfs during the first three months of the year and the lake level gradually increased to elevation 1947.40 feet by March 21<sup>st</sup>. The release was staged up at this time to 1,000 cfs for approximately four days. The elevated release was made to help prevent the Republican River channel from developing areas of vegetation and to re-establish channel capacity. The lake level was maintained near elevation 1946.5 feet through mid May. Runoff from late May storms increased the reservoir level to elevation 1947.30 feet on May 31<sup>st</sup>. River releases were staged up to 500 cfs during early June to maintain this elevation. Irrigation releases

started June 14<sup>th</sup> and continued through September 9<sup>th</sup>. Late summer rainfall significantly reduced irrigation demands and the pool level dropped to elevation 1944.70 feet by October 6<sup>th</sup>. Bostwick in Nebraska Irrigation District diverted 28,262 AF in 2011. The reservoir elevation was 1946.39 feet (0.7 foot in the flood pool) on December 31, 2011. A ten year summary of Harlan County Lake operations is shown on Table 3.

**Lovewell Reservoir** – Started the year at elevation 1579.47 feet, 3.1 feet below the top of conservation. The pool level gradually increased to elevation 1582.12 feet on May 18<sup>th</sup>. Three separate storm systems moved through North Central Kansas from May 18<sup>th</sup> through June 2<sup>nd</sup>. Each system resulted in 2 to 4 inches of rainfall with localized heavier amounts. Runoff from these storms increased the reservoir level to a peak elevation of 1590.12 feet on May 27<sup>th</sup> (7.5 feet into the flood pool with 53 percent of flood storage occupied). Flood releases were staged up to 1,250 cfs and a Response Level 1 was issued due to the amount of flood storage occupied. Flood releases continued at 1,250 cfs through June 6<sup>th</sup> when the Corps of Engineers ordered the releases staged off to mitigate downstream flooding on the Missouri River. Irrigation releases began on June 7<sup>th</sup> and continued through September 15<sup>th</sup>. The reservoir level dropped from the flood pool on August 25<sup>th</sup> and ended the irrigation season at elevation 1580.86 feet. The Kansas Bostwick Irrigation District diverted a total of 54,072 AF in 2011. A total of 36,183 AF was diverted into Courtland Canal from Lovewell Reservoir. The reservoir level at the end of the year was 1581.31 feet (1.3 feet below top of conservation).

### Current Operations (As of 8/31/12)

**Bonny Reservoir** – The reservoir is currently empty. The State of Colorado requested river releases totaling approximately 2,100 AF during the first five months of the year at which time no storage remained in the reservoir. Bonny Dam has recorded only 7.77 inches of precipitation during the first eight months of the year (56% of average).

**Swanson Lake** – The lake level is currently 18.7 feet from full and is 7.1 feet below last year at this time. Precipitation for the year is at 72% of normal (11.43 inches). Considerable irrigation releases were made from Swanson Lake this past season due to the hot and dry conditions.

**Enders Reservoir** - The reservoir level is currently 20.7 feet below full and 2.2 feet below last year at this time. Enders Dam recorded 10.08 inches of precipitation during the first eight months of the year. Normal precipitation during this period is 15.25 inches. Due to the water supply shortage, H&RW Irrigation District is not irrigating for the eleventh year in a row. This is also the ninth consecutive year that Frenchman Valley Irrigation District has not received storage water for irrigation.

**Hugh Butler Lake** – The lake level is currently 29.9 feet below full. The precipitation total so far this year is 8.65 inches (56% of normal). The lake level is 1.7 feet below last year at this time. Releases are being made from Hugh Butler Lake to maintain the reservoir elevation within the parameters provided by the Interim Operating Plan implemented after cracking was discovered in the embankment.

**Harry Strunk Lake** – The lake level is currently 16.7 feet below the top of conservation. Releases were made throughout the late winter and spring to maintain the reservoir elevation below the flood pool. The lake filled on April 21<sup>st</sup> with the reservoir level peaking on May 5<sup>th</sup> at .5 foot into the flood pool. Precipitation at the dam during the first eight months of the year was 10.73 inches (66% of normal). Irrigation demands were high during 2012 due to the hot and dry conditions. The lake level is currently 10.4 feet below last year at this time.

**Keith Sebelius Lake** – Currently 9.6 feet below full. Lake level is 2.3 feet below last year at this time. Irrigation releases were limited during 2012. Precipitation at the dam during the first eight months of the year was 12.60 inches (66% of normal).

**Harlan County Lake** – The current water surface level is approximately 9.3 feet below full. The lake level is 8.7 feet below last year at this time. Harlan County Dam has recorded 15.78 inches of precipitation so far this year (88% of normal). Releases were made during the first five months of the year to maintain the pool level near elevation 1946.0 feet. The available irrigation supply from Harlan County Lake on June 30, 2012 was 132,900 AF, indicating that “Water-Short Year Administration” would not be in effect. Irrigation releases were above normal due to the hot and dry conditions experienced in 2012.

**Lovewell Reservoir** – The reservoir level is currently 9.7 feet below the top of conservation and approximately 9.1 feet below last year’s elevation at this time. Lovewell Dam recorded 20.47 inches of precipitation during the first eight months of the year (90% of average). Similar to other projects, irrigation demands were high in 2012 due to the hot and dry conditions.

A summary of data for the first eight months of 2012 is shown on Table 2.

### Other Items

**Inspections** – Periodic Facility Reviews were conducted at Bonny and Norton dams during 2011. Annual Site Inspections were conducted at Enders, Lovewell, Medicine Creek and Trenton dams in 2011. Ongoing special exams occurred at Red Willow Dam throughout 2011.

**Safety of Dams** – Red Willow Dam – Construction continues on the Safety of Dams Modification at Red Willow Dam. To date, SEMA Construction has excavated approximately 350,000 cubic yards of the downstream face of Red Willow Dam including exposing a portion of the spillway conduit and the outlet works conduit. Reconstruction has begun; including placement of a geonet/sand and gravel filtration system along the entire length of the dam.

The filtration system involves placing nearly 150,000 square yards of geonet and geotextile materials, 100,000 cubic yards of sand and 50,000 cubic yards of gravel. This system will then be overlain with approximately 470,000 cubic yards of embankment material.

Approximately 75% of the geonet has been placed on the downstream face, and is being systematically covered with layers of the sand and gravel, creating a filter. Intersecting the filter at the downstream toe of the dam, a horizontal drain consisting of a layer of gravel and a layer of sand has been constructed. The original pipe drain at the toe of the dam has also been replaced. This filter and drainage system provides valuable protection against internal erosion of the dam embankment. Although the contract completion date is currently November 27, 2013, SEMA and Reclamation are doing everything possible to complete the contract at an earlier date.

**WaterSMART Basin Study Program** - The States of Colorado, Nebraska, and Kansas and the U.S. Department of the Interior, Bureau of Reclamation are working together as study partners to conduct the Republican River Basin Study. This study is part of the U.S. Department of the Interior WaterSMART Basin Study Program. The Republican River Basin Study area covers the entire Republican River Basin in eastern Colorado, southern Nebraska, and northern Kansas down to the Clay Center gauging station in Kansas.

This two-year Study will evaluate the viability of water management strategies to optimize surface and groundwater use in consideration of meeting multiple demands and the potential effects of climate change/variability. It will:

- Project future supply and demand in the Republican River Basin.
- Analyze how existing water operations and infrastructure will perform in the face of uncertain or variable water supply and/or demands.
- Identify and evaluate options to improve operations and infrastructure to address future water supply needs.
- Recommend options (operations and infrastructure) to supply adequate water in the future.

TABLE 1  
NEBRASKA-KANSAS PROJECTS  
Summary of Precipitation, Reservoir Storage and Inflows  
CALENDAR YEAR 2011

Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-10		Storage 12-31-11 AF	Gain or Loss AF	Maximum Storage Content		Storage Date	Minimum Storage Content		Storage Date	Total Inflow AF	Percent Of Most Probable %
			AF	%			AF	%		AF	%			
Box Butte	20.94	124	14,523	15,464	15,464	941	24942	JUL 4	JUL 4	12635	SEP 6	17,737	111	
Merritt	27.95	137	60,831	61,370	61,370	539	67602	JUN 20	JUN 20	46824	SEP 12	192,404	105	
Calamus	24.22	100	108,981	105,099	105,099	-3,882	129253	JUN 27	JUN 27	75169	OCT 1	317,697	117	
Davis Creek	27.26	110	9,350	9,280	9,280	-70	28234	JUL 19	JUL 19	8772	APR 13	44,921	91	
Bonny	19.01	111	6,923	135	135	-6,788	10724	JUN 2	JUN 2	135	DEC 25	9,008	78	
Enders	21.46	113	16,743	17,484	17,484	741	19075	JUN 21	JUN 21	16761	JAN 1	7,516	67	
Swanson	19.99	100	62,085	62,156	62,156	71	82354	JUN 21	JUN 21	59393	NOV 12	33,791	99	
Hugh Butler	21.58	110	6,034	5,993	5,993	-41	8007	MAY 29	MAY 29	5429	APR 14	17,863	122	
Harry Strunk	23.06	111	33,936	33,098	33,098	-838	39041	MAY 30	MAY 30	24014	SEP 9	44,135	115	
Keith Sebelius	34.36	140	20,600	23,218	23,218	2,618	23219	DEC 31	DEC 31	19571	AUG 4	11,995	139	
Harlan County	30.69	135	318,364	322,964	322,964	4,600	339236	JUN 22	JUN 22	300830	OCT 6	174,830	131	
Lovewell	27.87	101	27,954	31,938	31,938	4,884	62412	MAY 27	MAY 27	27105	JAN 2	83,167	131	
Kirwin	27.59	117	98,916	99,989	99,989	1,073	106268	JUN 18	JUN 18	93654	OCT 6	49,576	173	
Webster	23.04	97	63,328	58,196	58,196	-5,132	72886	JUN 5	JUN 5	54173	OCT 7	21,937	93	
Waconda	30.80	121	198,060	211,190	211,190	13,130	398868	JUN 6	JUN 6	175048	APR 14	427,789	274	
Cedar Bluff	14.99	71	91,110	79,365	79,365	-11,745	91319	MAR 23	MAR 23	78953	DEC 3	7,116	37	



TABLE 2  
 NEBRASKA-KANSAS AREA OFFICE  
 Summary of Precipitation, Reservoir Storage and Inflows

JANUARY - AUGUST 2012

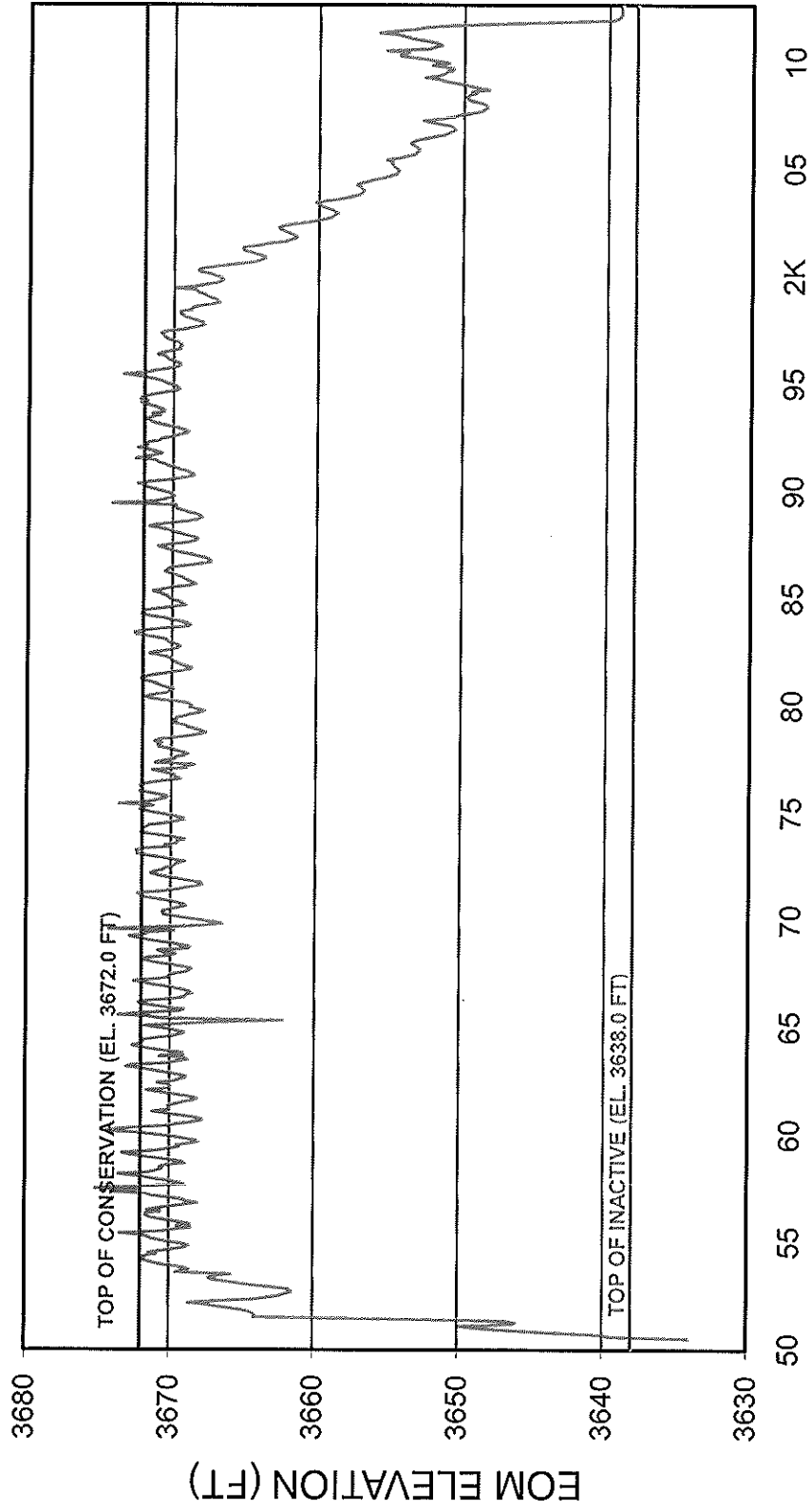
Reservoir	Precip. Inches	Percent Of Average %	Storage		Gain or Loss AF	Inflow		Percent Of Most Probable %
			8/31/2011 AF	8/31/2012 AF		AF	AF	
Bonny	7.77	56	7,234	0	(7,234)	2,580	30	
Enders	10.08	66	17,939	15,889	(2,050)	3,488	48	
Swanson	11.43	72	62,866	40,133	(22,733)	22,677	82	
Hugh Butler	8.65	56	6,074	5,121	(953)	8,858	81	
Harry Strunk	10.73	66	24,885	13,042	(11,843)	22,835	79	
Keith Sebelius	12.60	66	20,929	17,442	(3,487)	4,473	58	
Harlan County	15.78	88	305,904	202,945	(102,959)	76,793	67	
Lovewell	18.42	90	33,959	13,497	(20,462)	39,272	88	

TABLE 3  
HARLAN COUNTY LAKE

Year	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches) (Inches)	Precip. (% of Average) (22.76 inches)	Rep. Basin Reclamation Dams (% of Average)	End of Year Content (AF)	Projected Irrig. Water Supply On June 30th (AF)
2002	60,094	98,518	43,988	16.86	74%	60%	160,463	116,100
2003	48,430	51,237	34,307	16.70	73%	93%	113,346	62,000
2004	25,099	0	30,601	22.83	100%	111%	107,050	0
2005	53,682	0	32,620	22.51	99%	107%	128,111	14,100
2006	30,077	12,280	29,609	20.62	91%	101%	116,299	14,400
2007	198,528	21,237	38,197	26.92	118%	114%	255,393	111,700
2008	224,841	114,938	45,985	30.31	133%	131%	319,311	175,900
2009	136,747	94,079	41,721	24.50	108%	128%	320,258	155,600
2010	239,054	194,055	46,893	31.66	139%	119%	318,364	147,800
2011	174,830	120,989	49,241	30.69	135%	115%	322,964	157,700

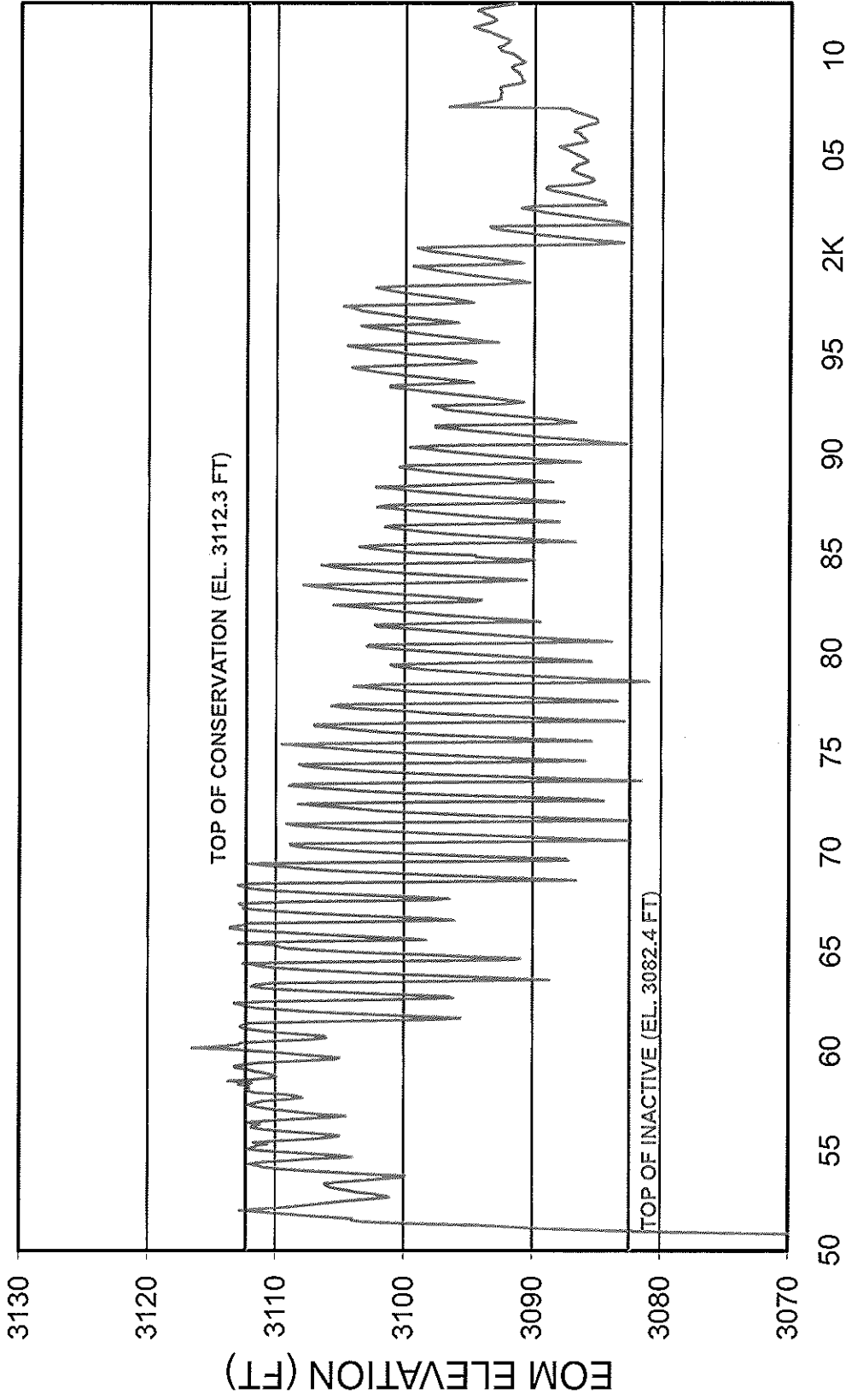
\*NOTE: On June 30, 2012 Projected Irrig. Water Supply was 132,900 AF.

# BONNY RESERVOIR END OF MONTH ELEVATION



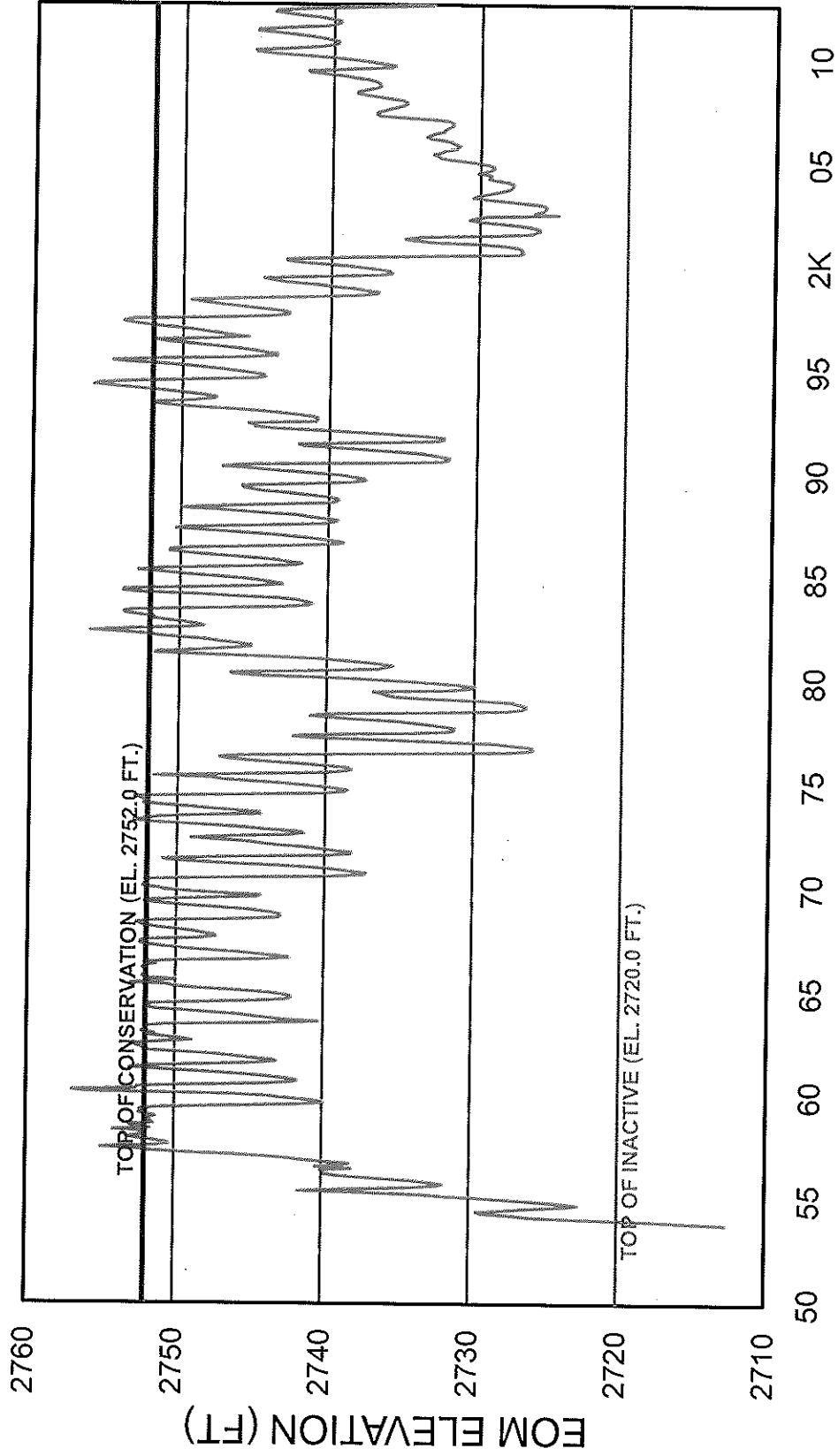
JUL 1950 THROUGH AUG 2012

# ENDERS RESERVOIR END OF MONTH ELEVATION



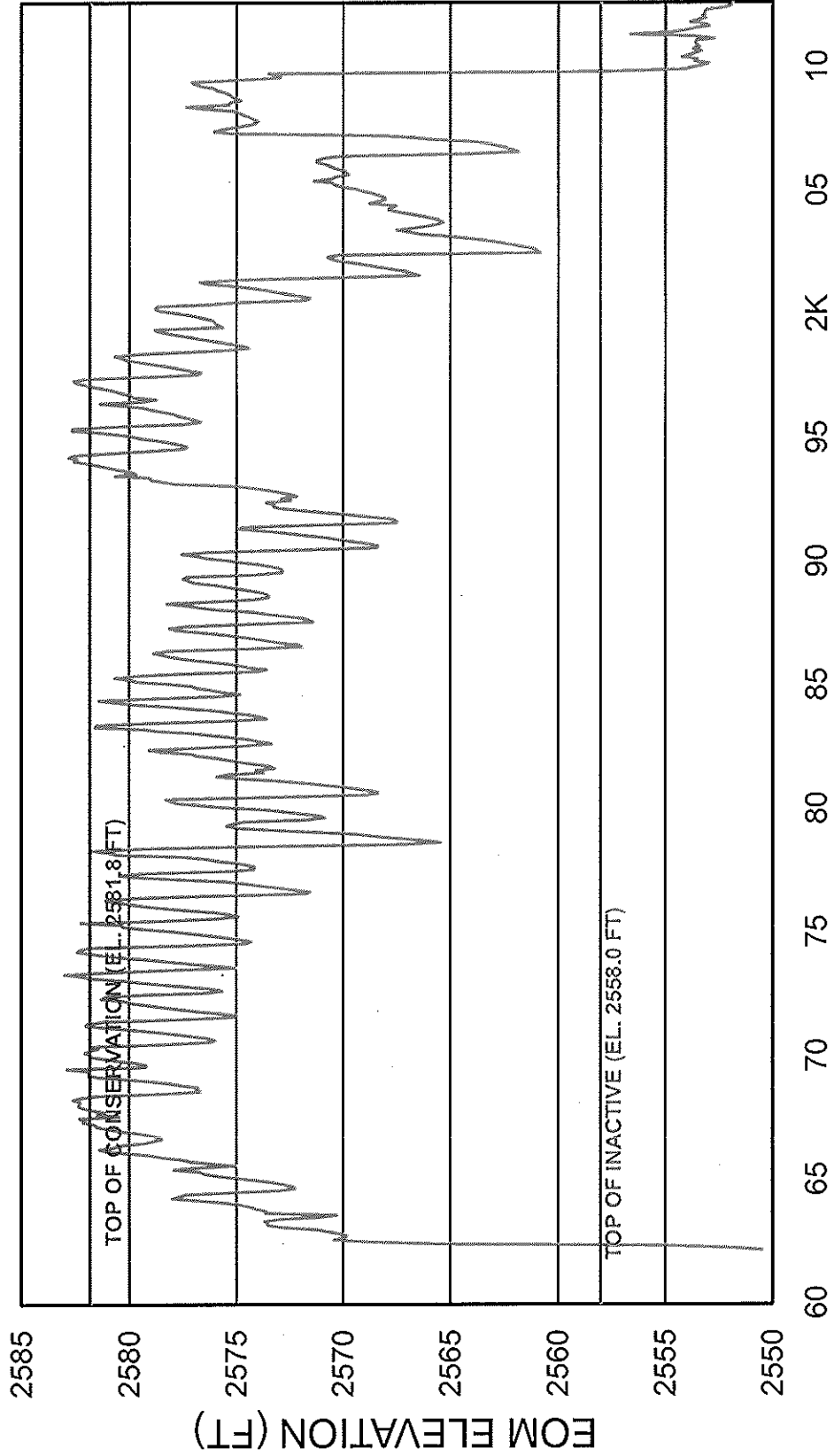
OCT 1950 THROUGH AUG 2012

# SWANSON LAKE END OF MONTH ELEVATION



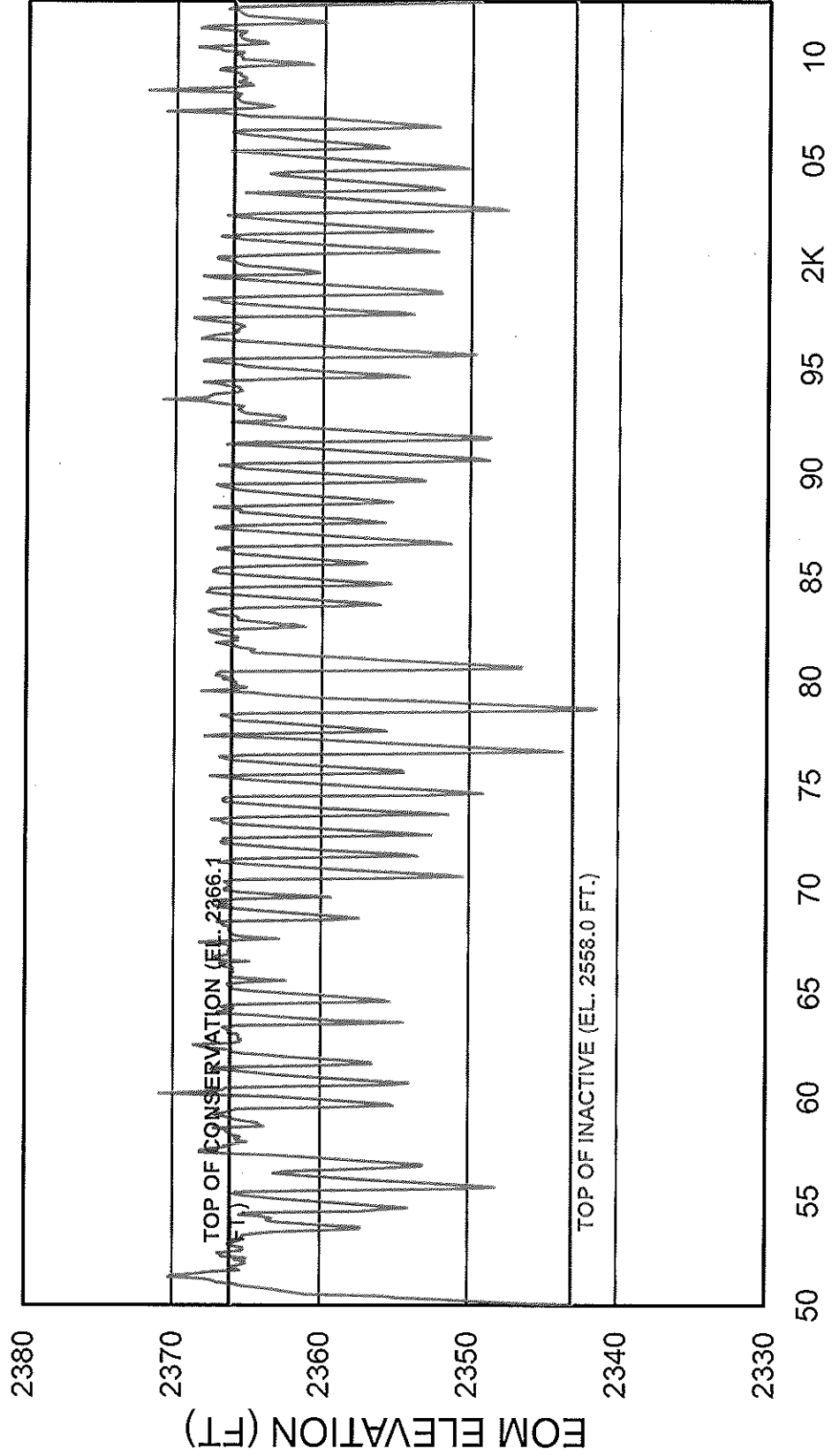
NOV 1953 THROUGH AUG 2012

# HUGH BUTLER LAKE END OF MONTH ELEVATION



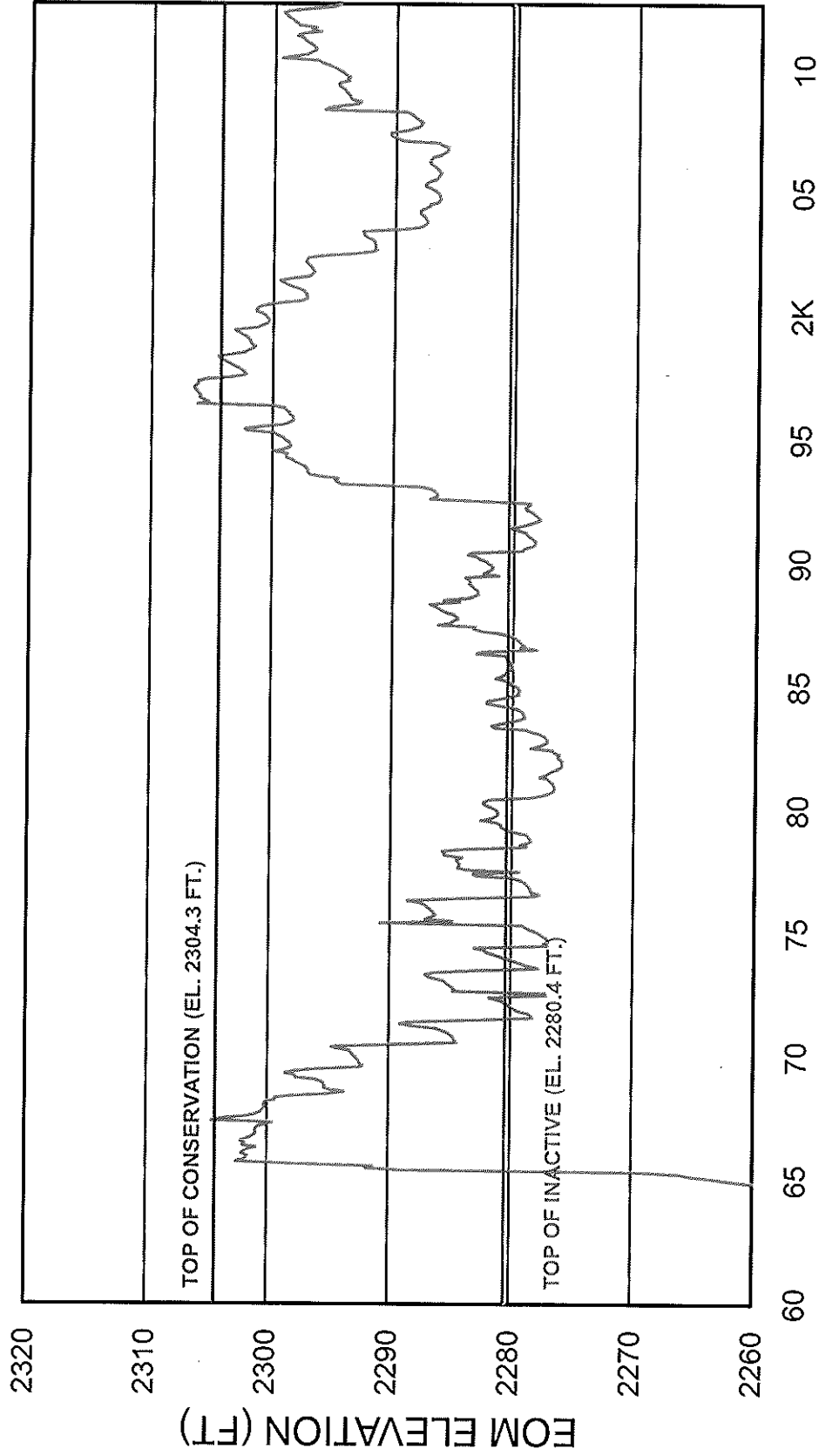
MAR 1962 THROUGH AUG 2012

# HARRY STRUNK LAKE END OF MONTH ELEVATION



JAN 1950 THROUGH AUG 2012

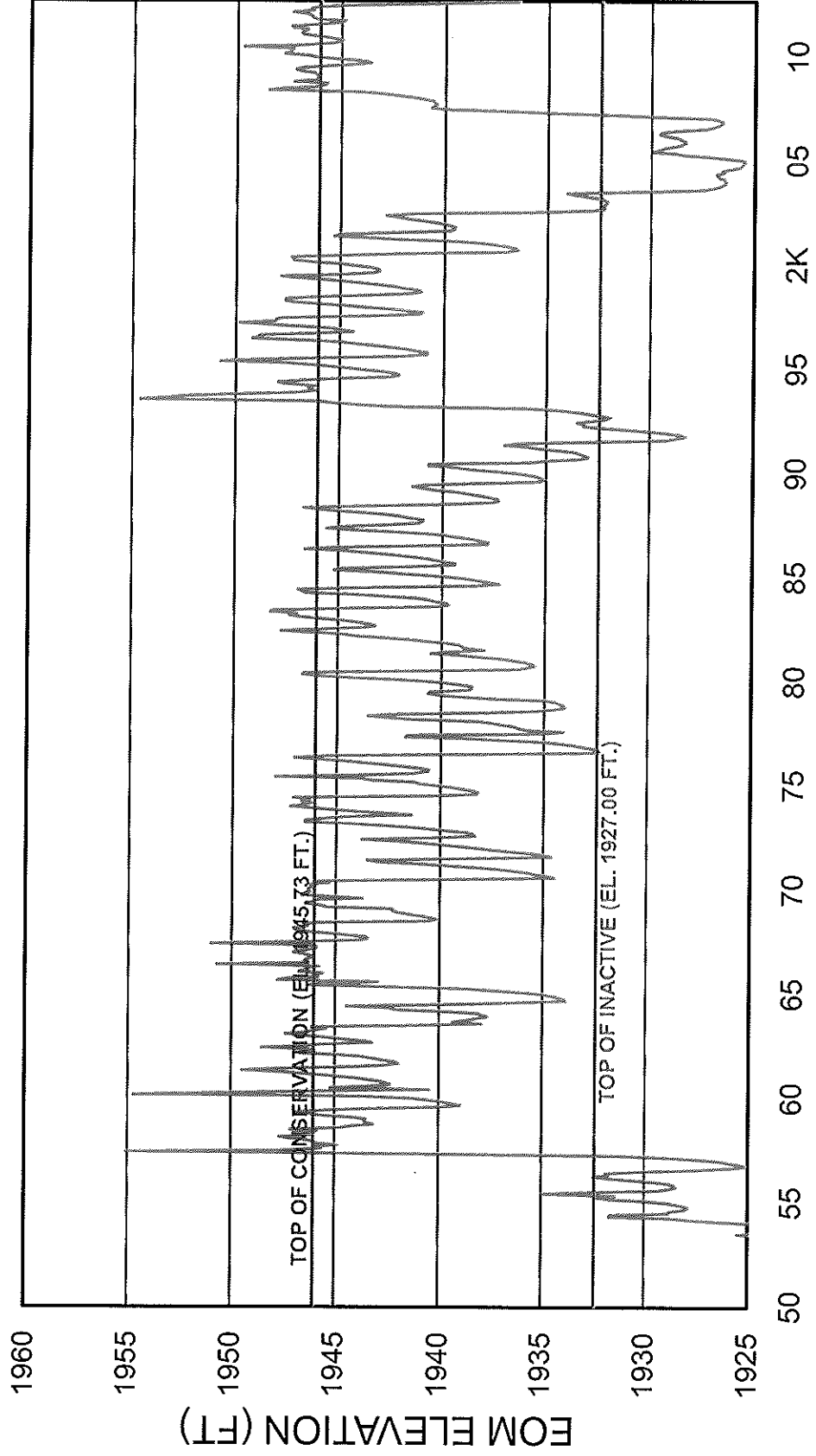
# KEITH SEBELIUS LAKE END OF MONTH ELEVATION



OCT 1964 THROUGH AUG 2012

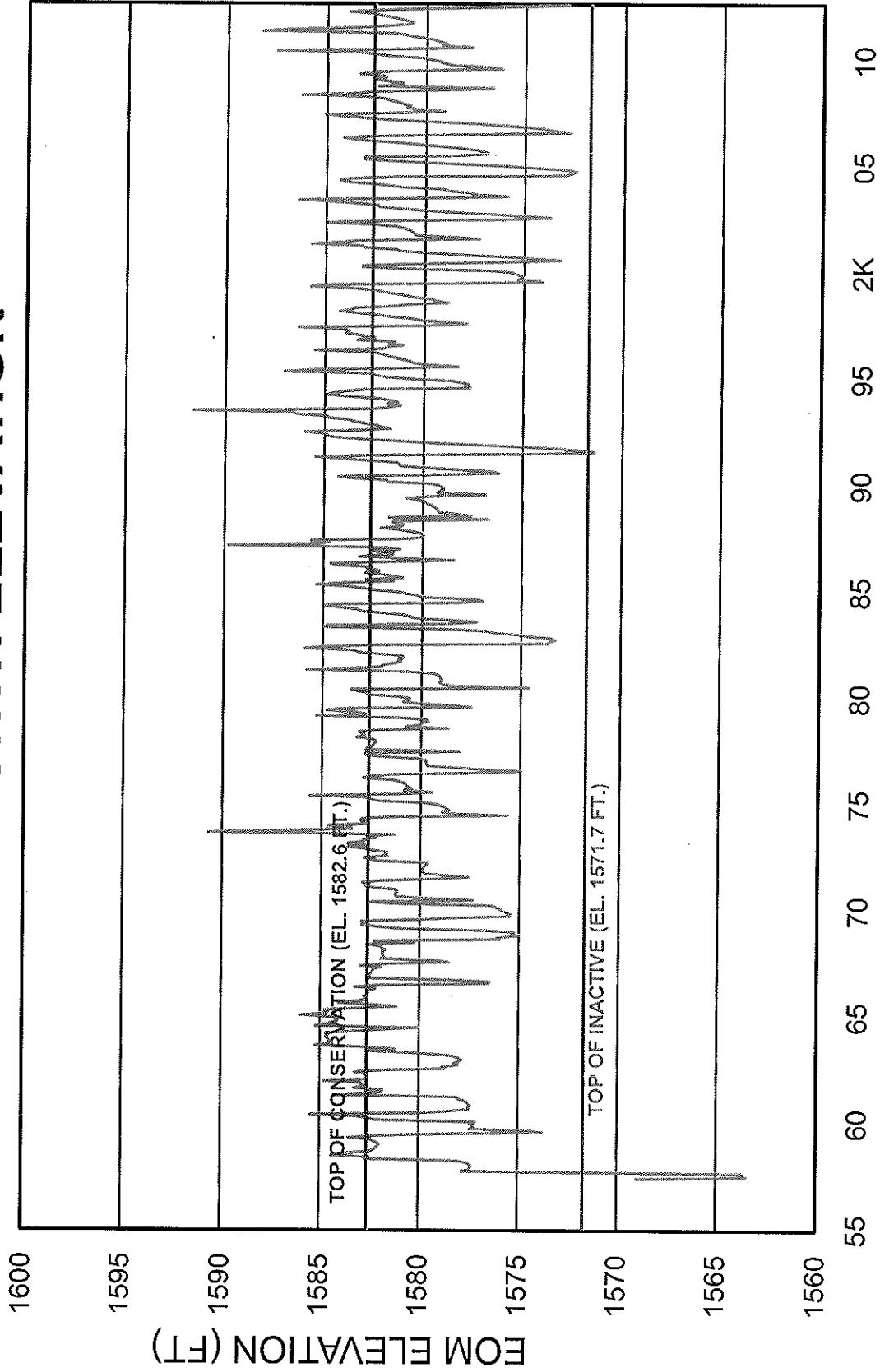


# HARLAN COUNTY LAKE END OF MONTH ELEVATION



NOV 1952 THROUGH AUG 2012

# LOVEWELL RESERVOIR END OF MONTH ELEVATION



JUN 1957 THROUGH AUG 2012

**Exhibit D**

**USGS Report and**

**Handouts**

# Republican River Compact Nebraska Stream Gaging Data Water Year 2011

Presented to  
Republican River Compact Administration  
By Jason Lambrecht, Hydrologic Data Section Chief,  
Nebraska Water Science Center

October 16, 2012  
Junction City, KS



## Summary handout – stations published by U.S. Geological Survey (USGS)

Republican River Basin streamflow gaging stations with records published by USGS for water year (WY) 2011

(DCP, data-collection platform; NWRP, Nebraska Department of Natural Resources; USACE, U.S. Army Corps of Engineers; USER, U.S. Bureau of Reclamation; USGS, U.S. Geological Survey)

Station number	Station name	Mean discharge (cfs)		WY 2011 as percentage of long-term mean	WY 2011 as rank (out of 10 highest)	WY 2011 for long-term mean	Remarks
		WY 2011	Long-term				
<b>USGS Compact stations supported by the National Streamflow Information Program (NSIP)</b>							
0641350	Arkansas River at Hepler, Neb.	155	18.9	8.2%	7479	1933-2011	
0643700	North Fork Republican River at Coldwater State Line	78.1	61.9	79.1%	2578	1926-2011	
0643900	Elmer Creek near Hepler, Neb.	2.63	6.15	42.8%	6671	1941-2011	
0682400	Rock Creek at Finks, Neb.	0.12	1.2	10.0%	7173	1941-2011	
0692700	South Fork Republican River near Barkman, Neb.	11.62	35.4	33.1%	4574	1928-2011	
0695600	Franchot Creek at Cuba, Neb.	67.8	67.3	99.7%	4841	1961-2011	Since 2004, USACE
0695900	Crutcher Creek near McCook, Neb.	3.3	8.4	39.3%	5606	1948-2011	
0698400	Red Willow Creek near Red Willow, Neb.	26.8	19.7	73.5%	250	1927-2011	Since 2004, USACE
0694700	Sage Creek near Sutherland, Neb. (USACE study DCP)	17.10	3	17.5%	3305	1948-2011	
0695200	Courtesy Canal at Hepler, Neb. (USGS DCP)	43.2	75.4	17.3%	4647	1959-2011	
<b>USGS stations supported by USGS and/or other Federal or State agencies</b>							
0642400	Republican River at Ripston, Neb.	41	95.8	47.8%	4441	1961-2011	Funded by USACE and NSIP
0691700	Republican River at McCook, Neb.	31.2	124.8	25.0%	5057	1926-2011	Funded by USER, NWRP, and NSIP
0644900	Republican River near O'Neill, Neb.	142	222	64.0%	4744	1928-2011	Funded by USACE
<b>NWRP stations with USGS/USACE support for DCP, Web display, review, and publishing</b>							
0695400	Franchot Creek at Fairheads, Neb.	75.8	61.5	81.1%	5541	1961-2011	Flow data from USACE
0644200	Republican River at Cambridge, Neb.	130	219.8	59.1%	4542	1960-2011	Flow data from USACE
0693000	Republican River at Guide Rock, Neb.					1961-2008	USGS/USACE

Other Annual Water Data Reports available at or through  
<http://pub.water.usgs.gov>  
<http://owr.water.usgs.gov>

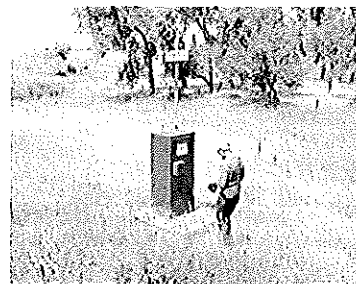
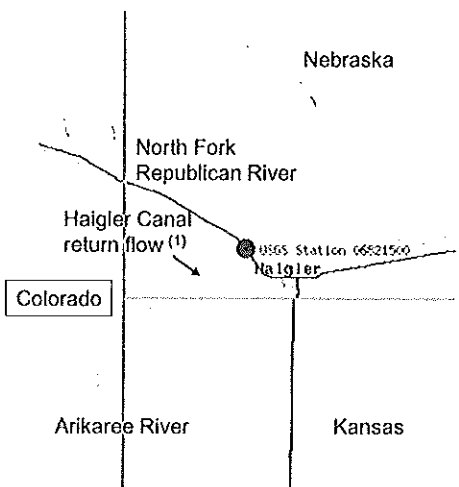


## Summary Charts – Compact Stations

- Published data for Water Year (WY) 2011
- Operated by the USGS Nebraska Water Science Center (NE WSC)
- Stations funded by the USGS National Streamflow Information Program (NSIP)

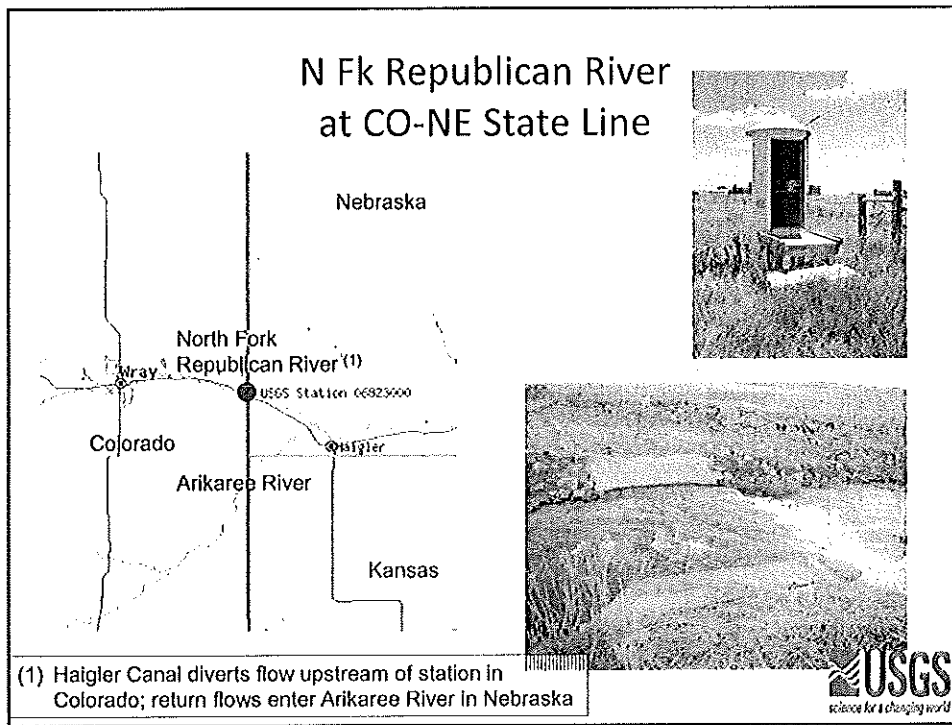
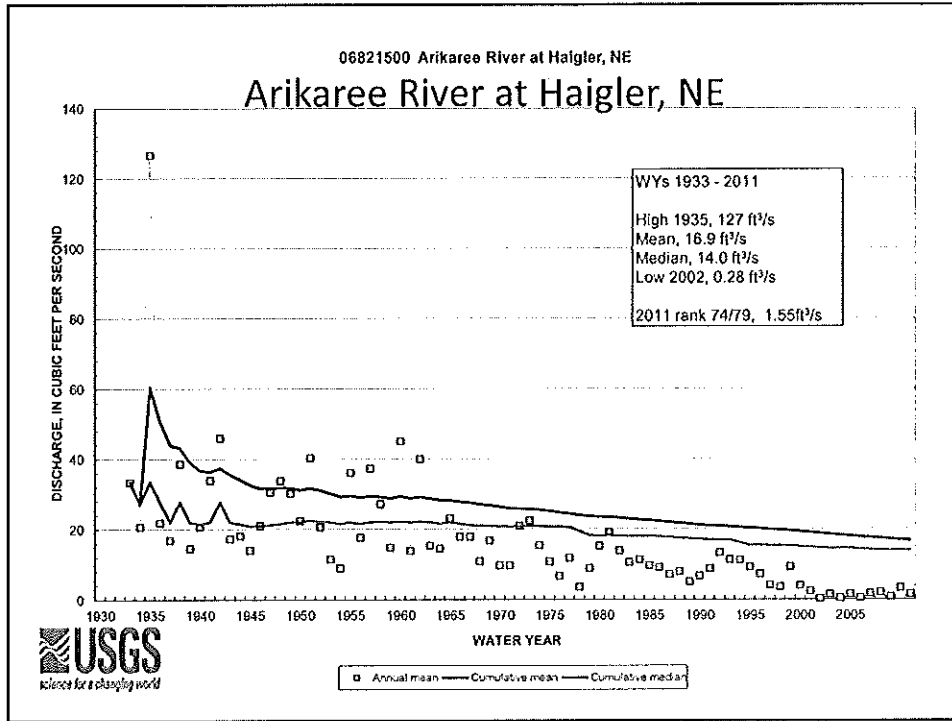


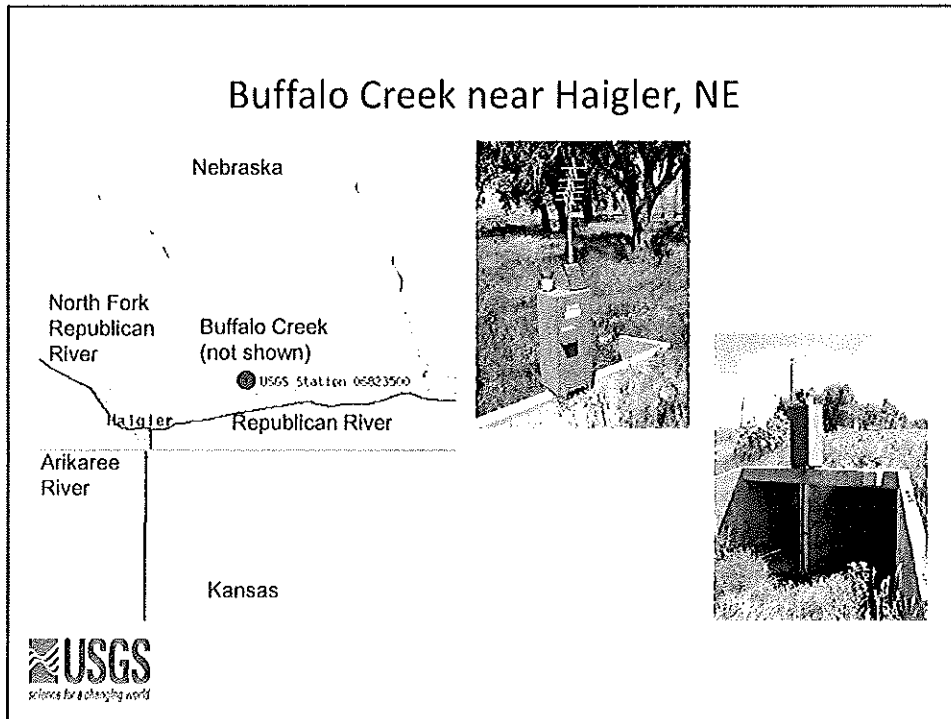
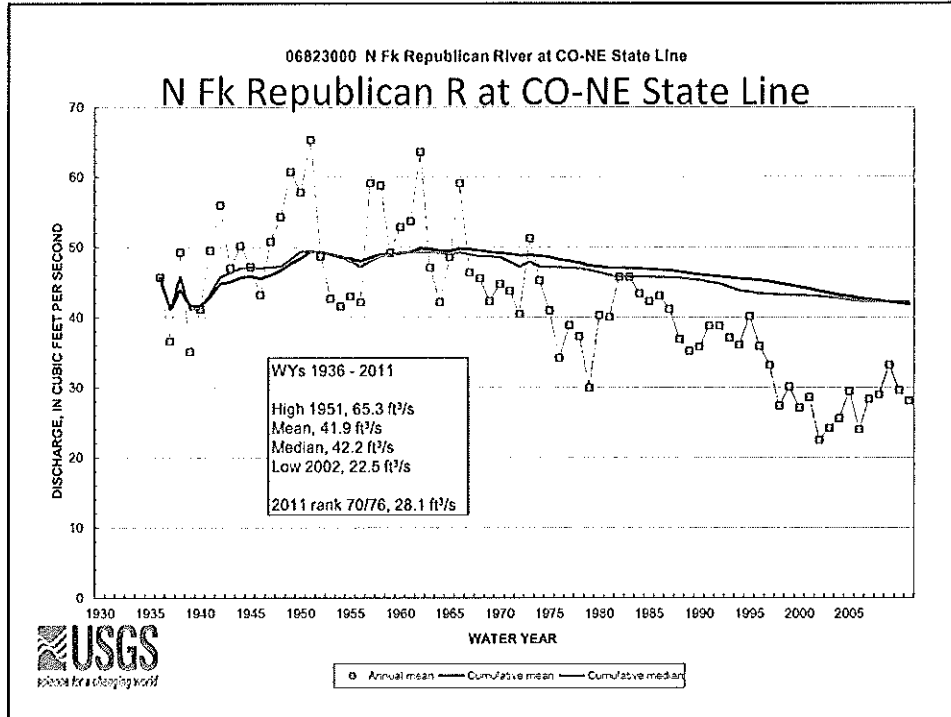
### Arikaree River at Haigler, NE

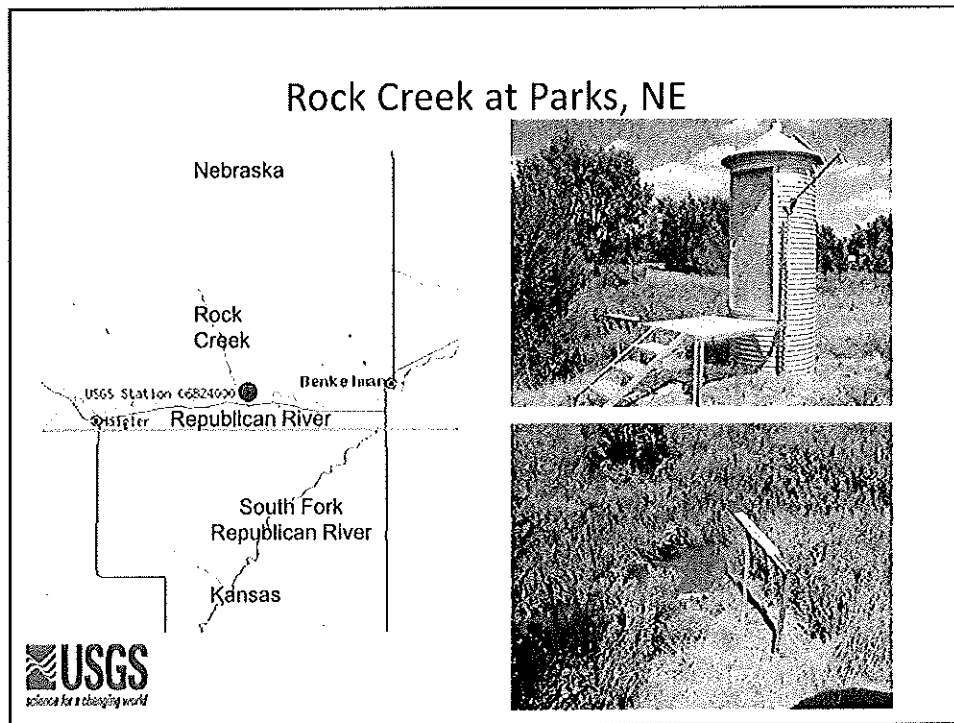
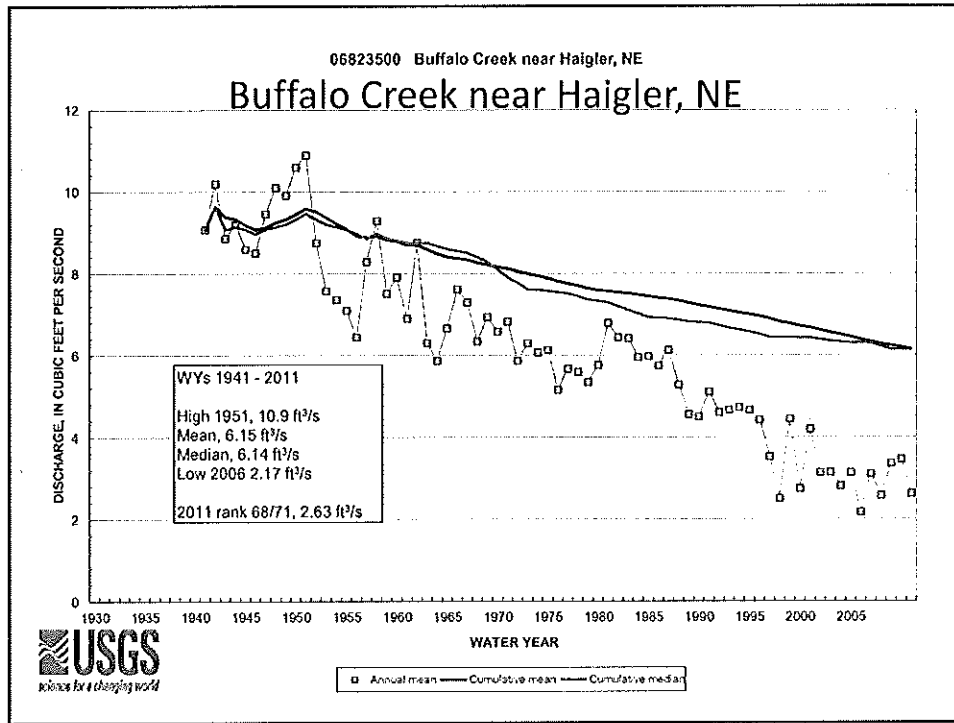


(1) Haigler Canal diverts from North Fork Republican River above CO-NE Stateline: return flows enter Arikaree River

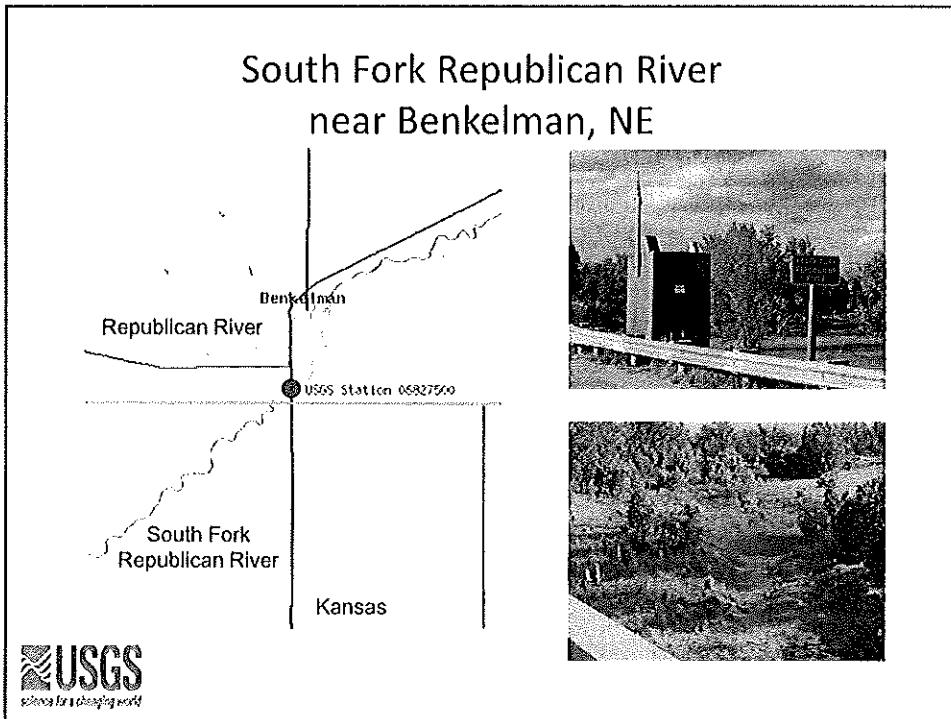
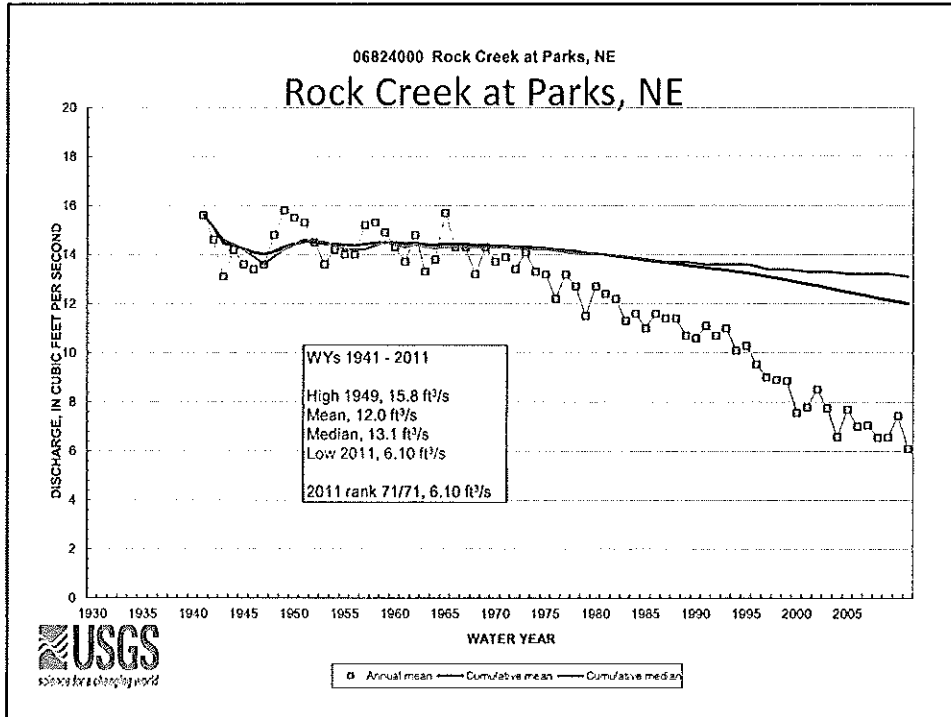


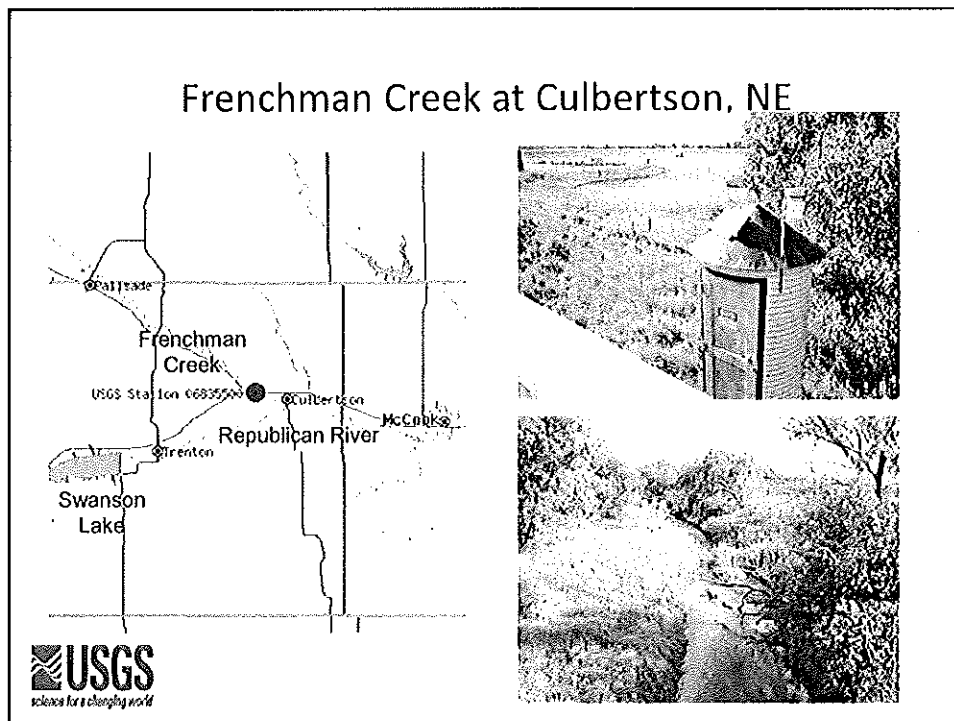
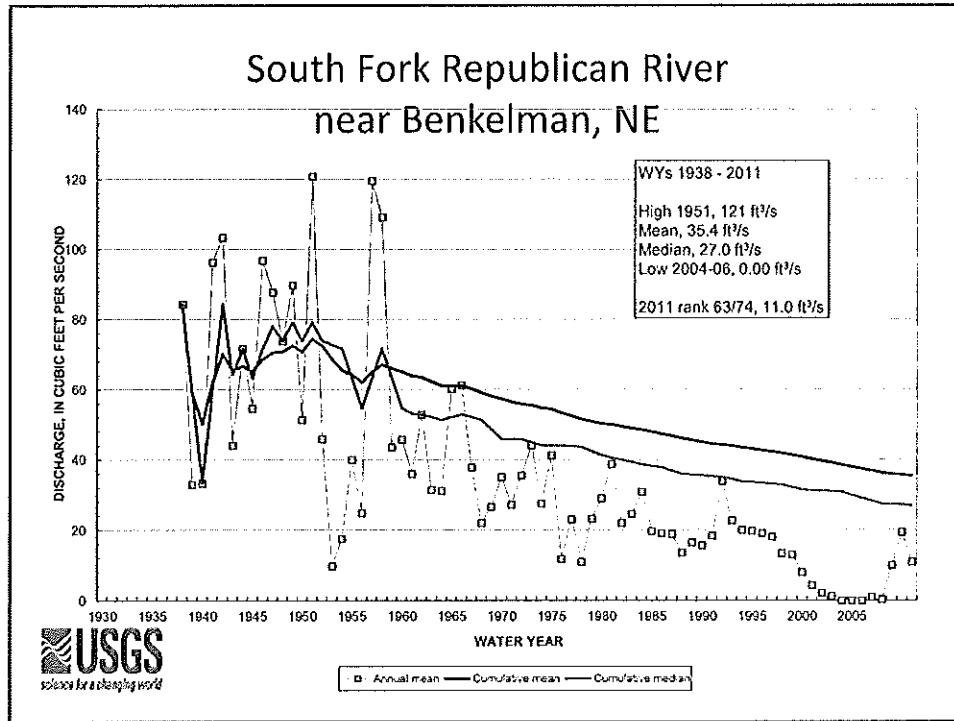


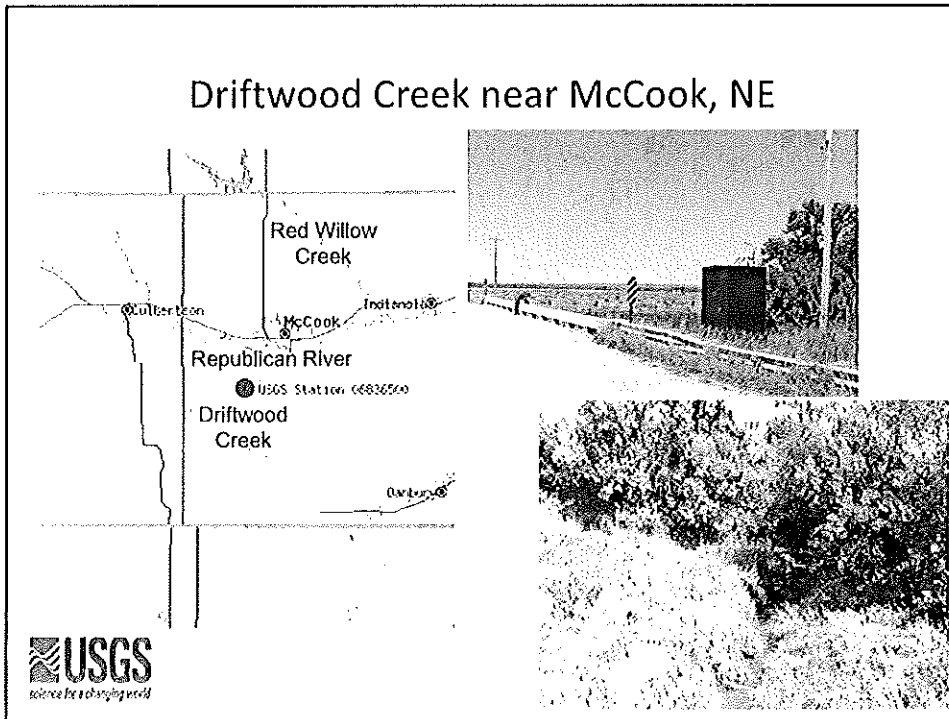
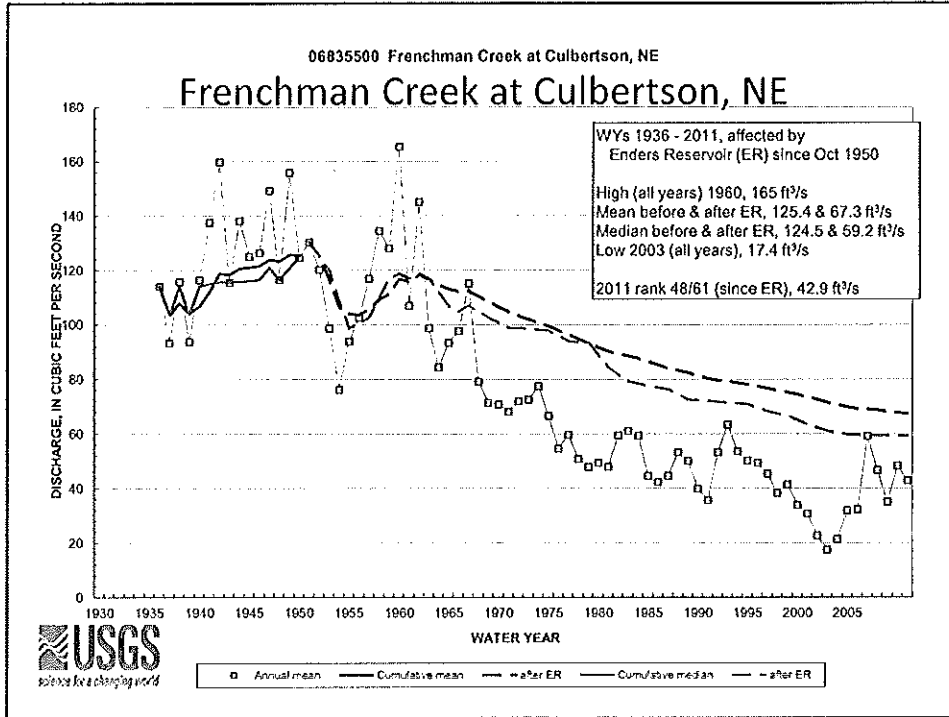


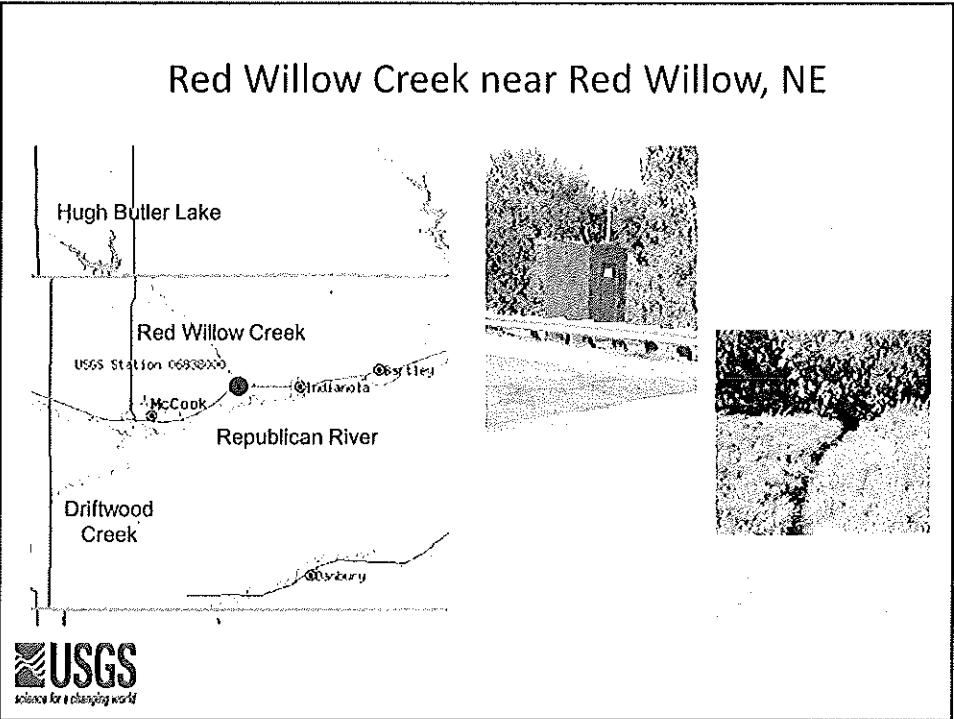
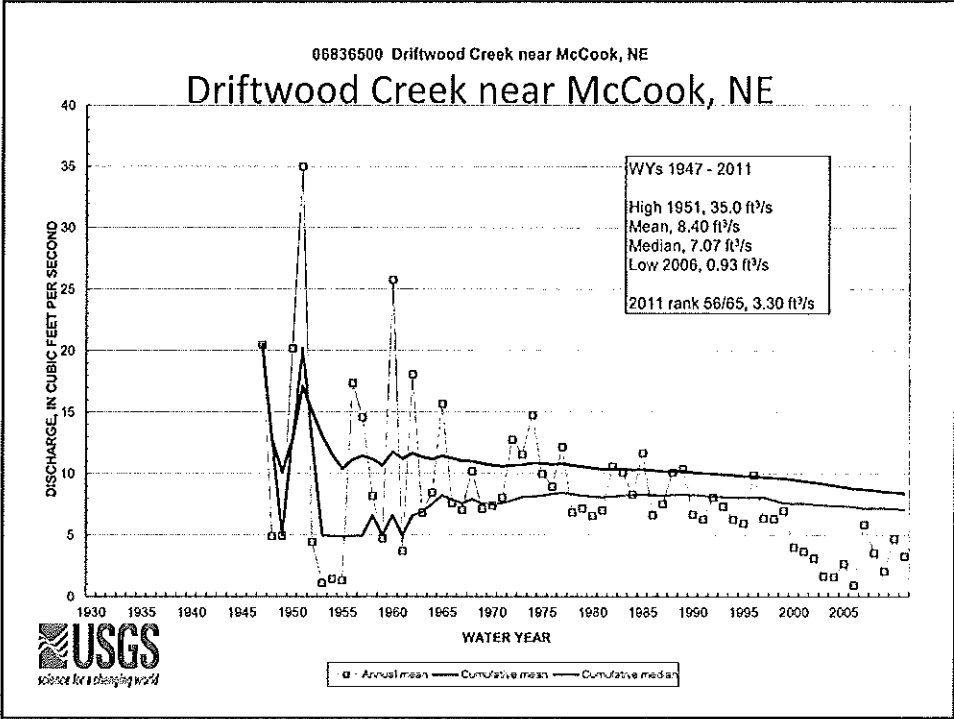


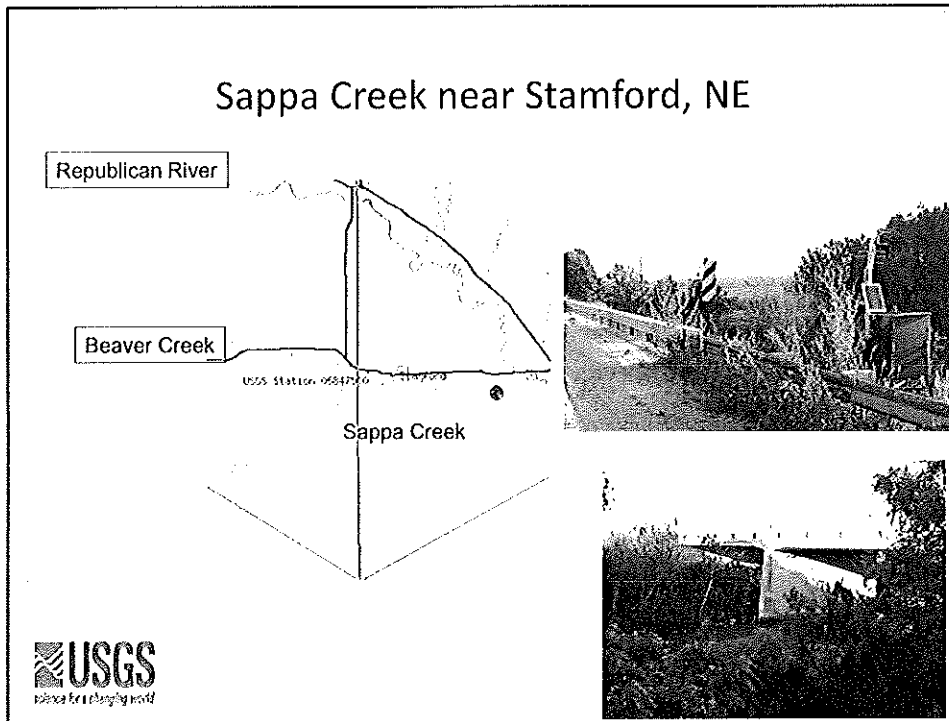
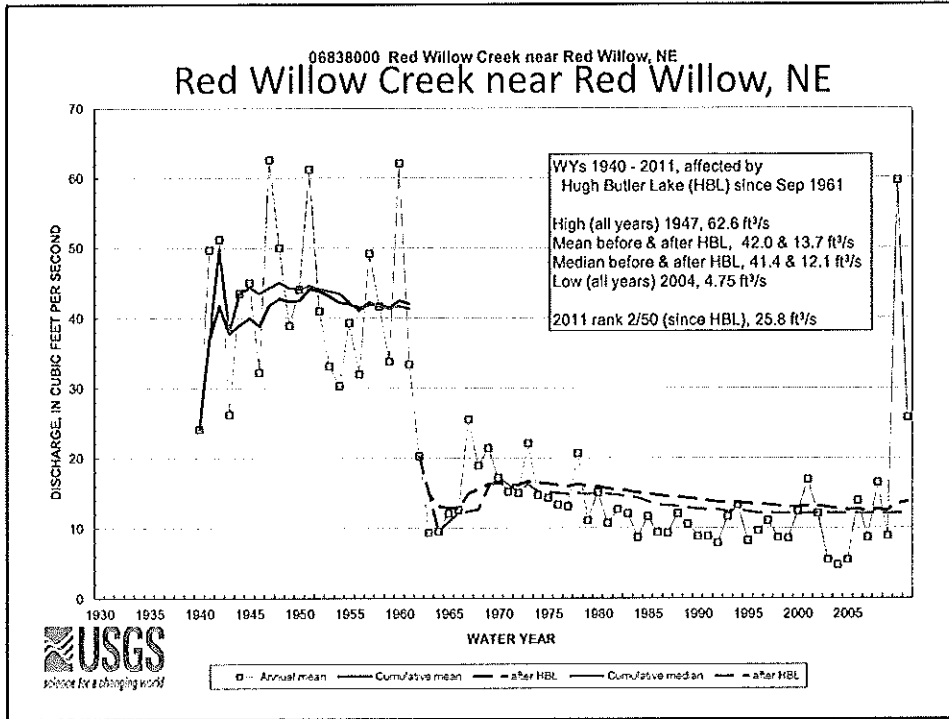


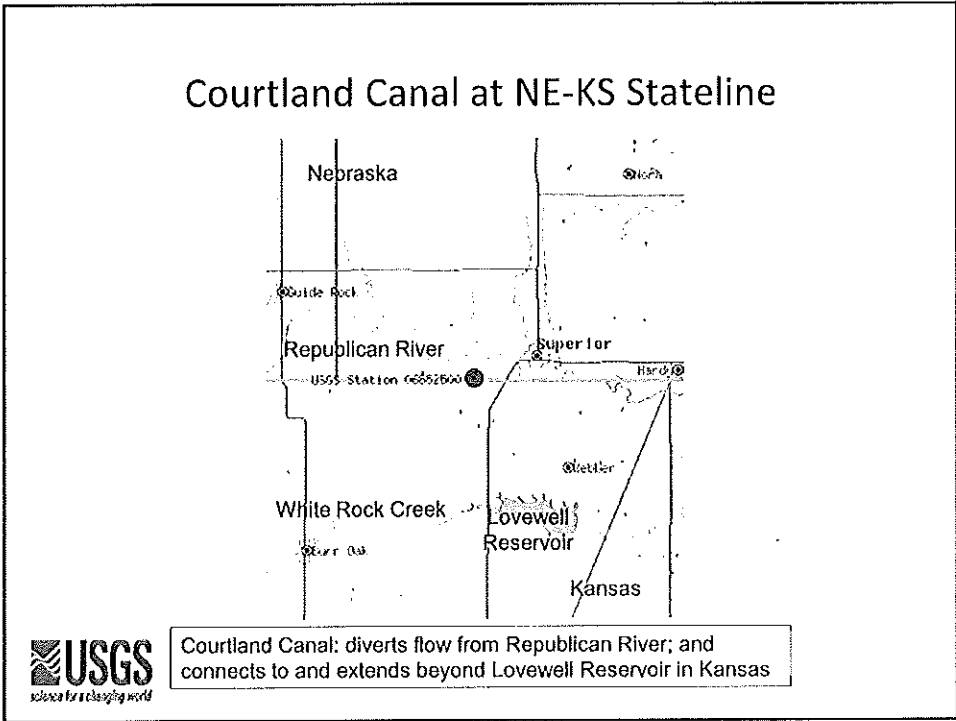
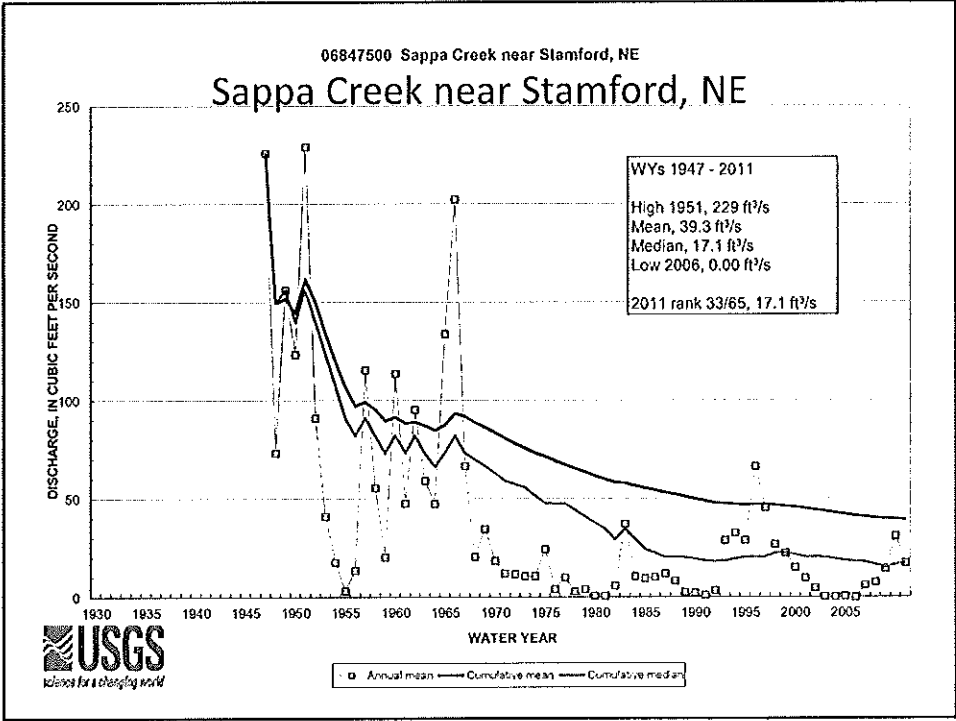


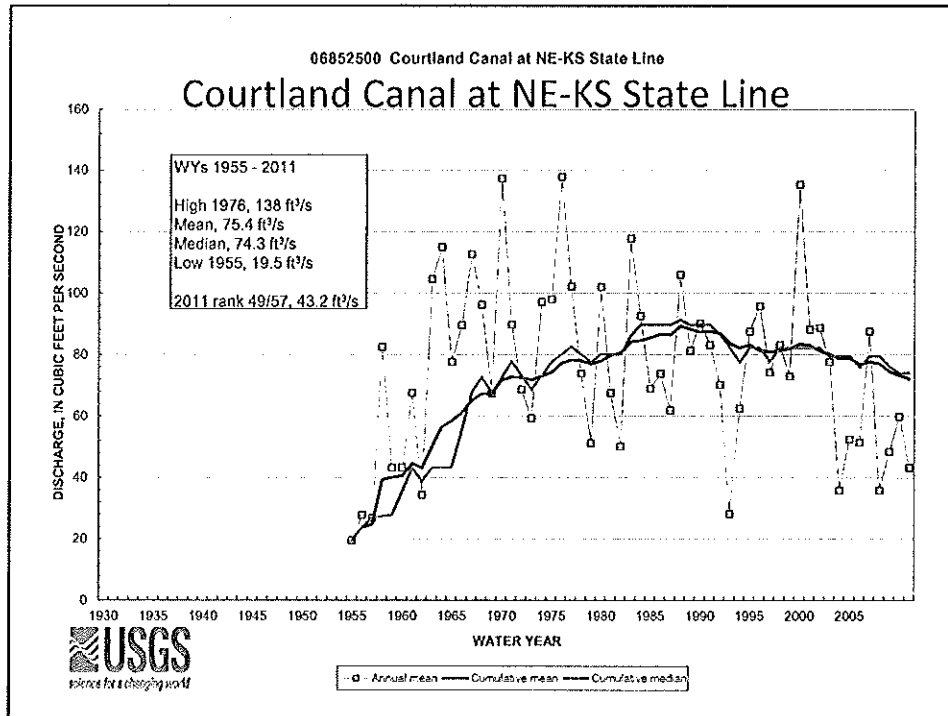








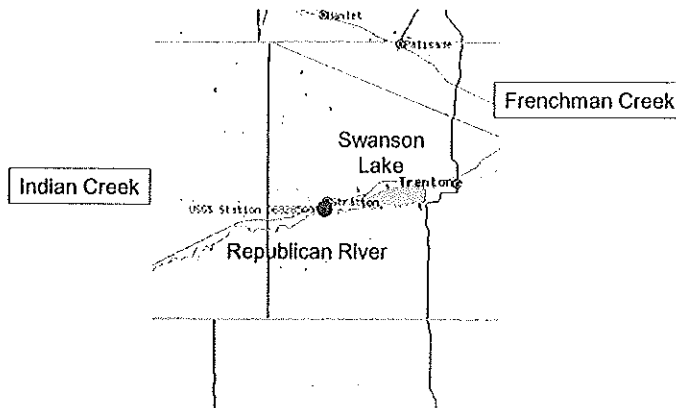




## Summary Charts – Other USGS Stations

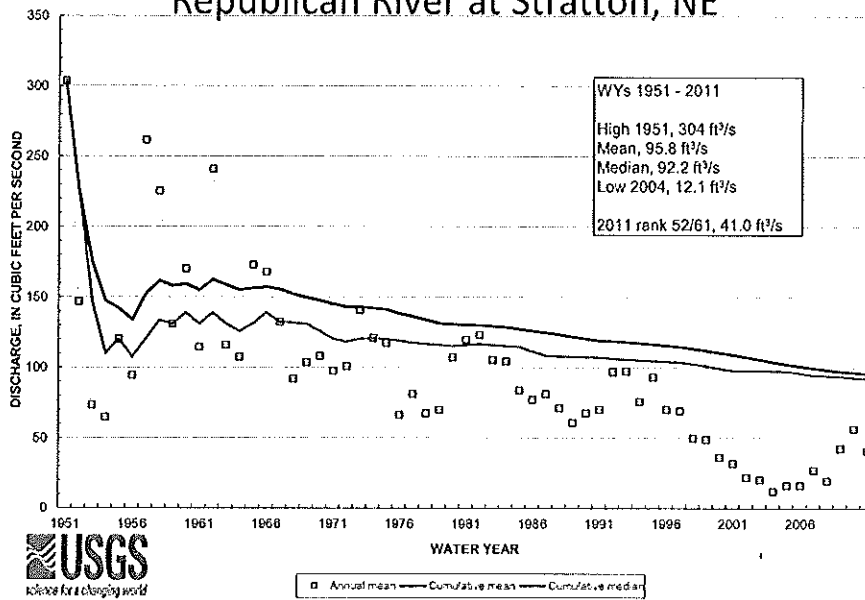
- Published data for Water Year 2011
- Operated by the USGS Nebraska Water Science Center
- Stations funded by:
  - other Federal agencies
  - State and local agencies with USGS match from the Cooperative Water Program

# Republican River at Stratton, NE



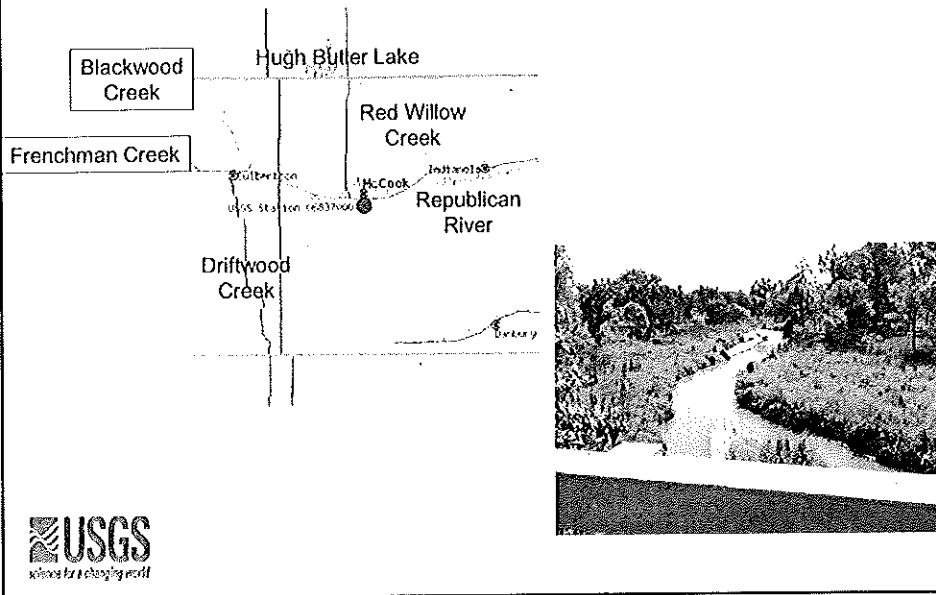
## 06828500 Republican River at Stratton, NE

### Republican River at Stratton, NE



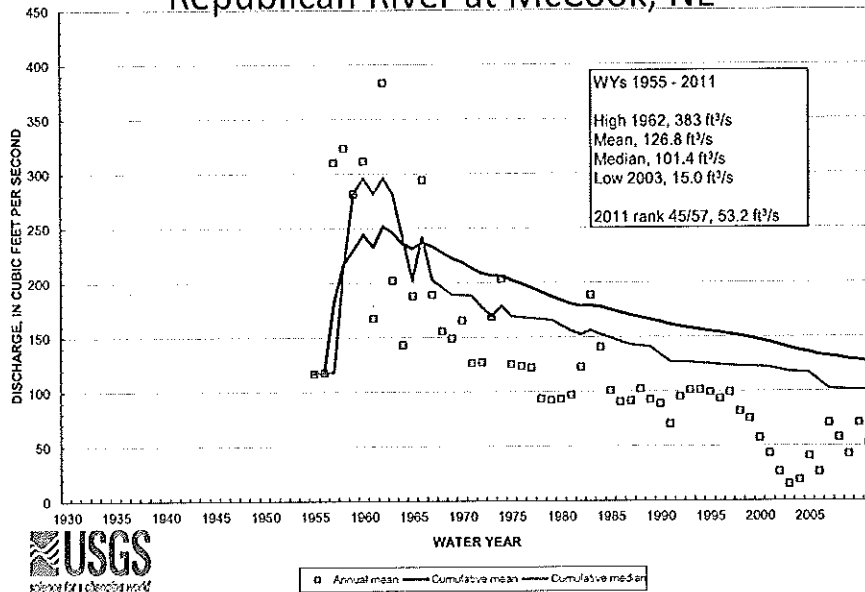


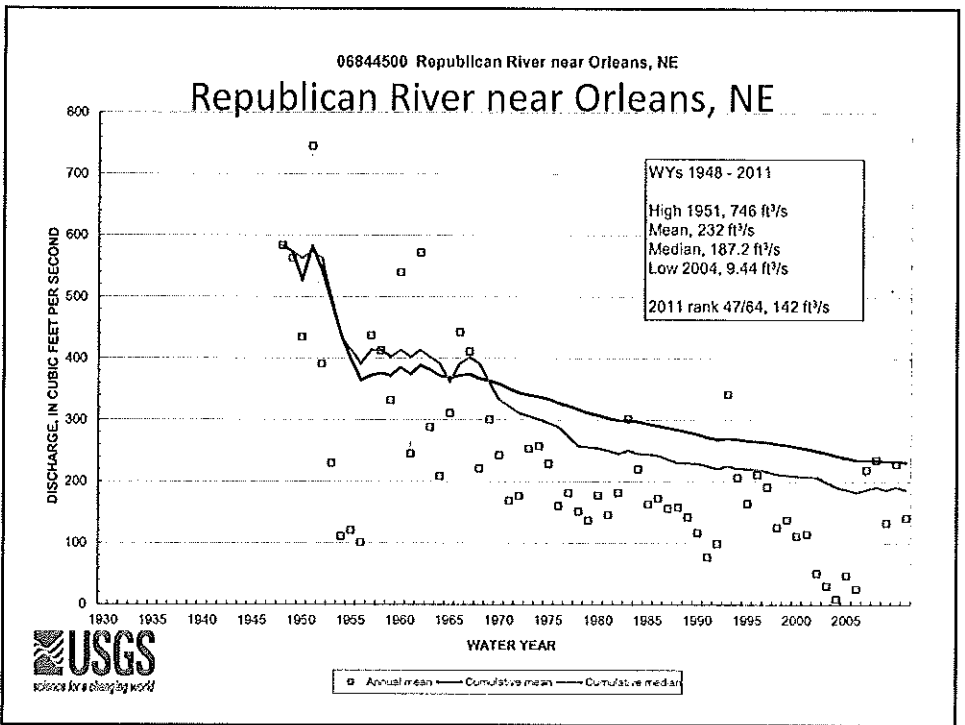
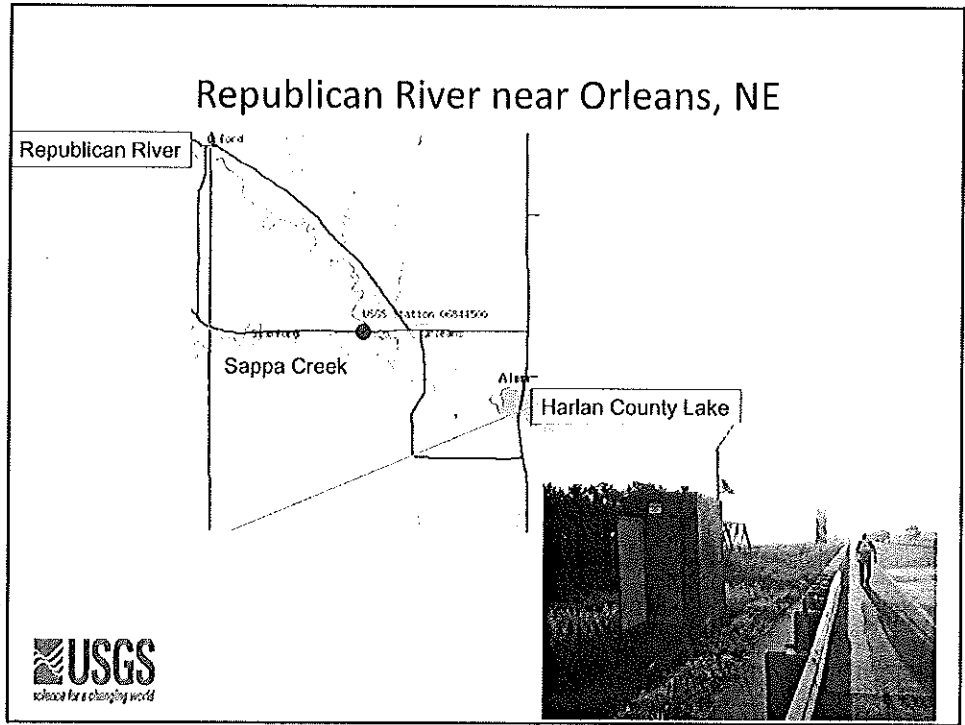
# Republican River at McCook, NE



06837000 Republican River at McCook, NE

# Republican River at McCook, NE





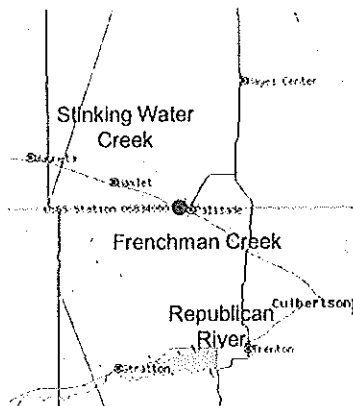
## Summary Charts – NDNR Stations

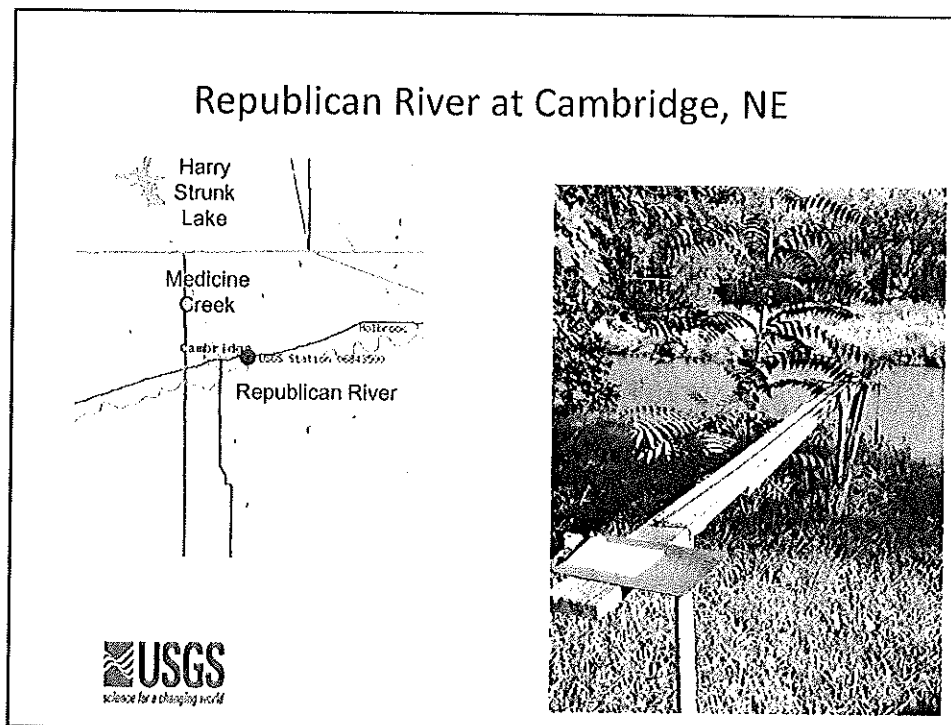
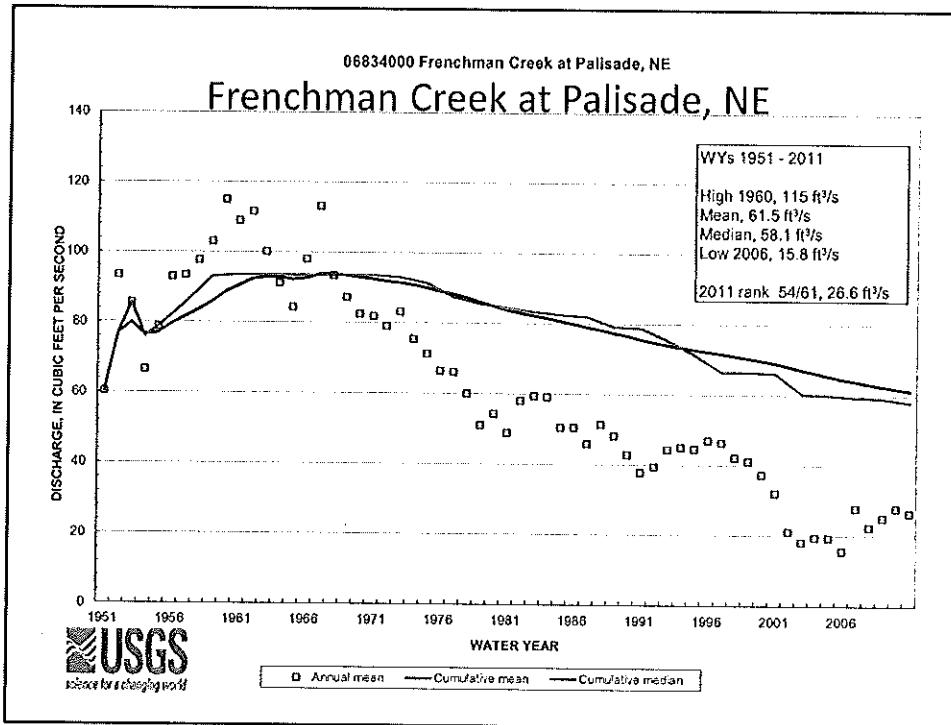
- Published data for Water Year 2011
- Operated by Nebraska Department of Natural Resources (NDNR)
- Stations funded by:
  - NDNR – Field operation
  - USGS and USACE – DCP support, Web display, data review, and publication by USGS

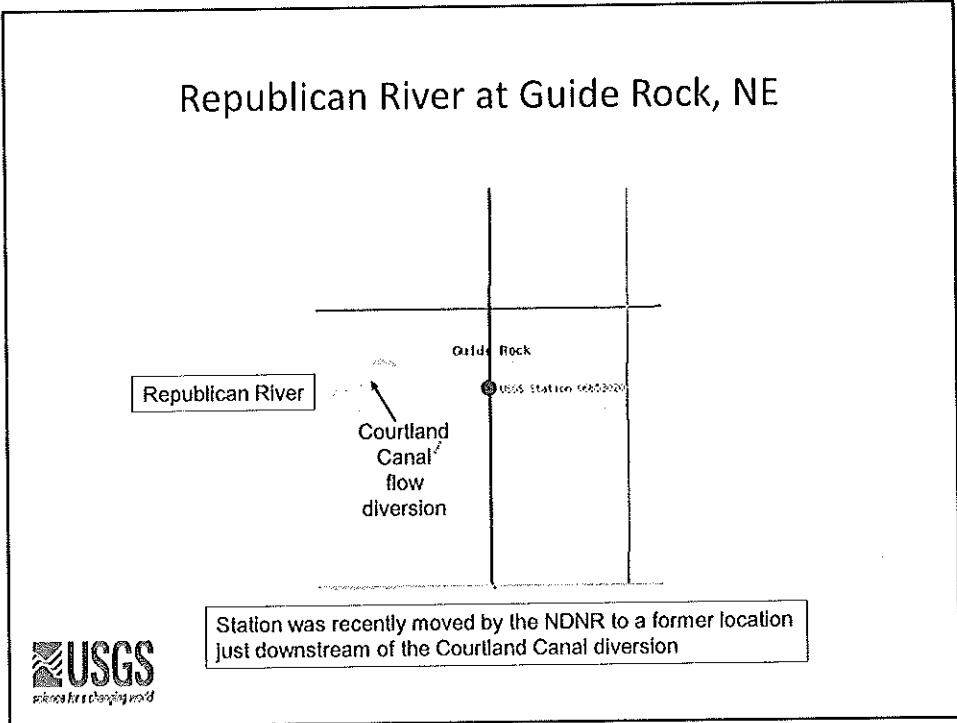
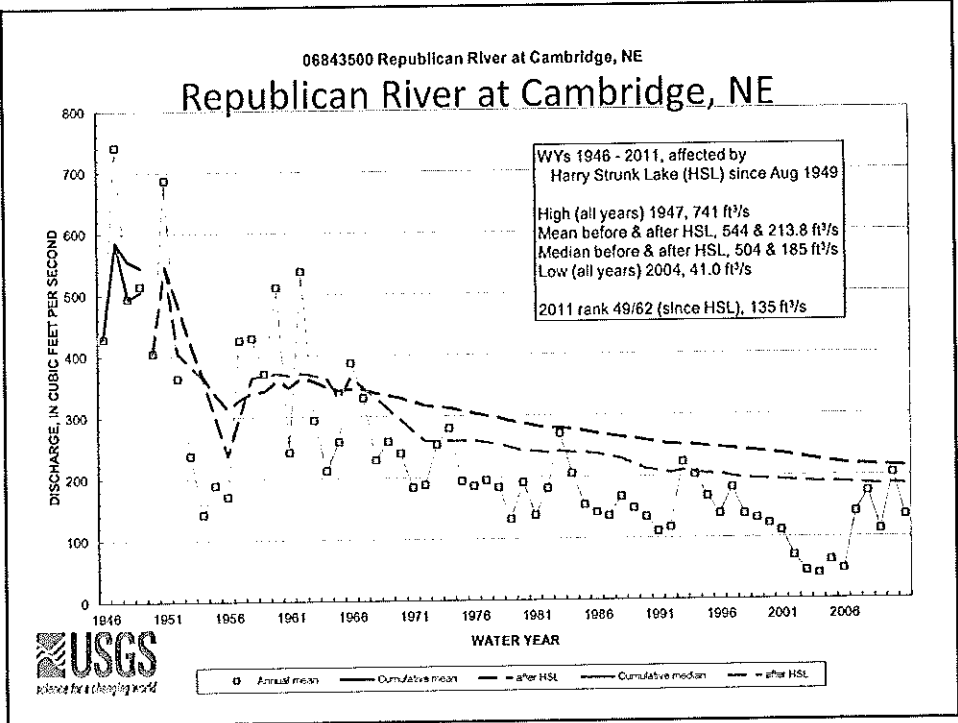


31

## Frenchman Creek at Palisade, NE







## CONTACT INFORMATION

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# WaterWatch

- Home
- State Drought Information
- 7-day Below Normal Streamflow
- 14-day Below Normal Streamflow
- 28-day Below Normal Streamflow
- Monthly Below Normal Streamflow
- Drought Hydrograph
- Drought Table
- Map Comparison
- Record Low Flow Map
- Toolkit
- Toolkit (internal)
- Additional Information

**Retrieve Summary of 7-day Flow Conditions**  
(Warning: These Data are Provisional and May be Prone to Error.)

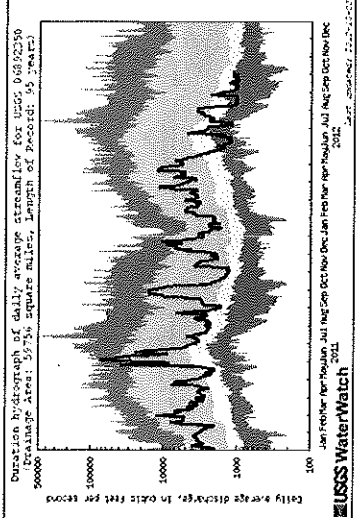
Geographic Area:  | Watershed Region:  | USGS Site:  | Port by:  | Date:  | Second's Second:  |  |

Summary of Watershed Average Flow Conditions  
(10/12/2012 - 2012/09/25)

USGS station number	USGS site name	Watershed area (mi <sup>2</sup> )	Watershed population	7-day average flow		7-day average flow		7-day average flow	7-day average flow	7-day average flow
				Flow (cfs)	Flow (cfs)	Flow (cfs)	Flow (cfs)			
04022000	Nebraska River at Corral	2270	0	2012-09-25	1.21	1	78	2.34	2.34	0
04022000	Nebraska River at Corral	2270	0	2012-09-25	2.07	1	21	3.97	3.97	0
04022000	Nebraska River at Corral	2270	0	2012-09-25	1.73	1	5	3.27	3.27	0
04022000	Nebraska River at Corral	2270	0	2012-09-25	1.43	1	3	3.87	3.87	0
04022000	Nebraska River at Corral	2270	0	2012-09-25	1.66	1	3	3.81	3.81	0
04022000	Nebraska River at Corral	2270	0	2012-09-25	0	1	1	3.81	3.81	0
04022000	Nebraska River at Corral	2270	0	2012-09-25	0	1	1	3.81	3.81	0

## USGS Streamflow Duration Hydrograph Builder

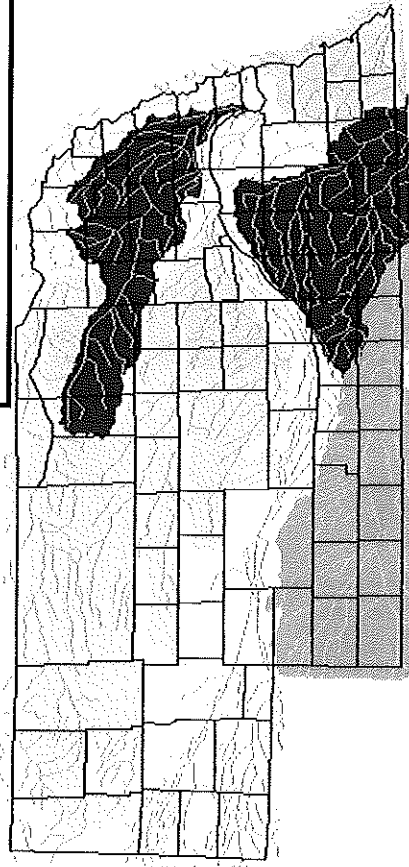
For some streams, flow statistics may have been computed from mixed regulated and unregulated flows; this can lead to inaccurate depictions of flow conditions.



Map of below normal 7-day average streamflow for the state of Nebraska to historical streamflow for the state of Nebraska

State

Tuesday, October 2, 2012



Click map to obtain more detailed drought information for the state

Explanation - Percentile classes		
Low	<=5	10-24
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought
		Below normal



# http://ne.water.usgs.gov/drought/



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### Nebraska Drought and Low-Flow Stream Watch

This map (from USGS's National Drought Watch Web site) shows the 7-day average streamflow conditions in hydrologic units. Thus, the map shows conditions adjusted for this time of the year. The colors represent 7-day average streamflow percentiles for the day of the year. USGS sites having at least 30 years of record are used. The data used are provisional and subject to change. Nebraska is also providing weekly [drought updates](#) with details about measurement and reconnaissance activities.

#### Nebraska DroughtWatch Maps

Average streamflow maps:

- Area map: [Below normal 7-day](#)
- Site map: [Below normal 7-day](#)
- Site map: [Below normal 14-day](#)
- Site map: [Below normal 28-day](#)

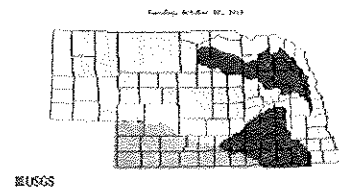
#### Drought Photo Gallery and Site Streamflow Information

- [Anikaree River at Högler \(06821500\)](#)
- [Big Blue River at Barneston \(06882000\)](#)
- [Big Blue River near Crete \(06881000\)](#)
- [Big Nemaha R. at Falls City \(06815000\)](#)
- [Driftwood Creek near McCook \(06836500\)](#)
- [Elkhorn River at Ewing \(06797500\)](#)
- [Elkhorn River at Norfolk \(06799000\)](#)
- [Elkhorn River at Pilger \(06799315\)](#)
- [Elkhorn River at Waterloo \(06800500\)](#)
- [Elkhorn River at West Point \(06799350\)](#)
- [Frenchman Creek at Culbertson \(06835500\)](#)
- [Frenchman Creek at Palisade \(06834000\)](#)
- [Haines Branch at Lincoln \(06803093\)](#)
- [Little Blue River near Deweese \(068883000\)](#)
- [Little Blue River nr Hollenberg, KS \(06884025\)](#)
- [Missouri River near Maskell \(06478526\)](#)
- [Platte River near Ashland \(06801000\)](#)
- [Platte River near Duncan \(06774000\)](#)
- [Platte River near Grand Island \(06770500\)](#)
- [Platte River at Louisville \(06805500\)](#)
- [Platte River at North Bend \(06796000\)](#)
- [Platte River near Leshara \(06796500\)](#)
- [Ponca Creek at Verdel \(06453600\)](#)
- [Red Willow Creek near Red Willow \(06838000\)](#)
- [Republican River at Cambridge \(06843500\)](#)
- [Republican River near Orleans \(06844500\)](#)
- [Sappa Creek near Stamford \(06847500\)](#)
- [South Omaha Creek at Walthill \(06600900\)](#)
- [West Fork Big Blue River near Dorchester \(06880800\)](#)

#### Time-Lapse Photography

- [Platte River at South Bend \(Iled Bridge NE\)](#)
- [Platte River at Hwy 64 Bridge](#)
- [Platte River State Park Tower Northwest](#)

Map of below normal 7-day average streamflow compared to historical streamflow for the day of year



Explanation - Percentile classes				
Low Extreme hydrologic drought	<=5 Severe hydrologic drought	6-9 Moderate hydrologic drought	10-24 Below normal	Above 25% of normal

[View a larger map.](#)

#### Publications

- [USGS Fact Sheet OFR93-642: Drought](#)
- [USGS Water Supply Paper WSP 2375: National water summary 1988-89: hydrologic events and floods and droughts](#)
  - [Nebraska drought chapter \(2 Mb PDF\)](#)
  - [Climate and droughts](#)
  - [Evapotranspiration and droughts](#)
  - [Paleohydrology and its value in analyzing floods and droughts](#)
  - [Management of water resources for drought conditions](#)

#### Other Links

- [USGS Groundwater Watch](#)
- [Project Alerts: Drought and Flood](#)
- [More USGS News on Drought and Flood Alerts across the Nation](#)
- [National Integrated Drought Information System \(NIDIS\)](#)
- [National Drought Mitigation Center](#)
- [Natural Resources Conservation Service Drought Information](#)
- [UNL Drought Resources](#)

#### Definitions of Drought

There are different types of droughts, for example meteorological droughts, agricultural droughts, and hydrologic droughts. A discussion of the different types of droughts can be found at the National Drought Mitigation Center [Types of Drought](#) page.

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U.S. Department of the Interior | U.S. Geological Survey

URL: <http://ne.water.usgs.gov/drought/index.html>

Page Contact Information: [GS-W-NE Webmaster](#)

Page Last Modified: Friday, 28-Sep-2012 07:29:42 EDT

USA.gov



Republican River Basin streamflow-gaging stations with records published by USGS for water year (WY) 2011

[DCP, data-collection platform; NDNR, Nebraska Department of Natural Resources; USACE, U.S. Army Corps of Engineers; USBR, U.S. Bureau of Reclamation; USGS, U.S. Geological Survey]

Station number	Station name	Mean discharge (ft <sup>3</sup> /s) WY 2011	Long-term	WY 2011 as percentage of long-term mean	WY 2011 as rank/years (1 highest)	WYs used for long-term mean	Remarks
06821500	Arikaree River at Haigler, Nebr	1.55	16.9	9.2%	74/79	1933 - 2011	
North Fork Republican River at Colo-Nebr							
06823000	State Line	28.1	41.9	67.1%	70/76	1935 - 2011	
06823500	Buffalo Creek near Haigler, Nebr	2.63	6.15	42.8%	68/71	1941 - 2011	
06824000	Rock Creek at Parks, Nebr	6.10	12	50.8%	71/71	1941 - 2011	
South Fork Republican River near							
06827500	Bankelman, Nebr	11.00	35.4	31.1%	63/74	1938 - 2011	
06835500	Frenchman Creek at Culbertson, Nebr	42.9	67.3	63.7%	48/61	1951 - 2011	Since Enders Reservoir
06836500	Driftwood Creek near McCook, Nebr	3.3	8.4	39.3%	56/65	1946 - 2011	
06838000	Red Willow Creek near Red Willow, Nebr	25.8	13.7	188.3%	2/50	1962 - 2011	Since Hugh Butler Lake
Sappa Creek near Stamford, Nebr (USACE funds DCP)							
06847500	Courtland Canal at Nebr-Kans State Line	17.10	39.3	43.5%	33/65	1946 - 2011	
06852500	(USBR DCP)	43.2	75.4	57.3%	49/57	1955 - 2011	

USGS stations supported by USGS and/or other Federal or State agencies

06828500	Republican River at Stratton, Nebr	41	95.8	42.8%	52/61	1951 - 2011	Funded by USACE and NSIP
06837000	Republican River at McCook, Nebr	53.2	126.8	42.0%	50/57	1955 - 2011	Funded by USBR, NDNR, and NSIP
06844500	Republican River near Orleans, Nebr	142	232	61.2%	47/64	1948 - 2011	Funded by USACE

NDNR stations with USGS/USACE support for DCP, Web display, review, and publishing

06834000	Frenchman Creek at Palisade, Nebr	26.6	61.5	43.3%	54/61	1951 - 2011	
06843500	Republican River at Cambridge, Nebr	135	213.8	63.1%	49/62	1950 - 2011	Since Harry Strunk Lake
06853020	Republican River at Guide Rock, Nebr					1951 - 2008	DISCONTINUED

Online Annual Water Data Reports available at or through  
<http://wdr.water.usgs.gov>  
<http://ne.water.usgs.gov>



**Exhibit E**

**Engineering**

**Committee Report**

## **Engineering Committee Report**

### **Republican River Compact Administration**

October 16, 2012

#### **COMMITTEE ASSIGNMENTS AND WORK ACTIVITIES RELATED TO THESE ASSIGNMENTS**

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. 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.
  - a. The status of this assignment is that Kansas provided their initial thoughts on the user's manual to Colorado and Nebraska for review. No progress was made on this assignment. The assignment was tabled by the Committee this year, but should be continued for next year.
2. Exchange by April 15, 2012 the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document. By July 15, 2012 the states will exchange any updates to these data.
  - a. Kansas and Nebraska posted their model data sets prior to April 15, 2012. Colorado provided preliminary pumping data on April 26 to Willem Schreüder of Principia Mathematica, who ran a preliminary version of the RRCA groundwater model and posted it April 27, 2012 on the RRCA website [republicanrivercompact.org](http://republicanrivercompact.org).
  - b. The States exchanged their available final data by September 20, 2012. Willem Schreüder of Principia Mathematica completed a run based on this data on October 4, 2012.
  - c. The committee collected 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 2011.
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.
  - a. The status of this assignment is that Kansas provided literature regarding irrigation efficiency to Colorado and Nebraska for their review at the 2011 annual meeting. Aside from that initial review and comments by Colorado and Nebraska, no additional progress has been made on this assignment. Kansas has indicated its intent to propose a study to resolve the problems of differing

- groundwater irrigation recharge methods. The assignment should be continued for next year.
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 2012. 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.
    - a. Each state separately contracted with Principia Mathematica for calendar year 2012.
  5. Continue development of a five-year accounting spreadsheet/database for adoption at the 2012 annual meeting or earlier.
    - a. Nebraska offered a spreadsheet for consideration. Kansas reviewed that document and offered suggestions in a new spreadsheet for the states to discuss. No progress was made on this assignment. The assignment was tabled by the Committee this year, but should be continued for next year.
  6. Continue to review Colorado's augmentation proposal, as appropriate.
    - a. This assignment was not discussed by the Engineering Committee because the topic has been under discussion by a separate negotiating group.
  7. Continue efforts to finalize accounting for 2006-2010.
    - a. The issues preventing the states from agreeing on the accounting are pending in the current Supreme Court case.
  8. Continue discussion of issues preventing agreement on final accounting for 2006-2010.
    - a. The issues preventing the states from agreeing on the accounting are pending in the current Supreme Court case.
  9. Develop a procedure to account for inflows to the stream segment between Guide Rock diversion dam and the relocated stream flow gage.
    - a. Nebraska investigated several methods of measurement and provided the alternatives and approximate cost to the other states. With input from the Commissioners at the work session, a formal proposal can be prepared. The assignment should continue for next year.
  10. Discuss the application of the revised Bonny Reservoir area-capacity tables to current and past accounting data.
    - a. Kansas agrees to adopt the revised Bonny Reservoir area-capacity tables and apply it to 2011 data and into the future.
    - b. Colorado wants the area-capacity tables retroactively applied for 2007 to 2010.
    - c. The committee would appreciate direction from the Commissioners.
  11. Discuss any accounting changes that may be needed for surface water diversions for the purpose of recharging groundwater.

- a. The committee discussed the topic on several occasions, but no formal action was taken on the assignment at this time. The assignment should be continued.
12. Discuss developing a framework for an application and approval process for future augmentation plans.
  - a. Kansas provided the committee with its initial thoughts on the type of information that should be provided with a plan and a list of questions for discussion in an email (September 27, 2012). The committee would appreciate discussion by the Commissioners. The assignment should be continued.
13. Apply the procedure described in Exhibit A of the 2011 Engineering Committee report to fill in missing precipitation data in the groundwater model for compact years 2008, 2009 and 2010 and for subsequent years.
  - a. This was completed on Sept 7, 2011 by Willem Schreüder of Principia Mathematica.
  - b. An additional issue surfaced with the 2011 data set such that a refined proposal is required for approval by the Administration. This task was not completed at the time of this annual meeting and should be included in a future Engineering Committee report.
14. Discuss archiving the data and materials from the Conservation Committee study.
  - a. The Committee discussed options for archiving the data and materials from the Conservation Committee study. Several locations (websites) have been identified as possible sites for archiving the data and materials. A final recommendation will be made to the Administration at the annual meeting.
15. Amend the RRCA Rules and Regulations, as discussed on page 76 of the 2010 transcript.
  - a. The draft Rules and Regulations were discussed at the annual meeting and a final draft will be prepared for approval at a future RRCA meeting.

### **RECOMMENDED ASSIGNMENTS FOR THE COMING YEAR**

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

1. Exchange by April 15, 2013 the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document. By July 15, 2013 the states will exchange any updates to these data.
2. 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.
3. Retain Principia Mathematica to perform on-going maintenance of the ground water model and periodic updates requested by the Engineering Committee for calendar year 2012. 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.

- a. Kansas Proposal - As the RRCA chair, Kansas will coordinate the work of the committee to collect all needed data (April 15<sup>th</sup>) and based on this, will develop a preliminary model run and necessary updates based on improved data and post the model input data and output results for review by the other states. The state will also archive the resulting accounting.
4. Continue efforts to finalize accounting for 2006-2011.
5. Continue discussion of issues preventing agreement on final accounting for 2006-2011.
6. Develop a procedure to account for inflows to the stream segment between Guide Rock diversion dam and the relocated stream flow gage.
7. Discuss any accounting changes that may be needed for surface water diversions for the purpose of recharging groundwater.
8. Discuss developing a framework for an application and approval process for future augmentation plans.
9. Finalize the procedure described in Exhibit A of this report to apply to 2011 and subsequent years with missing precipitation data.
10. Finalize work on a user's manual for the RRCA Accounting Procedures and provide a recommendation to the Administration for adoption.
11. Continue development of a five-year accounting spreadsheet/database for adoption.
12. Discuss the application of the revised Bonny Reservoir area-capacity tables to past accounting data.

## **ATTACHMENTS**

Exhibit A - Precipitation procedure

The Engineering Committee Report and the exchanged data will be posted on the web at [www.republicanrivercompact.org](http://www.republicanrivercompact.org).

**SIGNED BY**

---

Scott E. Ross  
Chair, Engineering Committee Member for Kansas

---

Ivan Franco  
Engineering Committee Member for Colorado

---

James Schneider  
Engineering Committee Member for Nebraska



**Exhibit F**  
**Conservation**  
**Committee**  
**Fact Sheet**

# Determining the Effects of Small Reservoirs and Terracing on Water Supplies of the Republican River Basin

*New understanding of how these conservation practices impact water supplies*

## Introduction

The Republican River Compact litigation between Colorado, Kansas and Nebraska began during May 1998 and ended when the parties agreed to a settlement. The United States Supreme Court approved the settlement in May 2003. The settlement is generally known as the Final Settlement Stipulation (FSS). The FSS required the States to form a Conservation Committee to develop a study plan to determine the quantitative effects of Non-Federal Reservoirs and land terracing practices on the water supplies in the Republican River Basin above Hardy, Nebraska.



Operating Reservoir, August 2005.

Non-Federal Reservoirs for purposes of the FSS and this study are defined as those reservoirs with a storage capacity of 15 acre-feet or more. These small reservoirs or stock ponds catch and store water for use by livestock and wildlife and to prevent erosion. Land terraces control

runoff to prevent erosion and allow some additional crop production by making more water available to the crops. These conservation projects directly impact surface water supplies, but they can also affect ground water recharge and have a resulting impact on surface flows. Construction of small reservoirs and land terraces has had a significant but unmeasured impact on river basin water supplies.

## The Study Area

The study area consists of the portion of the Republican River Basin above the streamflow measuring gage near Hardy, Nebraska. The area is 22,401 square miles. There are 14,901 square miles of contributing drainage area. The reservoirs and land terraces studied fall within this area and within the three states as listed in Table 1.

**Table 1.-Non-Federal Reservoirs and Terraces in the Study Area**

	Colorado	Kansas	Nebraska	Total
Reservoirs Number	6	148	562	716
Terraced land Acres	290,000	923,000	919,000	2,130,000

The amount of terraced land is approximately 22 percent of the contributing drainage area of the basin.

## Field Investigation

Water levels in 32 reservoirs were monitored for up to five years during the study; one of these reservoirs was studied in detail to understand the water balance and develop methods to model seepage from the reservoir. Two other reservoirs were used to verify what was learned about the water balance and modeling of seepage. Detailed data were collected from five terrace fields for

up to five years. The data included precipitation, outflows from terrace channels, temperatures, and soil moisture changes, along with other information. The storage condition and type of terrace was determined through a survey of 167 terraced fields, a representative sample of terraces in the basin. The data was used to understand how these conservation practices changed the water balance.

## Databases

Databases were developed for use in simulating the hydrologic impact of small reservoirs and terraces. Data was needed for the location of non-federal reservoirs and terraces, weather, soils, crops, irrigated land amount and location, catchment area of the reservoirs, the delineation of the watershed boundaries, and the location of waterways.

## Water Balance Modeling and Simulation of Impacts



Operating Terraces in the Basin, May 2007.

Based on this, a water balance model was developed that could be applied in the basin. The water balance model was operated to simulate the operations of typical non-federal reservoirs and land terraces on a daily basis for 1950-2008, a 59 year period.

The water balance model was operated to simulate the water balance for typical reservoirs and five types of typical terraces for each of the three major soil types identified for the basin at each of the 32 independent meteorological stations across the basin.

The data and the basin model suggest that these water conservation practices:

- increase net evapotranspiration by an average of 36,000 acre-feet annually,
- decrease streamflow by an average of 63,000 acre-feet annually,
- increase recharge by an average of 88,000 acre-feet annually, and
- decrease stream transmission loss by an average of 61,000 acre-feet annually.

These are average annual amounts over a 59-year period.

## For More Information

The final report, *Study on the Impacts of Non-Federal Reservoirs and Land Terracing on Basin Water Supplies, Final Report from the Republican River Compact Settlement Conservation Committee for the Republican River Compact Administration, October 2012*, can be found at the following web sites:

Colorado - <http://water.state.co.us/SurfaceWater/Compacts/RepublicanRiver/>

Kansas - [http://www.ksda.gov/interstate\\_water\\_issues](http://www.ksda.gov/interstate_water_issues)

Nebraska - <http://dnr.ne.gov/legal/kansasvs.html>

Bureau of Reclamation - <http://www.usbr.gov/gp/nkaor>

# **Exhibit G**

## **Nebraska Resolution: Alternative WSY Administration**

**RESOLUTION OF THE REPUBLICAN RIVER COMPACT ADMINISTRATION**  
**NEBRASKA'S ALTERNATIVE WATER-SHORT YEAR ADMINISTRATION PLAN**

**Whereas**, the States of Kansas, Nebraska and Colorado entered into a Final Settlement Stipulation (FSS) as of December 15, 2002, to resolve pending litigation in the United States Supreme Court regarding the Republican River Compact (Compact) in *Kansas v. Nebraska and Colorado*, No 126 Original;

**Whereas**, the FSS was approved by the United States Supreme Court on May 19, 2003;

**Whereas**, by letter dated July 30, 2012, the State of Nebraska submitted to the State of Kansas and the State of Colorado a copy of the "State of Nebraska's Plan for Reduction of Computed Beneficial Consumptive Uses under Alternative Water-Short Year Administration" (WSYA Plan);

**Whereas**, Nebraska has previously provided the State of Kansas and the State of Colorado RRCA Groundwater Modeling results indicating expected CBCU reductions resulting from Nebraska's actions during Compact Call years.

**Whereas**, Nebraska's WSYA Plan has been properly presented and submitted to the Republican River Compact Administration pursuant to Appendix M of the FSS.

**Whereas**, on September 14, 2012, the State of Nebraska provided the State of Kansas and the State of Colorado notice that if its WSYA Plan were not approved by the RRCA that Nebraska may pursue "fast track" resolution of the issue;

**Whereas**, on October 3, 2012, the State of Nebraska was provided notice by the United States Bureau of Reclamation that the potential for Water-Short Year Administration exists in 2013;

**Whereas**, no methodology exists in the RRCA Accounting Procedures and Reporting Requirements to determine necessary reductions in Computed Beneficial Consumptive Use (CBCU) for the upcoming year (defined as the current year in Table 5D of the RRCA Accounting Procedures and Reporting Requirements) prior to August 1 of the current year (defined as year = -1 in Table 5D of the RRCA Accounting Procedures and Reporting Requirements);

**Whereas**, Nebraska has developed a methodology to determine the necessary reductions in CBCU by December 31<sup>st</sup> for the upcoming year (provided with Nebraska's WSYA Plan); following the determination of the necessary reductions Nebraska will then determine the actions from those indicated within the WSYA Plan that it will utilize to produce such reductions; and these actions and their expected reductions in CBCU will be provided to the RRCA prior to April 1 of the year in which the WSYA Plan is implemented;

**Whereas**, the States agree that the expected reductions in CBCU implemented through Nebraska's WSYA Plan shall be evaluated by the Republican River Compact Administration

(RRCA) using methods consistent with the RRCA Accounting Procedures and the RRCA Groundwater Model;

**Whereas**, the States agree that Nebraska’s proposed WSYA Plan conforms to the requirements set forth in Appendix M of the FSS and that the RRCA should adopt Nebraska’s proposed WSYA Plan; and

**Now, therefore**, it is hereby resolved that the RRCA approves and adopts the “State of Nebraska’s Plan for Reduction of Computed Beneficial Consumptive Uses under Alternative Water-Short Year Administration”

Approved by the Republican River Compact Administration this 16<sup>th</sup> day of October 2012.

\_\_\_\_\_  
David Barfield, P.E.  
Kansas Member  
Chairman

\_\_\_\_\_  
Date

\_\_\_\_\_  
Brian Dunnigan, P.E.  
Nebraska Member

\_\_\_\_\_  
Date

\_\_\_\_\_  
Dick Wolfe, P.E.  
Colorado Member

\_\_\_\_\_  
Date

**Exhibit H**

**Nebraska Proposal:**

**Alternative WSY**

**Administration**



**Dave Heineman**  
Governor

**STATE OF NEBRASKA**  
**DEPARTMENT OF NATURAL RESOURCES**  
Brian P. Dunnigan, P.E.  
Director

July 30, 2012

IN REPLY TO:

David Barfield  
Kansas Commissioner, RRCA  
Kansas State Engineer  
Division of Water Resources  
109 SW 9<sup>th</sup> Street, 2nd Floor  
Topeka, KS 66612-1283

Dick Wolfe  
Colorado Commissioner, RRCA  
Colorado State Engineer  
Colorado Division of Water Resources  
1313 Sherman Street, Room 818  
Denver, CO 80203

RE: Submittal of Alternative Water-Short Year Plan for Consideration and Approval by the Republican River Compact Administration (RRCA)

Dear Commissioners Barfield and Wolfe:

Nebraska has completed a third generation of Integrated Management Plans (IMPs) and corresponding controls for the Natural Resources Districts in the Republican River Basin. These IMPs provide for various management actions aimed at reducing long-term consumptive uses and additional actions during periods which are identified as "Compact Call Years." Thus, pursuant to the terms of Appendix M of the Final Settlement Stipulation, Nebraska is respectfully submitting an Alternative Water-Short Year Plan for consideration and approval by the Republican River Compact Administration (RRCA).

Appendix M provides for a review period for both Kansas and Colorado through November 1<sup>st</sup> of the same year in which Nebraska submits a plan prior to August 1<sup>st</sup>. Nebraska is seeking approval of this plan and understands that, if approved, this plan would expire on January 1, 2016, thus requiring additional future approvals for the plan to be effective beyond January 1, 2016. Thank you in advance for your consideration of this plan.

Sincerely,

Brian P. Dunnigan, P.E.  
Director

Attachment

**State of Nebraska's Plan for Reduction of  
Computed Beneficial Consumptive Uses  
under Alternative Water-Short Year  
Administration**

**Submitted to the Republican River Compact Administration  
on July 30, 2012**



## **I. Introduction and Background on Alternative Water-Short Year Administration Planning Provisions**

Appendix M of the Final Settlement Stipulation (FSS) allows the State of Nebraska to submit one or more plans under Alternative Water-Short Year Administration to the Republican River Compact Administration (RRCA). Under Paragraph 1 of Appendix M, Nebraska may elect to implement an RRCA-approved “Plan for Reduction of Computed Beneficial Consumptive Uses” (Plan) when the projected water supply within Harlan County Reservoir is less than 130,000 acre-feet. When implemented, the Plan would permit Nebraska to use a three-year running average in lieu of the two-year requirements established in Subsection V.B.2.e.i of the FSS.

Pursuant to the terms of Appendix M of the FSS, Nebraska will provide notice prior to April 1<sup>st</sup> of each year that it intends to implement a Plan. Nebraska could not implement a Plan in any year if in the previous year, Water-Short Year Administration was in effect pursuant to Subsection V.B.1.b. and Nebraska failed to elect the Alternative Water-Short Year Administration in that year. Additionally, for any year that an approved Plan is implemented, such Plan shall be in effect for the remainder of the year unless the projected supply rises above 130,000 Acre-feet. At such time, Nebraska may revoke the Plan by notifying the RRCA. If Nebraska revokes a Plan, the provisions of Subsection V.B.2.e.i., if applicable, shall be in effect. If Nebraska revokes a Plan during the year, it may not resume the Plan in that year.

The terms of Appendix M of the FSS require that each Plan submitted by Nebraska indicate two items:

1. The actions which Nebraska will undertake to reduce its Computed Beneficial Consumptive Uses (CBCU) from the base condition
2. The amount of expected CBCU reduction to result from those actions

The Plan’s designed reductions in CBCU are to be evaluated by the RRCA using methods consistent with the RRCA Accounting Procedures and the RRCA Groundwater Model.

Once Nebraska elects to implement an approved Plan, Nebraska will provide notice to the RRCA by April 1<sup>st</sup> of its intention to implement a Plan for that year. Following any such notice, a three-year running average of the compact balances above Guide Rock for the current year plus the previous two years will be used to assess Nebraska’s compact compliance in Water-Short Year Administration. Notwithstanding compliance under the provisions of a three-year running average, the two year sum of Nebraska’s current and previous year’s CBCU in excess of its Allocation above Guide Rock, pursuant to Subsection V.B.2. of the Stipulation, shall not exceed the amount of CBCU that the Plan was designed to reduce above Guide Rock.

## **II. Plan for Reduction of Computed Beneficial Consumptive Uses under Alternative Water-Short Year Administration**

As described in Section I of this document, Nebraska must indicate the actions it would take to reduce its CBCU from the base condition (condition at the time of settlement, December 15, 2002) and the amount of expected reduction in CBCU resulting from those actions taken under this Plan. This evaluation is to be conducted in a manner consistent with the RRCA Accounting Procedures and the RRCA Groundwater Model. The following sections will describe Nebraska's intended actions under this Plan and the calculations to determine the expected reductions in Nebraska's CBCU resulting from those actions.

### ***A. Actions undertaken by Nebraska to reduce its Computed Beneficial Consumptive Use from the Base Condition***

Since the signing of the FSS, Nebraska has progressively worked to manage its CBCU. Several actions to reduce CBCU have been implemented and/or identified by Nebraska through its Integrated Management Planning (IMP) process. For the purposes of this Plan, Nebraska's actions to reduce CBCU will involve the implementation of Compact Call Year provisions for groundwater curtailments and surface water administration (details explained in attached IMPs). Under the Compact Call Year provisions of the IMPs, alternative management actions may be implemented in lieu of the prescribed groundwater curtailments. These may include:

1. Retirement of irrigated acreage
2. Leasing of surface water CBCU
3. Allocations of groundwater pumping
4. Augmentation of streamflows

In other words, Nebraska will rely on the implementation of the Compact Call Year provisions to serve as the foundation of its actions that it will take to reduce CBCU under this Plan. However, the other management actions (listed above) may be used in lieu of the Compact Call Year provisions if those management actions are determined to be hydrologically equivalent. If Nebraska elects to implement this plan, Nebraska will indicate in its notice to the RRCA (due by April 1) if any alternate management actions will be taken in lieu of the groundwater curtailment.

### ***B. Expected Reduction in Computed Beneficial Consumptive Use Resulting from Nebraska Reductions***

Nebraska will seek to maximize the utilization of its Compact allocation while ensuring that the planned reductions in CBCU will be sufficient to ensure compliance with the Compact in each year that this Plan is implemented. The expected reductions in CBCU resulting from Nebraska's actions under this Plan will vary for each time that it is implemented due to previous years Compact accounting balances and fluctuations in

Nebraska's projected allocation, projected CBCU, and projected Imported Water Supply Credit.

For each occasion on which Nebraska informs the RRCA that it intends to utilize this Plan it will be necessary to calculate the expected reduction in CBCU. This calculation of expected CBCU reduction is only necessary to ensure conformance with one of the tests<sup>1</sup> implemented under Alternative Water-Short Year Administration. The expected CBCU reduction is not used to calculate compliance with the three-year average under Alternative Water Short Year Administration.

As explained in Section II.A Nebraska will utilize the Compact Call Year provisions to serve as the foundation for expected CBCU reduction under this Plan. Furthermore, the CBCU reduction resulting from implementation of the Compact Call Year groundwater curtailment has previously been evaluated and provided by Nebraska (Schneider, 2012<sup>2</sup>). The Nebraska analysis indicates that the first year in which a Compact Call Year groundwater curtailment is implemented the expected CBCU reduction would be 15,089 acre-feet with a second consecutive year yielding an expected CBCU reduction of 38,515 acre-feet. Therefore, the CBCU reduction that this Plan will yield is 0 to 15,089 acre-feet in the first year and 0 to 38,515 in a second consecutive year. For any year that Nebraska intends to implement this Plan, Nebraska will indicate in its notice to the RRCA the expected CBCU reduction required for that year (this value will fall within the ranges specified above).

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<sup>1</sup> This test requires that the sum of the previous year and current year deficits above Guide Rock are not greater than the expected decrease in Computed Beneficial Consumptive Use under the plan.

<sup>2</sup> Nebraska Responsive Expert Report Concerning Nebraska's Future Compliance, James C. Schneider, Ph.D., March 15, 2012 (see spreadsheet titled Table 5 Figure ES1 and Figure 5.xlsx)

### III. Methods to Determine Expected CBCU Reductions and Compact Compliance Under this Plan

The scope of the actions taken by Nebraska will be guided by ensuring compliance with the two tests outlined in Section III.J of the RRCA Accounting Procedures and Reporting Requirements (August 12, 2010). This section of the Accounting Procedures provides the analytical approach to be used to assess Nebraska's compliance with the Compact once a Plan has been implemented. Section III.J states:

*Nebraska will be within compliance with the Compact as long as the three-year running average difference in Column 8 is positive and the sum of the previous year and current year deficits above Guide Rock are not greater than the expected decrease in Computed Beneficial Consumptive Use under the plan.*

Thus, in plain language, when Nebraska implements a Plan it shall be determined to be in compliance with the Compact if it meets two tests. Test One is that Nebraska's two-year sum (previous year plus current year) cannot be negative by more than the expected reduction in CBCU under the Plan and Test Two is that Nebraska achieves a positive three-year running average.

To evaluate Compact compliance under Test One, the expected CBCU reduction must be calculated. Due to the timeframe by which the expected CBCU reduction will need to be calculated and the fact that Nebraska intends to maximize its utilization of its allocation, it will be necessary to develop estimates of the previous year's Compact balance and a projection of the current year's Compact balance. Nebraska has developed and tested methods to achieve this purpose. These methods are contained in the Monitoring and Studies Section of the IMPs for the Lower Republican Natural Resources District, Middle Republican Natural Resources District, and Upper Republican Natural Resources Districts IMPs (see attached).

The value for the expected reduction in CBCU that is necessary under Test One would be calculated by the following equation.

Equation 1: Calculation of expected CBCU reduction when Nebraska implements this Plan

$$0.5 \times |\text{Year}_{-1} \text{CB} + \text{Projected Year}_0 \text{CB}| = \text{Expected CBCU Reduction}$$

Where:

$\text{Year}_{-1} \text{CB}$  = Nebraska's Compact balance for the previous year

$\text{Projected Year}_0 \text{CB}$  = Nebraska's projected Compact balance for the current year if no additional management actions were taken

An example of the equation used to assess compliance with Test One is illustrated in Equation 2 and Table 1. If the Test One balance calculated in Equation 2 is greater than or equal to zero, then Nebraska will be in compliance with Test One.

Equation 2: Calculation of compliance with Test One

$$[\text{Year}_{-1} \text{CB} + \text{Year}_0 \text{CB} + \text{Expected CBCU Reduction (result of Equation 1)}] = \text{Test One Balance}$$

Where:

Year<sub>0</sub>CB = Nebraska's Compact balance for the current year

Table 1. Test One Example Data

<b>Test One</b>	
Year	Compact Balance Above Guide Rock (acre-feet)
Previous Year (Year <sub>-1</sub> CB)	1,000
Expected CBCU Reduction	7,000
Current Year (Year <sub>0</sub> CB)	-8,000
Two Year Sum – Expected Decrease in CBCU	0

$$[1,000 + (-8,000) + 7,000] = 0$$

Thus, one can see that for purposes of Test One that the sum of Nebraska's annual Compact balances for the current year and previous year are able to be negative in an amount equal to the expected reduction in CBCU.

In addition to satisfying the requirements of Test One, Nebraska will provide, as necessary, additional reductions in CBCU such that the three-year running average would result in a value greater than or equal to zero (compliance with Test Two). Providing additional reductions of the expected CBCU would only be necessary if the three-year running average were to result in a negative value even after the CBCU reductions used to satisfy the requirements of Test One were implemented. The quantity of additional reductions in the expected CBCU that may be necessary to comply with Test Two would be calculated by the following equation.

Equation 3: Calculation of expected additional CBCU reduction

$$\text{Year}_{-2\text{CB}} + \text{Year}_{-1\text{CB}} + \text{Projected Year}_{0\text{CB}} + \text{Expected CBCU Reduction} = \text{Additional Expected CBCU Reduction}$$

Where:

$\text{Year}_{-2\text{CB}}$  = Nebraska's Compact balance for the year prior to previous year

$\text{Year}_{-1\text{CB}}$  = Nebraska's Compact balance for the previous year

$\text{Projected Year}_{0\text{CB}}$  = Nebraska's projected Compact balance for the current year if no additional management actions were taken

Expected CBCU Reduction = the results from Equation 1, inserted as a positive value

If the additional expected CBCU reduction calculated in Equation 3 is greater than or equal to zero, then no additional CBCU reductions will be necessary. If the value is negative then additional CBCU reductions will be implemented in conjunction with those which may have been identified in Test One.

The expected CBCU reductions and additional expected CBCU reductions are not used in assessing Compliance with Test Two. Compliance with Test Two will be determined by averaging the final Compact balances for the appropriate three years ( $\text{Year}_{-2\text{CB}}$ ,  $\text{Year}_{-1\text{CB}}$ , and  $\text{Year}_{0\text{CB}}$ ).

# **ATTACHMENTS**

## **INTEGRATED MANAGEMENT PLANS**

**LOWER  
REPUBLICAN  
NATURAL RESOURCES  
DISTRICT**

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**INTEGRATED  
MANAGEMENT PLAN  
(IMP)  
OCTOBER 1, 2011**



INTEGRATED MANAGEMENT PLAN  
Jointly Developed by the  
DEPARTMENT OF NATURAL RESOURCES  
and the  
LOWER REPUBLICAN NATURAL RESOURCES DISTRICT

**I. Authority**

This Integrated Management Plan (IMP) was prepared by the Board of Directors of the Lower Republican Natural Resources District (LRNRD) and the Nebraska Department of Natural Resources (DNR) in accordance with the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat.* § 46-701 et seq., and the Republican River Compact.

**II. Background**

In 1943 the states of Colorado, Kansas and Nebraska entered into the Republican River Compact (Compact) with the approval of the United States Congress. The Compact provides for the equitable apportionment of the "virgin water supply" of the Republican River Basin. In 1998, following several years of dispute about Nebraska's consumptive use of water within the basin, Kansas filed an original action in the United States Supreme Court (Court) against the states of Nebraska and Colorado, seeking, among other things, to include ground water in the calculation of the virgin water supply and consumptive use. After several rulings by the Court and its Special Master (including a recommendation that the depletions to streamflow from the use of ground water be included in the virgin water supply and be included in the calculations of each state's beneficial consumptive use), and several months of negotiation, the three states entered into a comprehensive Final Settlement Stipulation (FSS). That FSS was approved by the Supreme Court on May 19, 2003, and the Special Master's final report approving the Republican River Compact Administration (RRCA) Ground Water Model (GWM) developed by the three states for use in computing streamflow depletions resulting from ground water use was submitted to the Court on September 17, 2003.

Ground water use within the Republican River Basin is regulated by four natural resources districts: the Lower Republican Natural Resources District (LRNRD), the Upper Republican Natural Resources District (URNRD), the Middle Republican Natural Resources District (MRNRD), and the Tri-Basin Natural Resources District (TBNRD) (collectively referred to below as the NRDs). Both prior and subsequent to the approval of the FSS, the DNR conducted and participated in several meetings with the LRNRD during which it explained that in order for the state of Nebraska to achieve and maintain compliance with the terms of the FSS and the Compact it would be necessary to undertake the following: (1) to continue the moratorium on new surface water appropriations and new ground water wells, (2) to reduce all ground water pumpage from historic levels across the entire basin, and (3) to further reduce ground water pumping to comply with the Compact in water short years. The foregoing steps were to be accomplished to the extent possible through the use of incentive programs to reduce consumptive use of water. Similar discussions were held between the DNR and each of the other NRDs regarding the need (1) to accurately measure actual ground water pumpage and surface water diversions throughout the basin and within each NRD, (2) for the TBNRD to maintain the

Compact Imported Water Supply that Nebraska receives because of discharges from the “ground water mound” at sufficient levels to offset depletions to the Republican River caused by ground water pumping within the Republican River Compact area within TBNRD, and 3) for each of the NRDs other than the TBNRD to reduce their ground water pumping from their "1998-2002 baseline pumping volumes," which the DNR has defined as follows:

URNRD - 531,763 acre-feet

MRNRD - 309,479 acre-feet

LRNRD - 242,289 acre-feet

The DNR, through the use of the Republican River Compact Administration Ground Water Model, determined each NRD's depletions to streamflow for the 1998-2002 period (referred to below as the "1998-2002 baseline depletion") and the related depletion proportion (referred to below as the "1998-2002 baseline depletion proportion"):

URNRD - 74,161 acre-feet (44% of the depletions)

MRNRD - 52,168 acre-feet (30% of the depletions)

LRNRD - 43,954 acre-feet (26% of the depletions)

The percentage of allowable ground water depletions for each NRD was based on the proportion of the average ground water depletions caused by ground water pumping within each NRD that occurred during the baseline period from 1998- 2002 as determined by model runs of the Republican River Compact Administration Ground Water Model, with ground water pumping within each NRD alternated between being turned off and then being turned on. The percentage of allowable ground water depletions may be altered in the future if concurrence on a new methodology can be reached amongst all of the basin NRDs.

On June 24, 2005, the first Integrated Management Plan (2005 IMP) adopted by the LRNRD and the DNR became effective. That 2005 IMP described the ground water Rules and Regulations for the 2005-2007 period. Among other things, that 2005 IMP provided for a base ground water allocation of 12 acre-inches per year (36 acre-inches for the allocation period) for all regulated wells located west of U.S. Highway 183, and a base ground water allocation of 11 acre-inches per year (33 acre-inches for the allocation period) for all regulated wells located east of U.S. Highway 183. The 2005 IMP also allowed the landowners to carry forward unused base allocations.

Since adoption of the 2005 IMP, there have been efforts to implement incentive programs, studies, and research to further our understanding and ability to comply with the Republican River Compact and FSS. The LRNRD and the DNR now seek to adopt and implement a revised IMP for the regulation of water resources within the LRNRD as required by the laws of the state of Nebraska, specifically the Ground Water Management and Protection Act. A subsequent IMP was adopted by LRNRD and DNR in 2008, with additional changes during 2009.

During 2008 Colorado, Kansas, and Nebraska entered into dispute resolution regarding a number of issues, including future compliance. In June 2009 the arbitrator, Karl Dreher, issued a finding that the LRNRD IMP may be adequate during years with average and above-average precipitation, but may not be adequate during dry years. Although the LRNRD's allowable depletions to streamflow are limited to 26% of Nebraska's allowable depletions, there were no details in the plan to describe how this would be accomplished. These additional details have been added to this 2011 version of the IMP.

The LRNRD will meet its responsibility under *Neb. Rev. Stat. § 46-715* of the Ground Water Management and Protection Act, including meeting the obligations under the FSS, by adopting revised Rules and Regulations to implement the this IMP. The LRNRD understands that the URNRD and the MRNRD have also revised their IMPs, and have chosen to adopt a "compliance standard" whereby they have agreed that their use of ground water shall be within the allocation granted to them as determined by the 1998-2002 baseline pumping volumes, reduced by a certain percentage. They have also agreed that they will be assigned their proportionate share of streamflow depletions as calculated by the 1998-2002 baseline depletion percentages. The failure of any one NRD to adopt, implement or enforce IMPs adequate to meet their proportionate share of the responsibility to achieve and maintain Nebraska's compliance with the Compact and the FSS shall not itself require any additional action by the other NRDs.

### **III. Limitations for Certain Purposes**

To the extent provisions of this IMP relate to and accommodate or provide for water short year regulatory action intended to achieve compliance with this Compact, this IMP applies to portions of the Republican River Basin lying in the Nebraska counties of Furnas, Harlan, Franklin, Webster, and Nuckolls, lying upstream of Guide Rock, Nebraska: those areas within the basin lying west of a line proceeding north from the Nebraska-Kansas state line and following the western edge of Webster County, Township 1, Range 9, Sections 34, 27, 22, 15, 10, and 3 through Webster County, Township 2, Range 9, Sections 34, 27 and 22; then proceeding west along the southern edge of Webster County, Township 2, Range 9, Sections 16, 17 and 18; then proceeding north following the western edge of Webster County, Township 2, Range 9, Sections 18, 7 and 6, through Webster County, Township 3, Range 9, Sections 31, 30, 19, 18, 7, and 6 to its intersection with the northern boundary of Webster County.

### **IV. Goals and Objectives**

The LRNRD and the DNR have adopted the following Goals and Objectives:

#### **A. Goals:**

1. Ensure that ground water and surface water users within the LRNRD assume their share of the responsibility to keep Nebraska in compliance with the Republican River Compact.

2. Provide that LRNRD's share of that responsibility be distributed in an equitable manner and to minimize adverse economic, social and environmental consequences to the extent possible.
3. To sustain a balance between water uses and water supplies within the LRNRD so that the economic viability, social and environmental health, safety, and welfare of the LRNRD can be achieved and maintained for both the near and long term.

**B. Objectives:**

1. With limited exceptions, prevent the initiation of new or expanded uses of water that increase Nebraska's computed beneficial consumptive use of water within the LRNRD, as required for Compact compliance and by Nebraska law.
2. Achieve the required reductions in water use through a combination of regulatory and incentive programs designed to reduce beneficial consumptive use.
3. The DNR shall ensure that administration of surface water appropriations in the basin is in accordance with the Compact and in full compliance with Nebraska law.
4. After taking into account any reduction in beneficial consumptive use achieved through basin-wide incentive and streamflow augmentation programs, make such additional reductions in ground water use in Compact Call Years as are necessary to achieve a reduction in beneficial consumptive use in the LRNRD to 26% of the allowable ground water depletions in such years. Compact Call Years will be determined through the procedures outlined in Section IX of this IMP.
5. The LRNRD and the DNR will continue to investigate and explore augmentation projects that would add to or retime the water supply within the basin. Such augmentation and retiming projects include, but are not necessarily limited to, the following:
  - a. Leasing or purchasing surface water and/or ground water;
  - b. Augmentation wells, both within and outside of the Republican River Basin;
  - c. Exploring trans-basin diversion projects;
  - d. Conjunctive management of surface water irrigation projects.
6. The LRNRD's net depletions shall not exceed its appropriate allocation (26%) of the state's allowable ground water depletions as determined by the Republican River Compact Administration Ground Water Model

**V. Map**

Except as noted in Section III above, the area subject to this IMP is the geographic area within the boundaries of the LRNRD (see Map 1). The Rapid Response Region is shown as a sub-area within the boundaries of the LRNRD (see Map 2).

## **VI. Ground Water Controls**

The authority for the ground water component of this IMP is the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat. § 46-701 et seq.* The ground water controls in this IMP will be implemented in the LRNRD Ground Water Management Rules and Regulations. The Rules and Regulations may be modified in a manner consistent with this IMP from time to time hereafter by the LRNRD, and shall be sufficient so as to meet the Compliance Standards and controls set forth below.

### **A. Compliance Standards**

#### **1. Purpose**

These compliance standards are established by DNR and LRNRD to assess whether the course of action taken by the LRNRD, with the intention of providing their proportionate share of assistance to the state in order for the state to maintain compliance with the FSS and Compact, is sufficient. The action taken by the LRNRD shall be evaluated in connection with the action taken by the other NRDs in the Republican River Basin and any other relevant considerations, including the information and data provided by DNR and past action by the LRNRD.

#### **2. Duration**

On an annual basis the DNR and LRNRD shall reexamine the sufficiency and effectiveness of the compliance standards to determine if amendments or revisions to this IMP are necessary to ensure the state's compliance with the FSS and Compact. Nothing contained herein shall prohibit or preclude any amendment or revision at any time by the DNR and LRNRD when such action is necessary. Further, nothing contained in this subsection shall be construed as eliminating the review of the provisions of this IMP as required by *Neb. Rev. Stat. § 46-715*.

#### **3. Standards**

The LRNRD shall adopt and implement rules and regulations which shall ensure that the following standards are met. The standards shall be affected through the procedure described in Section IX - Monitoring and Studies. Section IX specifies a forecast and resulting actions needed at the Guide Rock compliance point (during water short years) and at the Hardy compliance point. The procedures for determining whether the compliance standards are met will be based on the Republican River Compact Administration (RRCA) Accounting Procedures, the baseline depletion percentage, and the annual forecast as outlined in Section IX. The standards are:

- a. Provide for a minimum twenty percent (20%) reduction in pumping from the 98-02 pumping volume using a combination of regulation and supplemental programs so that the average ground water pumping volume is no greater than 194,000 acre-feet over the

long term. If precipitation is lower than average for any given year, the ground water pumping volume for any single year may be above 194,000 acre-feet.

b. An additional five percent (5%) reduction in 98-02 pumping volumes during the next five-year period shall be accomplished primarily through voluntary incentive programs and other means as determined by the LRNRD. The necessity for continuing this annual reduction shall be reevaluated by DNR and the LRNRD in 2015.

c. The LRNRD's net depletions to streamflow shall average no greater than 26% of the allowable ground water depletions determined in accordance with RRCA Accounting Procedures using the RRCA GWM. The average shall be computed using the annual allowable ground water depletion for the same years as are used to determine the averages for Nebraska's compliance with the FSS.

## **B. Other Ground Water Controls and Management Activities**

The LRNRD and the DNR recognize that the required reductions in water consumption could be accomplished by means other than those adopted in this IMP. The IMP and associated controls may need to be amended in the future to implement any such revisions.

1. During Compact Call Years, the LRNRD will seek to implement management actions (such as surface water leasing, ground water leasing, augmentation, etc.) to ensure compliance with this IMP. These management actions will be implemented through the authorities granted by the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat.* §§ 46-701 to 46-753. Details of such management actions will be provided to DNR by January 31<sup>st</sup> of each year for evaluation. If such management actions are insufficient to ensure compliance with this IMP, the LRNRD will in the alternative to management actions, implement additional ground water controls and regulations to make up for its proportionate share of any expected shortfall as identified in the annual forecast and described in Section IX of this IMP. Such additional control will include, but not be limited to, restriction or curtailment of ground water pumping within the Rapid Response Region of the LRNRD and restrictions on ground water pumping in all other sub areas of the district.
2. When necessary to ensure compliance with this IMP during Compact Call Years, the LRNRD may set a one-year pumping allocation within the district. Such allocation will set the maximum pumping level in that year within any region or sub-region.
3. Maintain requirement for metering of all ground water uses according to LRNRD standards.
4. Provide for transfers according to LRNRD standards

## **VII. Surface Water Controls - Department of Natural Resources**

The authority for the surface water component of this IMP is the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat.* § 46-701 et seq. The surface water controls that will be continued and/or begun by the DNR are as follows:

- A. DNR shall continue to administer surface water under the prior appropriation system.
- B. The DNR shall implement the following additional surface water administration as required by the FSS:
  - 1. To provide for regulation of natural flow between Harlan County Lake (HCL) and Superior-Courtland Diversion Dam, Nebraska will recognize a priority date of February 26, 1948, for Kansas Bostwick Irrigation District, the same priority date as the priority date held by the Nebraska Bostwick Irrigation District's Courtland Canal water right.
  - 2. When water is needed for diversion at Guide Rock and the projected or actual irrigation supply is less than 130,000 acre-feet of storage available for use from Harlan County Lake as determined by the Bureau of Reclamation using the methodology described in the Harlan County Lake Operation Consensus Plan attached as Appendix K to the FSS, Nebraska will close junior, and require compliance with senior, natural flow diversions of surface water between Harlan County Lake and Guide Rock.
  - 3. Nebraska will protect storage water released from Harlan County Lake for delivery at Guide Rock from surface water diversions.
  - 4. Nebraska, in concert with Kansas and in collaboration with the United States, and in the manner described in Appendix L to the FSS, will take actions to minimize the bypass flows at the Superior- Courtland Diversion Dam.
- C. Metering of all surface water diversions at the point of diversion from the stream will continue to be required. For surface water canals that are not part of a Bureau of Reclamation project, farm turnouts are required to install and maintain a DNR approved measuring device. All measuring devices shall meet DNR standards for installation, accuracy and maintenance. All appropriators will be monitored to ensure that neither the rate of diversion nor the annual amount diverted exceeds that allowed by the applicable permit or by statute.
- D. The DNR's moratorium on the issuance of new surface water permits was made formal by an Order of the Director dated July 14, 2004. Exceptions may be granted by the DNR to the extent permitted by statute or to allow issuance of permits for existing reservoirs that currently do not have such permits. Such reservoirs are limited to those identified through the FSS required inventory of reservoirs with over 15 acre-feet capacity.
- E. All proposed transfers of surface water rights shall be subject to the criteria for such transfers as found in *Neb. Rev. Stat.* §§ 46-290 to 46-294.04 and related DNR Rules or the criteria found

in *Neb. Rev. Stat.* §§ 46-2,120 to 46-2,130 and related DNR Rules in effect as of January 1, 2010.

F. The DNR completed the adjudication process within the LRNRD upstream of Guide Rock for the individual appropriators in the Republican River Basin in 2004. The results of that adjudication provided up-to-date records of the number and location of acres irrigated with surface water by such appropriators. Those records will be used by the DNR to monitor use of surface water and to make sure that unauthorized irrigation is not occurring. The DNR shall also be proactive in initiating subsequent adjudications whenever information available to the DNR indicates the need for adjudication as outlined by state statutes.

G. The DNR reserves the right to request, in the future, that this IMP be modified to require any such additional measures. In the event such a request is made, the DNR shall "allow the affected surface water appropriators and surface water project sponsors a reasonable amount of time, not to exceed one hundred eighty (180) days, unless extended by the DNR, to identify the conservation measures to be applied or utilized, to develop a schedule for such application and utilization, and to comment on any other proposed restrictions." *Neb. Rev. Stat.* § 46-716(2).

H. During Compact Call Years, as determined from the procedures and analysis set forth in Section IX below, DNR will regulate and administer surface water in the basin as necessary to ensure Compact compliance. During Compact Call Years, DNR will issue a "Compact Call" on the Republican River at Hardy or Guide Rock to carry out administration for the Compact in a manner consistent with the doctrine of prior appropriation. A "Compact Call" will result in DNR issuing closing notices on all natural flow and storage permits in the basin until such time as DNR, in consultation with the LRNRD and other basin NRDs, determines that yearly administration is no longer needed to ensure Compact compliance, pursuant to Section IX.

### **VIII. Incentive Programs**

The LRNRD and DNR, alone or in cooperation with other parties, intend to establish and implement financial, incentive, and qualified projects as described in *Neb. Rev. Stat.* § 2-3226.04 to reduce beneficial consumptive use of water within the LRNRD. These projects include, but are not limited to, (1) acquisition by purchase or lease of surface water or ground water rights, including storage water rights with respect to a river or any of its tributaries, (2) acquisition by purchase or lease or the administration and management, pursuant to mutual agreement, of canals and other works, including reservoirs, constructed for irrigation from a river or any of its tributaries, (3) vegetation management, including, but not limited to, the removal of invasive species in or near a river or any of its tributaries, and (4) the augmentation of river flows. As a condition for participation in an incentive program, water users or landowners and the LRNRD may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established. Such incentive programs may include any program authorized by state law and/or federal programs such as, but not limited to, the Conservation Reserve Enhancement Program (CREP) and Environmental Quality Incentives Program (EQIP) operated by the U.S. Department of Agriculture.



Any reductions in depletions to streamflow generated through supplemental programs, funded entirely by the state of Nebraska and/or the United States Government, including acreage retirement or other incentive programs undertaken through programs available throughout the Republican River Basin will not accrue to any specific NRD, regardless of the location or other conditions of the acreage included in the program or of the location of the effect of such water savings on the river system. Any reductions in depletions to streamflow resulting from any such basin-wide programs shall be considered, in the calculation of each NRD's compliance with the 98-02 depletion percentages. This calculation is outlined in Section IX.B.2.c of this IMP.

However, should any NRD establish, fund partially or in total, and implement its own such conservation program, available only for acreage within such district, the accounting of credit for the resulting water savings shall be given exclusively to that NRD.

With agreement of the NRDs involved, the benefits from a supplemental program may be allocated to each NRD based upon their share of the cost of the program.

To the extent possible, it is the intent of the LRNRD to provide compensation to water users that are required to forgo water use to allow the LRNRD and the state to comply with the compact. This may be in addition to or as part of any other LRNRD incentive or retirement program developed to facilitate compact compliance.

## **IX. Monitoring and Studies**

The overarching purpose of the Monitoring and Studies Section is to ensure that, in cooperation with the other Republican River Basin NRDs, the DNR and LRNRD maintain compliance with the Republican River Compact as adopted in 1943 and as implemented in accordance with the FSS approved by the United States Supreme Court on May 19, 2003. The objective of the Monitoring and Studies Section of this IMP is to gather and evaluate data, information, and methodologies that could be used to increase understanding of the surface water and hydrologically connected ground water system, to test the validity of the conclusions and information upon which this IMP is based, and to assist decision makers in properly managing the water resources within the LRNRD and the Republican River Basin as a whole.

On an annual basis the results of monitoring and studies will typically be discussed in a basin-wide meeting which will take place prior to October 31<sup>st</sup> each year. The purpose of the meeting will be to discuss the preliminary accounting for the current year, the forecast of allowable streamflow depletions for the coming year, and potential management actions as necessary. Table 1 outlines important dates and objectives related to section IX.

Table 1. Important Dates and Objectives.

Date	Objective
Prior to February 1	LRNRD will provide DNR with meter reading database and GIS coverage maps to be used for the RRCA annual model update.
Prior to RRCA Annual Meeting	DNR will provide LRNRD with their determination of whether the LRNRD was in compliance with the compliance standards based on each previous year's annual Compact accounting.
September - October	Obtain power records and other estimates to determine pumping for T = 0 ground water model run.
Prior to October 31	Discuss results of monitoring and studies, preliminary accounting for current year, and early forecast of allowable streamflow depletions.
Prior to November 15	DNR will provide correspondence to LRNRD notifying them of potential Compact call determination for the coming year (T + 1).
November 15 – January 1	LRNRD and DNR will discuss potential management alternatives in the situation that the coming year (T + 1) will be a Compact Call Year.
Prior to December 1	Surface water project sponsors may present a plan to DNR to achieve a consumptive use that is less than forecasted consumptive use.
Prior to January 1	Provide final forecast of allowable streamflow depletions and determination of Compact Call Years.
Prior to January 31	LRNRD will provide DNR with details regarding existing management alternatives in lieu of additional ground water regulations or controls to make up for the expected shortfall.

**A. Plan to Gather and Evaluate Data, Information and Methodologies**

As outlined in *Neb. Rev. Stat. § 46-715(2)(e)*, ongoing programs and new studies or other projects may become a source of information that is used to evaluate the effectiveness of controls adopted by the LRNRD and the DNR. The LRNRD and DNR will jointly pursue and/or evaluate studies, contingent upon budget and staff resources, to evaluate their potential effectiveness in achieving the goals and objectives of this IMP.

The following potential studies have been identified by the DNR and the LRNRD: (1) crop rotation, (2) vegetation management, (3) irrigation scheduling, (4) a survey of the type and location of irrigation systems throughout the LRNRD, (5) tillage practices, and (6) conjunctive management.

**B. Monitoring**

Part One of this Monitoring Section describes the tracking and reporting of water use activities within fully appropriated areas of the district by the LRNRD and the DNR. Part Two of this Monitoring Section describes the analyses that will be utilized to annually forecast the projected depletions in each subsequent year. This accounting and forecast in accordance with

*Neb. Rev. Stat.* § 46-715(6) will serve to increase the understanding and test the validity of the conclusions and information upon which this plan is based.

Compact accounting and data exchanges among the states shall be done annually in accordance with the FSS, dated December 15, 2002, including the RRCA Accounting Procedures and Reporting Requirements which are contained in Appendix C thereof. An annual report of the RRCA is published each year. The accounting procedures, reporting requirements, and annual report of the RRCA are independent of this monitoring plan, and therefore are not restated within the Monitoring Section of this plan.

### **1. Part One: Tracking and Reporting of Water Use Activities**

The LRNRD and the DNR will make all documents, reports, records, computer runs or other calculations or material necessary to determine compliance with the Compact available to each other, regardless of whether such documents are available under the Nebraska Public Records Act or otherwise, unless such materials are identified as confidential under Nebraska statutes or by a ruling of a court of competent jurisdiction. Specifically, and without limitation, the LRNRD agrees to annually provide GIS coverage maps of all lands irrigated and to meter, record and provide to the DNR its ground water usage records and irrigation system details. The LRNRD shall make copies of district actions taken on variances, offsets, and similar actions available to DNR.

The DNR agrees to make available to the LRNRD all reports and records of the other NRDs necessary to determine their compliance with reductions, as well as all documentation and reports utilized by the DNR to determine the basin's virgin water supplies and Nebraska's compliance with the Compact.

In the event any materials are withheld by either DNR or LRNRD under a claim of statutory confidentiality, the party withholding such materials shall describe the contents of the materials and reasons for the denial in accordance with *Neb. Rev. Stat.* § 84-712.04.

### **2. Part Two: Forecast Procedures**

Each year in compliance with *Neb. Rev. Stat.* § 46-715(6) the DNR in consultation with the Republican River NRDs shall forecast the maximum amount of water that may be available from streamflow for beneficial use in the short term and long term to comply with the Compact. This forecast will be used to assist the DNR and the NRDs in ensuring compliance with the Compact. DNR in conjunction with the NRDs will annually evaluate the forecast procedures and make changes as deemed necessary to reflect management actions being taken in the basin.

In order to complete the forecast, the DNR and LRNRD in conjunction with the other NRDs will review available information and determine if additional controls must be implemented within any district for Compact Call Year compliance. The forecast will be completed prior to January 1<sup>st</sup> of each year, and will detail the expected shortfall within each district in the event that the coming year is a Compact Call Year. By the following January 31<sup>st</sup>, if

necessary, the LRNRD will provide DNR with details regarding existing management alternatives (such as execution of existing surface water leases) in lieu of additional ground water regulations or controls to make up for the expected shortfall.

The procedures developed to complete the forecast will be reviewed annually by the DNR to determine if modifications are necessary. The forecast will project the next year's balance (projected Nebraska allocation plus projected Imported Water Supply less the projected Computed Beneficial Consumptive Use, or CBCU), and the projected water short year and normal year accounting balances. These balances will be utilized in conjunction with other information to determine if a Compact Call Year exists.

The DNR's calculation of allowable ground water depletions for the LRNRD and determination of the necessity for additional controls will utilize additional ground water model information, estimated end-of-year information for reservoir volumes, and estimated streamflow to determine on an annual basis whether additional NRD-specific controls must be implemented.

**a. Determination of Available Streamflow**

The forecast will typically determine the forecast values for both Guide Rock (water short year accounting point) and Hardy (normal year accounting point). The DNR's forecast values for Guide Rock will include: 1) the one-year balance (projected allocation less the projected CBCU plus the imported water supply); two-year average, and three-year average. The DNR's forecast values for Hardy will include: 1) the one-year balance (projected allocation less the projected CBCU plus the imported water supply) and 2) the five-year average. These forecasted values will be used in conjunction with sections IX.B.2.b, IX.B.2.c, IX.B.2.d, and IX.B.2.e to determine when management actions or controls must be implemented. The DNR will calculate forecast values for the next year using the variables in table 2.

Table 2. Information Used for Forecast of Allowable Depletions.

Year	Item	Information Source
T - 3		Draft; current Accounting Procedures (v. 2005)
T - 2		Draft; current Accounting Procedures (v. 2005)
T - 1		Draft; current Accounting Procedures (v. 2005)
Provisional Data for T = 0 (Current Year or Immediate Past Irrigation Season)	Pumping	Power records estimate
	Surface Water Use	Estimated from preliminary data and previous years values
	Streamflow	Available provisional records end of year estimated
	Evaporation	T - 1 records
Forecast Year  T + 1  (Coming Irrigation Season)	Ground Water Consumptive Use and Imported Water Supply Credit	Average values for T = 0 and T - 1
	Surface Water Consumptive Use	Colorado: Average of T - 1 and T - 2 use Kansas: + (.1858 x HCL content) + 9,575 Nebraska: - (4x10 <sup>-7</sup> ) x (NE lake volume) <sup>2</sup> + (0.52) x (NE lake volume) - 42,000
	Streamflow	+ (5-year average of state line flows) x 0.41 + 0.23 x HCL content - 27,450

In accordance with *Neb. Rev. Stat.* § 46-703(6), DNR, the NRDs, and surface water project sponsors shall meet prior to the final forecast of allowable streamflow depletions and determination of Compact Call Years. At this meeting the involved parties will discuss the forecasted streamflow and surface water consumptive use. From these discussions, surface water project sponsors may present a plan to DNR to achieve a consumptive use that is less than forecasted consumptive use. Such a plan could avoid a potential Compact Call Year. This plan must be completed and provided to the DNR no later than December 1<sup>st</sup> of the current year (T = 0).

The following equations will be utilized to determine the one-year balance for the forecast year.

$$\begin{aligned} \text{CWS} = & + \text{SwCBCU}_{\text{NE}} + \text{SwCBCU}_{\text{KS}} + \text{SwCBCU}_{\text{CO}} \\ & + \text{GwCBCU}_{\text{NE}} + \text{GwCBCU}_{\text{KS}} + \text{GwCBCU}_{\text{CO}} \\ & + \text{State Line Streamflow} \end{aligned}$$

$$\text{Nebraska Allocation} = \text{CWS} * 0.5$$

$$\text{CBCU}_{\text{NE}} = \text{SwCBCU}_{\text{NE}} + \text{GwCBCU}_{\text{NE}}$$

IWS = Imported Water Supply Credit

$$\text{Hardy One-Year Balance} = \text{Nebraska Allocation} + \text{IWS} - \text{CBCU}_{\text{NE}}$$

$$\text{Guide Rock One-Year Balance} = \text{Hardy One-Year Balance} * 0.89 - 9040$$

Where:

T - 3 = Three years ago from the current year

T - 2 = Two years ago from the current year

T - 1 = One year ago from the current year

T = 0 = The current year

T + 1 = The upcoming year that is being forecasted

CWS = Computed Water Supply

$\text{GwCBCU}_{\text{NE, KS, CO}}$  = Ground Water Computed Beneficial Consumptive Use for each respective state

$\text{SwCBCU}_{\text{NE, KS, CO}}$  = Surface Water Computed Beneficial Consumptive Use for each respective state

Nebraska Allocation = CWS x 0.5: The amount of water the state of Nebraska is allowed to use over one year

Balance = The sum of Nebraska's Allocation, plus the Nebraska Imported Water Supply, less Nebraska's Computed Beneficial Consumptive Use

The one-year balance for normal year accounting (Hardy One-Year Balance) and water short year accounting (Guide Rock One-Year Balance) will be utilized to

project the two-year and three-year average balances above Guide Rock and the five-year average balance above Hardy.

### **b. Compact Call Year Evaluation**

This section of the monitoring plan specifies the process that will be completed by the DNR to determine the Compact Call Years, as detailed in Attachment 1, Republican River Water Supply Evaluation and Required Actions Flowchart. This evaluation takes into account reservoir content and recent balances above Guide Rock and Hardy and the annual forecast as described above in Section IX.B.2.a. This process will be completed and provided to the LRNRD by DNR prior to January 1<sup>st</sup> of each year.

#### **Checklist A. Water Short Year Test**

- 1) Is the forecast projection for the coming year's irrigation supply less than 119 kAF?
  - a. Yes. Proceed to Checklist B.
  - b. No. Proceed to Checklist C.

#### **Checklist B. Water Short Year**

- 1) Is the current year's balance ( $T = 0$ ) above Guide Rock sufficient to offset the dry year forecast for next year's balance above Guide Rock minus 10 kAF<sup>1</sup>?
  - a. Yes. Proceed to Checklist D.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section IX.B.2.c. of this IMP.

Note: If it is beneficial to utilize the alternative water short year provisions from the FSS (the previous two years have a greater balance than last year alone), and an alternative water short year plan has been approved by the RRCA, then the two-year balance (for  $T = 0$ , the current year, and  $T - 1$ , the prior year) will be substituted for the current year's balance in Checklist B.

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<sup>1</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 5k AF. For any remaining consecutive Compact Call Years, it will be reduced to zero.

### **Checklist C. Early Warning System for Water Short Year Compliance**

- 1) When Harlan County Lake declines from one year to the next, the December end-of-month (EOM) content is generally about 84% of what it was last year. A December EOM of 246 kAF provides a high level of confidence that the coming year ( $T + 1$ ) will not be water short. Based on the current year's ( $T = 0$ ) Harlan County Lake December EOM content, compute a dry-year projection for next year ( $T + 1$ ) based on this relationship. Is the value greater than 246 kAF?
  - a. Yes. Proceed to Checklist D.
  - b. No. Advance to question 2.
  
- 2) Is the dry year forecast for next year's ( $T + 1$ ) balance above Guide Rock greater than zero?
  - a. Yes. Proceed to Checklist D.
  - b. No. Advance to question 3.
  
- 3) Is the current year's balance ( $T = 0$ ) above Guide Rock sufficient to offset the dry year forecast for next year's balance ( $T + 1$ ) above Guide Rock minus 10 kAF<sup>2</sup>?
  - a. Yes. Proceed to Checklist D.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section IX.B.2.c. of this IMP.

### **Checklist D. Normal Year Administration**

- 1) Will the forecast for next year ( $T + 1$ ) result in a 5-year average at Hardy that is greater than 10 kAF?
  - a. Yes. Analyze long term trends and additional adjustments in accordance to Section IX.B.2.e.
  - b. No. Advance to question 2.
  
- 2) Will both the forecast for next year result in a 5-year average at Hardy ( $T - 3$ ,  $T - 2$ ,  $T - 1$ ,  $T = 0$ , and  $T + 1$ ) that is greater than zero and the average balance at Hardy of the most recent four years ( $T - 2$ ,  $T - 1$ ,  $T = 0$ , and  $T + 1$ ) be greater than zero?
  - a. Yes. Analyze long term trends and additional adjustments in accordance to Section IX.B.2.e.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section IX.B.2.c. of this IMP.

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<sup>2</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 5k AF. For any remaining consecutive Compact Call Years, it will be reduced to zero.



**c. Calculation of Allowable Ground Water Depletions for the LRNRD and Determining the Necessity of Additional Controls**

This section of the monitoring plan specifies the calculations which will be completed by the DNR to determine the allowable ground water depletions for the LRNRD in any Compact Call Year. These procedures will be utilized to indicate when additional controls must be implemented by the LRNRD and DNR to ensure compliance with this IMP in the event that the DNR's forecast, provided prior to January 1<sup>st</sup> of each year, indicates a Compact Call Year. These procedures will incorporate information provided by the LRNRD (contracts for water leasing, augmentation, etc.) to the DNR by January 31<sup>st</sup> of each year following a forecast that indicates a Compact Call Year. The procedures for determining the allowable ground water depletion for the LRNRD are as follows.

The allowable ground water depletion for the LRNRD =

$$(\text{Nebraska Allocation} + \text{IWS} - \text{SwCBCU}_{\text{NE}} - \text{Other NRD CBCU}) * 0.26$$

Where:

Nebraska Allocation = Nebraska available water supply under the Compact

IWS = Imported Water Supply credit

SwCBCU<sub>NE</sub> = The surface water consumptive use by Nebraska, including net evaporative losses

Other NRD CBCU = The GwCBCU<sub>NE</sub> calculated for the South Platte NRD, Twin Platte NRD, Tri-Basin NRD, Central Platte NRD, and Little Blue NRD

The DNR will utilize information provided by the LRNRD by January 31<sup>st</sup>, to evaluate the following.

**Step 1. LRNRD Estimated Ground Water Depletions**

Ground water depletions for the LRNRD will be based on the previous 2-year average (as described in table 2 above), unless such plan provided by the LRNRD indicates that additional restrictions on ground water pumping will be imposed. If the additional restrictions would cause the pumping to be less than the previous two year average then the lower estimate will be used. In cases where that year's allocation will be less the LRNRD will provide the DNR a map indicating the geographic area subject to the allocation for that year and the maximum allocation available. The DNR will utilize the information provided by the LRNRD and represent such information in the RRCA GWM.

Step 2. Potential yield from LRNRD surface water leases/agreements, augmentation, etc.

The DNR will determine the potential yield from any surface water lease/agreement, augmentation, etc. entered into or provided by the LRNRD. In the event that augmentation is utilized, procedures for determining the project yield must have been approved by the RRCA. This potential yield will be incorporated as NRD management actions in section IX.B.2.d.

If a Compact Call Year is reached as a result of checklist B.1 or C.3 the final step to determine if additional ground water and surface water controls (refer to Section VI.B.1. and VII.H of this IMP) must be implemented is as follows.

Allowable ground water depletions for LRNRD (as determined above) - Forecasted LRNRD's portion of GwCBCU<sub>NE</sub> (Step 1) + Potential yield from LRNRD surface water leases/agreements, augmentation, etc. (Step 2) + Current Year's Balance (T = 0) - 3333<sup>3</sup>.

If the resulting balance is greater than or equal to negative one-hundred (-100) acre-feet, no additional ground water and surface water controls will be implemented.

If the resulting balance is less than negative one-hundred (-100) acre-feet, the additional ground water and surface water controls (refer to Section VI.B.1. and VII.H of this IMP) must be implemented. This potential yield will be incorporated as NRD management actions in section IX.B.2.d.

Note: If it is beneficial to utilize the alternative water short year provisions from the FSS (the previous two years have a greater balance than last year alone), and an alternative water short year plan has been approved by the RRCA, then the two-year balance (for T = 0, the current year, and the prior year, T - 1) will be substituted for the current year's balance in Checklist B.

If a Compact Call Year is reached as a result of checklist D.2 the final step to determine if additional ground water and surface water controls (refer to Section VI.B.1. and VII.H of this IMP) must be implemented is as follows.

Allowable ground water depletions for LRNRD (as determined above) - Forecasted LRNRD's portion of GwCBCU<sub>NE</sub> (Step 1) + Potential yield from LRNRD surface water leases/agreements, augmentation, etc. (Step 2) + Previous Years Balances (T = -3, T = -2, T = -1, T = 0 or if applicable + T = -2, T = -1, T = 0)

If the resulting balance is greater than or equal to negative one-hundred (-100) acre-feet, no additional ground water and surface water controls will be implemented.

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<sup>3</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 1667. For any remaining consecutive Compact Call Years, it will be reduced to zero.

If the resulting balance is less than negative one-hundred (-100) acre-feet, the additional ground water and surface water controls (refer to Section VI.B.1. and VII.H of this IMP) must be implemented. This potential yield will be incorporated as NRD management actions in section IX.B.2.d.

**d. Calculation of Compact Call Streamflow Volume**

This section of the monitoring plan specifies the calculation which will be completed by the DNR to determine the streamflow volume necessary to ensure Compact compliance in any Compact Call Year. If DNR's forecast, provided prior to January 1<sup>st</sup> of each year, indicates a Compact Call Year, then these calculations will be made incorporating information provided by the LRNRD (contracts for water leasing, augmentation, etc.) to the DNR by January 31<sup>st</sup> of each year following a forecast that indicates a Compact Call Year. The result of these calculations will be utilized to indicate when additional controls must be implemented by the LRNRD and DNR to ensure compliance with this IMP. When such a Compact Call Year is indicated, the DNR will implement additional surface water controls (refer to Section VII.H of this IMP). Criteria that will be used to determine when administration for the "Compact Call" is no longer necessary will be based on ensuring sufficient streamflow volumes have been achieved at the compliance point. Determination of sufficient streamflow volumes to ensure Compact compliance will be determined through the following procedures.

Compact Call Streamflow Volume = Forecasted Streamflow + NRD Management Actions + Surface Water Curtailment Benefit

Where:

Forecasted Streamflow = Streamflow for T + 1; (5-year average of state line flows) x 0.41 + 0.23 x HCL content - 27,450.

NRD Management Actions = Actions taken by the LRNRD and/or other basin NRDs to enhance streamflow. These actions may include surface water or ground water leases, augmentation, or curtailment.

Surface Water Curtailment Benefit = Actions taken by DNR to ensure Compact compliance in the event that basin NRD Management Actions are not sufficient to overcome the projected negative balance.

**e. Additional Adjustments Related to Long-Term Trends**

The DNR and LRNRD in conjunction with the other basin NRDs will annually meet to consult to determine if additional reductions from the 98-02 pumping volumes may be warranted. Through this consultation, the DNR and LRNRD will review expected long term (5 to 20 year) increases in depletions to streamflow and discuss potential mitigation measures that may be necessary.

**f. Harlan County Lake Operations**

In the event that operations of Harlan County Lake are not in accordance with Appendix K of the Final Settlement Stipulation, the DNR will work in consultation with the NRDs to modify Sections VI, VII, and IX of this IMP until normal operations resume.

**X. Modifications to the Integrated Management Plan**

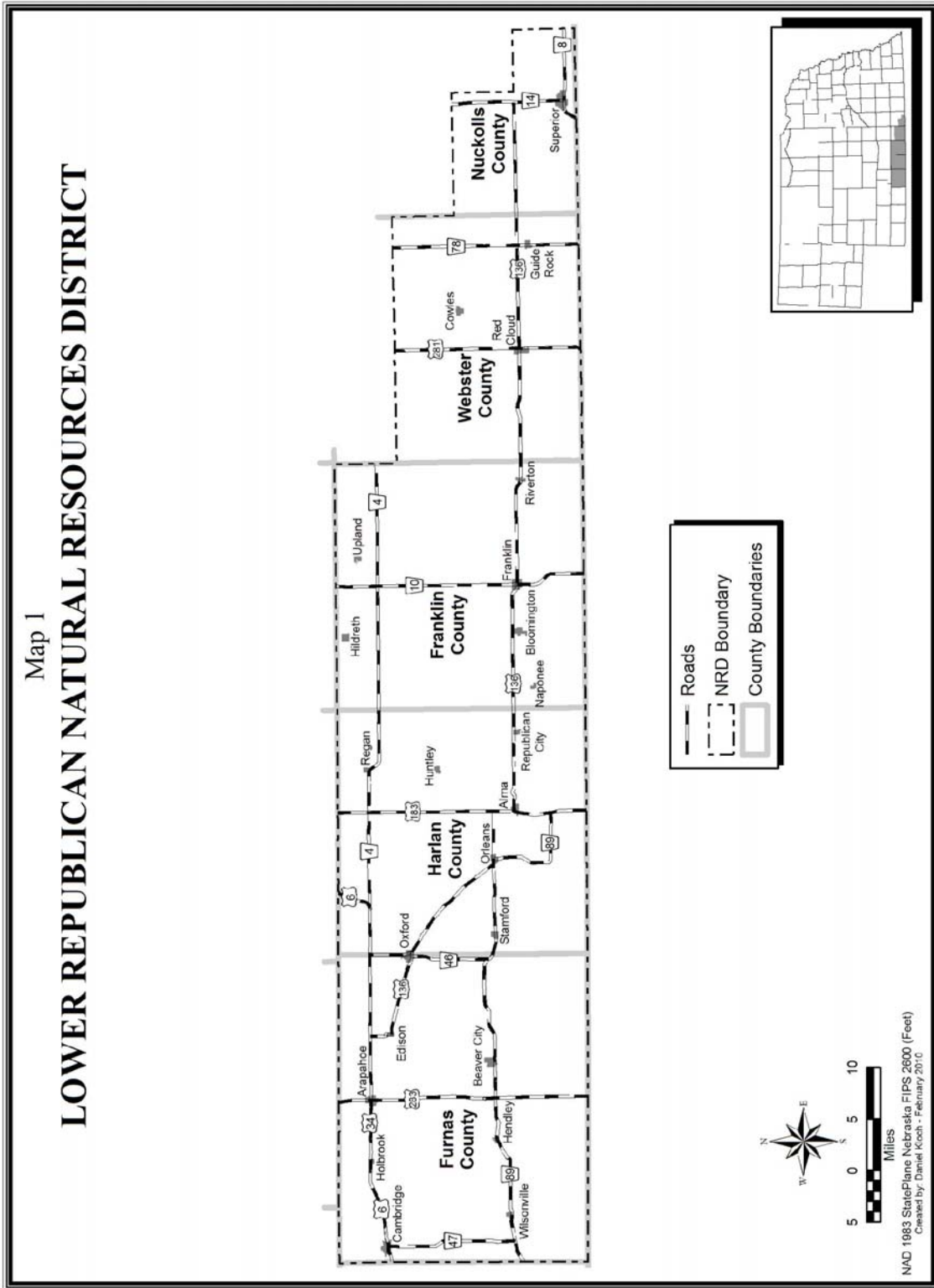
Except as provided herein, modifications to this Integrated Management Plan including the Rules and Regulations contained within this IMP shall require mutual agreement by both the LRNRD and the DNR as to the proposed changes and shall be effective when signed by both LRNRD and DNR after all legally required hearing procedures and publication requirements have been satisfied. After the proposed changes have been agreed to, a joint hearing on those changes will be required. Following the joint hearing, the LRNRD and the DNR shall issue an order reflecting the decision made.

**XI. Information Considered**

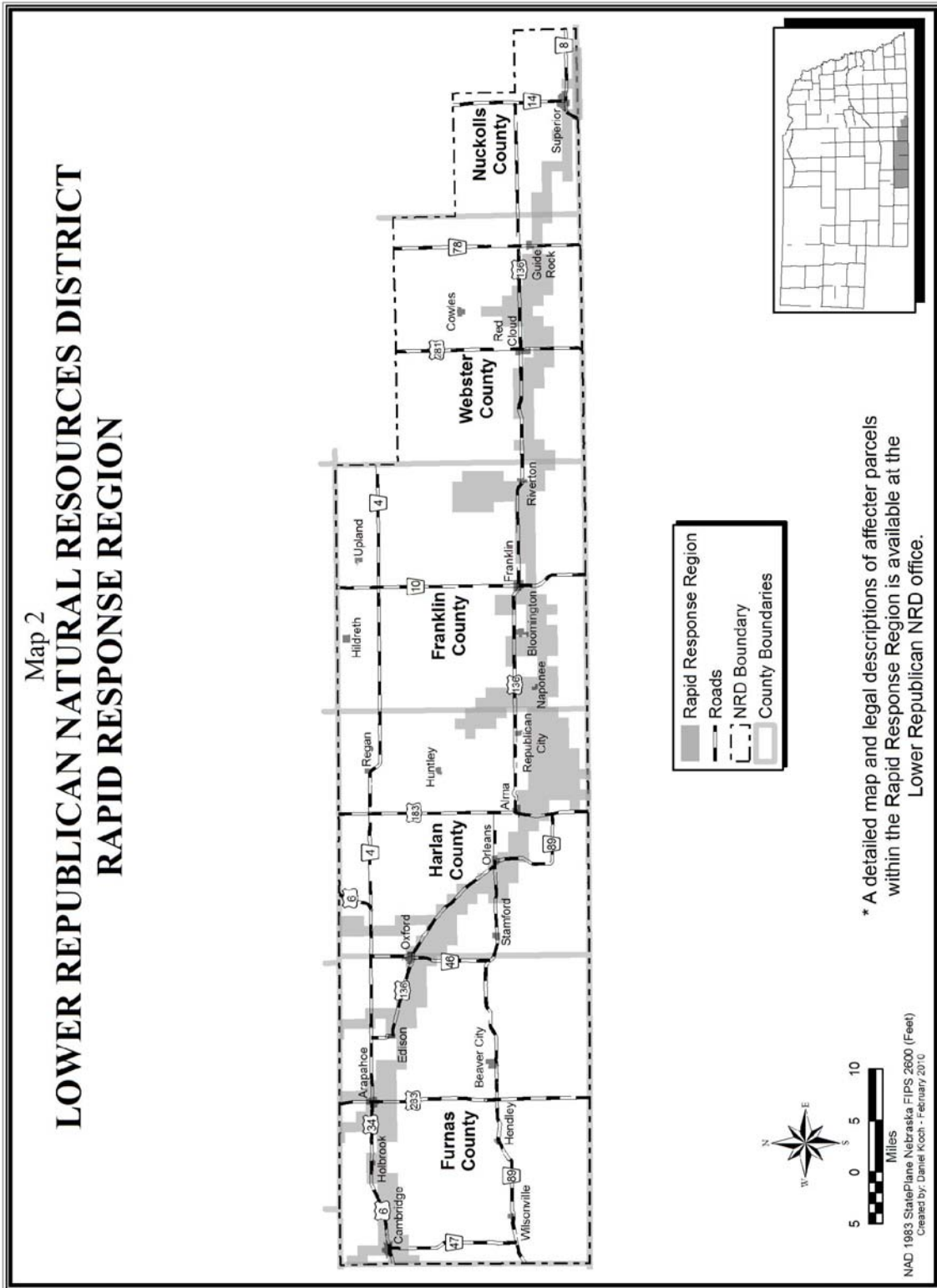
Information used in the preparation and to be used in the implementation of this IMP can be found in:

- The simulation runs of the Republican River Compact Administration Ground Water Model,
- The data tables of the FSS for the Republican River Compact,
- Chapters 3, 6 and 7 of the 1994 Lower Republican NRD Ground Water Management Plan,
- *Arbitrator's Final Decision*, Karl Dreher, June 30, 2009, and
- Additional data on file with the LRNRD and the DNR.

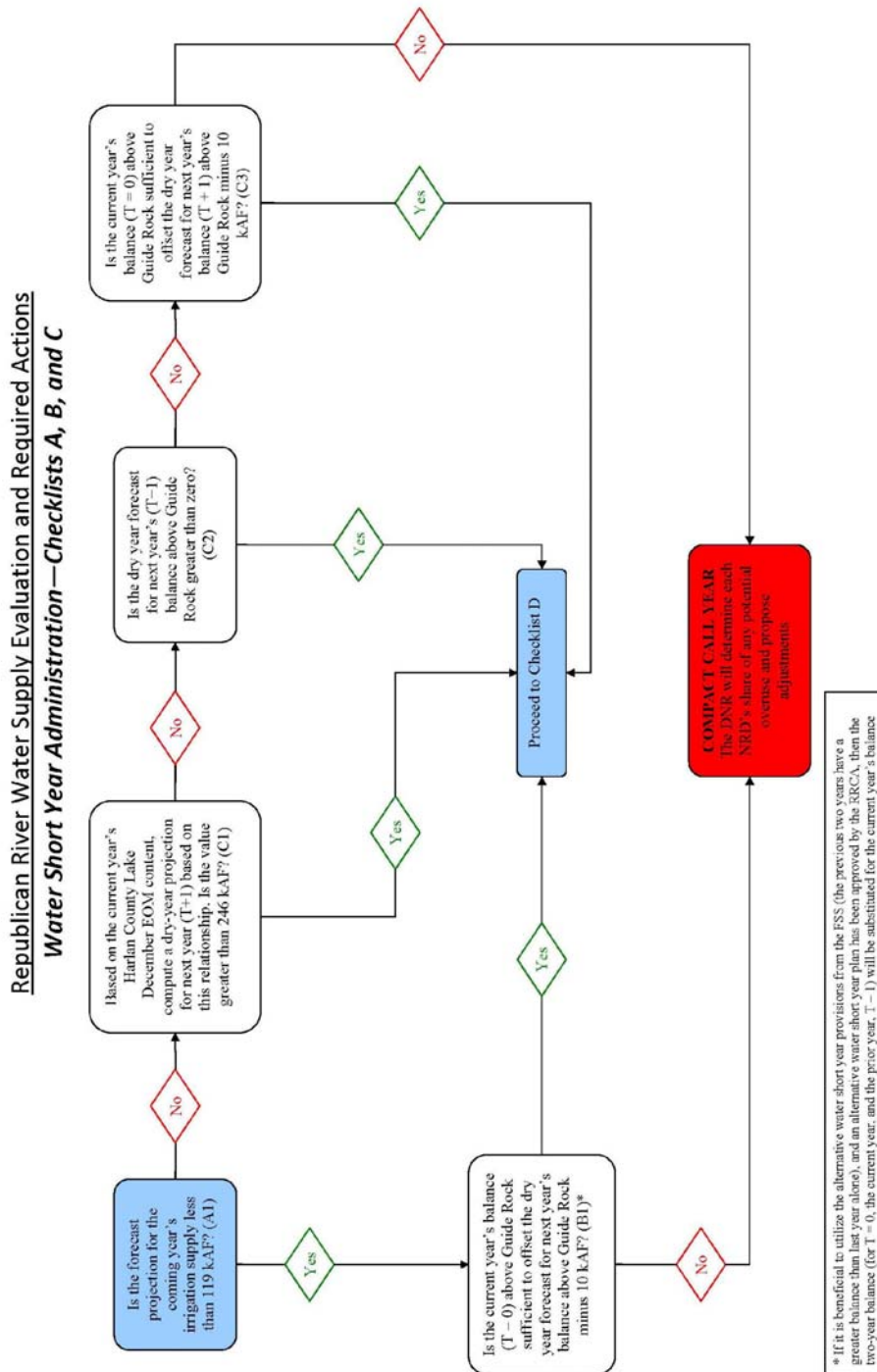
Map 1. Lower Republican Natural Resources District.



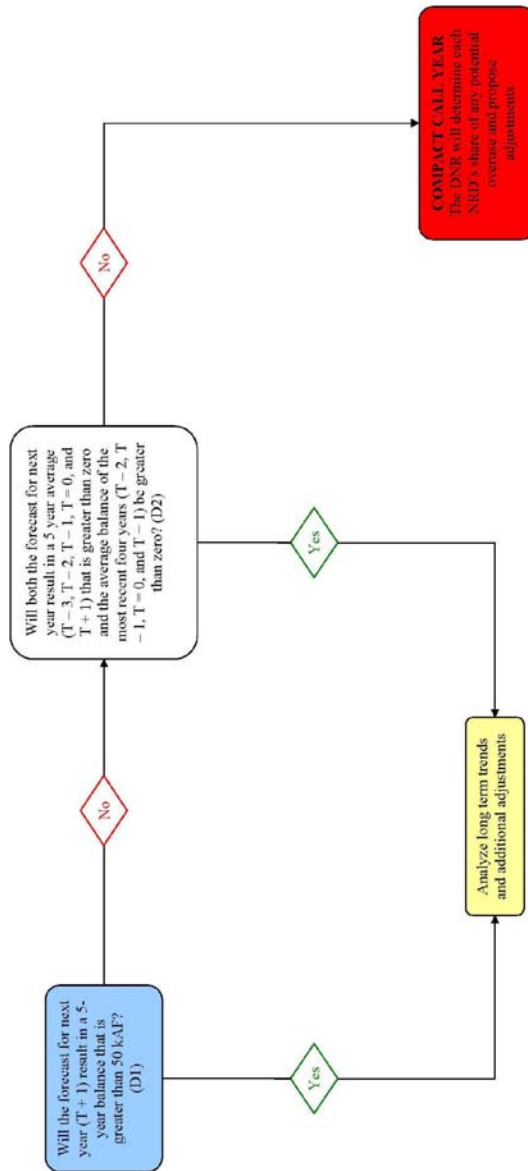
Map 2. Lower Republican Natural Resources District Rapid Response Region.



Attachment 1. Republican River Water Supply Evaluation and Required Actions Flowchart.



Republican River Water Supply Evaluation and Required Actions  
**Normal Year Administration—Checklist D**





**MIDDLE  
REPUBLICAN  
NATURAL RESOURCES  
DISTRICT**

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**INTEGRATED  
MANAGEMENT PLAN  
(IMP)**

**NOVEMBER 1, 2010**

INTEGRATED MANAGEMENT PLAN  
Jointly Developed by the  
DEPARTMENT OF NATURAL RESOURCES  
and the  
MIDDLE REPUBLICAN NATURAL RESOURCES DISTRICT

**I. Authority**

This integrated management plan (IMP) was prepared by the Board of Directors of the Middle Republican Natural Resources District (MRNRD) and the Nebraska Department of Natural Resources (DNR) in accordance with the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat. §§ 46-701 to 46-753* (Reissue 2004).

**II. Background**

In 1943 the States of Colorado, Kansas and Nebraska entered into the Republican River Compact (Compact) with the approval of Congress. The Compact provides for the equitable apportionment of the “virgin water supply” of the Republican River Basin. Following several years of dispute about Nebraska’s consumptive use of water within the basin, Kansas filed an original action in the United States Supreme Court (Court) against the states of Nebraska and Colorado in 1998. After several rulings by the Court and its Special Master and several months of negotiation, all three states entered into a comprehensive agreement known as the Final Settlement Stipulation (FSS). The FSS was approved by the Court on May 19, 2003, and the Special Master’s final report approving the Joint Ground Water Model developed by all three states for use in computing stream flow depletions resulting from ground water use and for computing the imported mound credit was submitted to the Court on September 17, 2003.

In July, 1996, the MRNRD and the other three natural resources districts (NRDs) in the Republican River Basin, pursuant to then Section 46-656.28 of the Nebraska statutes, initiated a joint action planning process with the Department of Water Resources (DWR), the predecessor agency to DNR. In accordance with that process, DWR first made a preliminary determination in 1996 that “there was reason to believe that the use of hydrologically connected ground water and surface water resources is contributing to or is in the reasonably foreseeable future likely to contribute to disputes over the Republican River Compact.” When the studies required by Section 46-656.28 had been completed, DNR issued its conclusions on May 20, 2003, in the form of a report entitled: “Republican River Basin, Report of Preliminary Findings.” Those conclusions included the following determination:

Pursuant to Section 46-656.28 and the preliminary findings in this report, the Department determined that present and future Compact disputes arising out of the use of hydrologically connected ground water and surface water

resources in the Republican River Basin could be eliminated or reduced through the adoption of a joint action plan.

Following four hearings on that report, DNR made final the preliminary conclusions in the report and the four basin NRDs were so informed. The MRNRD and the other three NRDs each then adopted orders to proceed with developing a joint action plan for integrated management of hydrologically connected surface water and ground water resources in the Basin; preparation of a joint action plan for the MRNRD began soon thereafter.

The Nebraska Legislature adopted LB962 in April of 2004 and it was signed by Governor Johanns on April 15, 2004, and became operative on July 16, 2004. That bill repealed Section 46-656.28 and replaced it with legislation providing for a revised process for addressing hydrologically connected surface water and ground water resources. In order to avoid the need to begin anew the integrated management planning processes that had been commenced but not completed under Section 46-656.28, LB962 provided for the transition of those ongoing planning processes into the newly enacted process now codified as Sections 46-713 to 46-719. The MRNRD and DNR agreed that preparation of a joint action plan had not been completed prior to July 16, 2004; therefore, subsection (3) of what is codified as Section 46-720, governs that transition. Completion of this plan proceeded under the new process and this plan was adopted in accordance with Section 46-718.

The MRNRD and the DNR adopted an IMP effective January 1, 2005, that contained ground water rules and regulations for the 2005-2007 period. That IMP established an average ground water allocation of thirteen (13) inches per certified acre, certified all uses and included several other controls. A goal of the 2005 IMP was to reduce water use by five percent (5%) from the 1998-2002 baseline. The IMP was updated and revised for 2008 – 2012, with a goal of reducing water use by twenty percent (20%) from the 1998-2002 baseline.

Although the MRNRD's allowable depletions to stream flow are limited to 30% of Nebraska's allowable depletions, there were no details in the plan to describe how this would be accomplished. In 2008 Colorado, Kansas, and Nebraska entered into dispute resolution regarding a number of issues, including future compliance. In June 2009 the arbitrator issued a finding that the MRNRD IMP may be adequate during years with average and above-average precipitation, but since water-short year measures were not specifically identified, the plan may not be adequate during multiple dry years, an issue addressed in this IMP

Since that time, efforts have been taken to implement or conduct incentive programs, studies, and research to further our understanding and ability to comply with the Republican River Compact and the FSS.

### III. Agreements

The MRNRD and the DNR wish to adopt and implement a revised IMP for the regulation of water resources within the district as required by the laws of the State of Nebraska. The MRNRD and the DNR agree that the IMP for the district shall keep the district's average net depletions to an amount within thirty percent (30%) of the State's average allowable ground water depletions. Based upon its calculations the DNR believes that at the time this IMP became effective, a twenty percent (20%) reduction from the 98-02 pumping volume would be sufficient, without additional stream flow augmentation, to keep the district's average net depletions within the MRNRD's thirty percent (30%) share of the State's allowable ground water depletions. As described in sections below, during periods of low water supply additional reductions from the 98-02 pumping volume may be necessary.

The DNR has determined pumping volumes, depletion volumes, and depletion percentages for the period 1998-2002 defined as "1998-2002 Baselines". The pumping volumes are used throughout this IMP and are referenced as the "98-02 pumping volume". DNR, through the use of the Republican River Compact Administration Ground Water Model, has also determined each District's impact on stream flow for the baseline period and those impacts are defined as "98-02 depletion volume". Those depletion volumes have resulted in depletion percentages used throughout this IMP and defined as "98-02 depletion percentages."

The failure of any District to adopt, implement, or enforce an IMP adequate to meet their proportionate share of the responsibility to achieve and maintain Nebraska's compliance with the Compact shall not by itself require any additional action by the other Districts. Neither the MRNRD nor DNR will require the IMP to be amended solely for the purpose of changing the responsibility of water users within the MRNRD based on the failure of the other Basin NRDs to implement or enforce an IMP to meet their share of the responsibility to keep Nebraska in compliance with the Republican River Compact.

### IV. Definitions

- A. 1998-2002 Baselines** - The depletions to stream flow, in the Nebraska portion of the Republican River Basin, as a result of ground water uses in the years 1998-2002 inclusive.

98-02 Pumping Volume:

URNRD-531,763 AF, MRNRD-309,479 AF, LRNRD-242,289 AF

98-02 Depletion Volume:

URNRD-74,161 AF, MRNRD-52,168 AF, LRNRD-43,954 AF

98-02 Depletion Percentage:

URNRD-44%, MRNRD-30%, LRNRD-26%

- B. Allowable Stream flow Depletions** - the maximum amount of stream flow depletion in the Republican River Basin that can occur in a given year without Nebraska exceeding its allocation. Allowable stream flow depletions are the sum of the allowable ground water depletions and the allowable surface water depletions.
- C. Allowable Ground Water Depletions** - the maximum level of depletions to stream flow that may occur as a result of ground water pumping of wells within the Republican River Basin that can occur in a given year without Nebraska exceeding its allocation.
- D. Allowable Ground Water Depletion for the MRNRD** - the annual mean depletions to stream flow resulting from the impact of ground water pumping in the MRNRD. These depletions shall average no greater than 30% of the allowable ground water depletion. The average shall be computed using the allowable annual ground water depletion for the same years as are used to determine the averages for Nebraska's compliance with the FSS.
- E. Supplemental Programs** – as used in this plan, refers to, but is not limited to; surface water or ground water augmentation projects, river flow enhancement projects, incentive programs, riparian management projects and other projects that may reduce the District's net depletions to stream flow.
- F. Compliance Standard** - the criteria that will be used to determine whether the controls of this IMP and the MRNRD's rules, regulations, and other programs are sufficient to meet the goals and objectives of this IMP pertaining to pumping volumes and depletions
- G. Net Depletion** – the actual ground water depletion for the MRNRD less any reduction in stream flow depletions or increase in accretions to the stream resulting from supplemental projects as determined by the RRCA ground water model and in accordance with the RRCA Accounting Procedures.
- H. Compact Call Year** –A year in which the Department's forecast procedures outlined in Section X.B.2.b of this IMP indicate the potential for non-compliance if sufficient surface water and ground water controls and/or management actions are not taken. Compact Call Year streamflow administration will be conducted by the Department in a manner consistent with Section X.B.2.d of this IMP. Pursuant to Article VI of the Republican River Compact, diversions into the Courtland Canal for beneficial use in the State of Kansas will not be subject to the Compact Call.

## **V. Goals and Objectives**

Pursuant to *Neb. Rev. Stat. § 46-715* (Reissue 2004), the goals and objectives of this IMP must have a purpose of “sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the river basin... can be achieved and maintained for both the near term and the long term.” The MRNRD will meet its responsibility under *Neb. Rev. Stat. § 46-715*, including meeting the obligations under the FSS, by adopting revised rules to implement the IMP with regulations and other supplemental programs.

The following goals and objectives are adopted by the MRNRD and the DNR to achieve the purpose stated above:

### **A. Goals:**

1. In cooperation with the other basin NRDs and the Nebraska Department of Natural Resources, maintain compliance with the Compact as adopted in 1943 and as implemented in accordance with the FSS approved by the United States Supreme Court on May 19, 2003.
2. Ensure that ground water and surface water users within the MRNRD assume their share, but only their share, of the responsibility to keep Nebraska in compliance with the Compact.
3. Provide that MRNRD’s share of compliance responsibility and impacts to stream flow be apportioned within the MRNRD in an equitable manner and by minimizing, to the extent possible, adverse economic, social, and environmental consequences.
4. Reserve and protect any increases to stream flow available from regulation or supplemental programs, enacted or implemented to maintain Compact compliance, from any use that would negate the benefit of such regulation or programs, to the extent allowed by statute and the surface water controls of this IMP.
5. Protect ground water users whose water wells are dependent on recharge from the river or stream and the surface water appropriators on such river or stream from stream flow depletions caused by surface water uses and ground water uses begun after the date the river basin was designated as fully appropriated.

### **B. Objectives:**

1. With limited exceptions, prevent the initiation of new or expanded uses of water that increase Nebraska’s computed beneficial consumptive use of water within the MRNRD.

2. Ensure that administration of surface water appropriations in the basin is in accordance with the Compact and in full compliance with Nebraska law and the surface water controls of this IMP.
3. Achieve, on average, a twenty percent (20%) reduction in 98-02 pumping volume under average precipitation conditions.
4. Maintain, on average, the MRNRD net depletions at or below thirty percent (30%) of the allowable ground water depletion.
5. After taking into account any reduction in beneficial consumptive use achieved through district or basin-wide supplemental projects and other projects developed at the basin or district level with the expressed purpose or result of reducing consumptive use or increasing stream flow, make such additional reductions in ground water use in Compact Call Years as are necessary to achieve a reduction in beneficial consumptive use in the MRNRD to 30% of Nebraska's allowable ground water depletions to stream flow in such years. Compact Call Years will be determined through the procedures outlined in Section X of this IMP.
6. Achieve the required reductions in water use through a combination of regulatory and supplemental programs designed to reduce beneficial consumptive use. To the extent funds are available, incentive programs will be made available to as many MRNRD water users as possible.
7. The MRNRD and the DNR will investigate or explore methods to manage the impact of vegetative growth on stream flow.
8. Develop a procedure to provide offsets for new consumptive uses of water so that economic development in the MRNRD may continue without producing an overall increase in ground water depletions as a result of new uses.

## **VI. Map**

The area subject to this IMP is the geographic area within the boundaries of the MRNRD (see Map 1). The Rapid Response Region is shown as a sub-area within the boundaries of the MRNRD, (see Map 2). The Quick Response region is shown as a sub-area within the boundaries of the MRNRD, (see map 3).

## **VII. Ground Water Controls**

In accordance with *Neb. Rev. Stat. § 46-715*, one or more of the ground water controls authorized by *Neb. Rev. Stat. § 46-739* and *Neb. Rev. Stat. § 46-740* shall be adopted for the purpose of implementing this plan. Other authorities, provided for in the Ground Water Management and Protection Act, may be used to supplement

these controls. These controls, along with any applicable supplemental programs, shall be consistent with the goals and objectives of this plan and be sufficient to meet the compliance standards set forth below, ensure that the state will remain in compliance with the Compact, and protect the ground water users whose water wells are dependent on recharge from the river or stream and the surface water appropriators on such river or stream from stream flow depletion caused by surface and ground water uses begun after July 16, 2004, the date the river basin was designated as fully appropriated, in accordance with *Neb. Rev. Stat.* §§ 46-720 and 46-713-46-715,

*The Rules and Regulations – Ground Water Management Area in the Middle Republican Natural Resources District* contains the rules for implementation of controls required by the FSS and other controls needed for the effective administration of a ground water management subarea for integrated management. The actions proposed by the FSS were rules and regulations for transfers, meters, and certification of acres. In addition, a well drilling moratorium and a ban on the increase of irrigated acres were also implemented. The compliance standard and management activities listed below will be or have been implemented to achieve and maintain Compact compliance.

Amendments to the MRNRD rules and regulations dealing with the requirements of *Neb. Rev. Stat.* §46-715(4)(b), and §46-715(4)(c) shall have the concurrence of DNR. The MRNRD may otherwise amend those regulations without the approval of the DNR so long as the compliance standards listed below are met.

The Determination of whether the MRNRD is in compliance with the compliance standards shall be made prior to the regular annual meeting of the RRCA and shall be based on each year's annual Compact accounting.

## **A. Compliance Standards**

### **1. Purpose**

These Compliance Standards are established by DNR and MRNRD to assess whether the course of action taken by the MRNRD, with the intention of providing a proportionate share of assistance to the State, is sufficient for the State to maintain compliance with the FSS and the Compact. The action taken by the MRNRD shall be evaluated in connection with the action taken by the other NRDs in the Republican River Basin and any other relevant considerations, including the information and data provided by DNR and past action by the district.

### **2. Duration**

On an annual basis the DNR and MRNRD shall examine the sufficiency and effectiveness of the Compliance Standards to determine if amendments or



revisions to this IMP are necessary to ensure the State's compliance with the FSS and the Compact. Nothing contained herein shall prohibit or preclude any amendment or revision, at anytime, by the DNR and MRNRD, when such action is necessary. Further, nothing contained in this subsection shall be construed as eliminating the review of the provisions of this IMP as allowed by *Neb. Rev. Stat. §46-715*.

### 3. Standards

The MRNRD shall adopt and implement rules and regulations which shall ensure that the following standards are met. The standards shall be affected through the procedure described in Section X - Monitoring and Studies. Section X specifies a forecast and resulting actions needed at the Guide Rock compliance point (during water short years) and at the Hardy compliance point. The procedures for determining whether the compliance standards are met will be based on the RRCA Accounting Procedures, the baseline ground water depletion percentage, and the annual forecast as outlined in Section X. The standards are

- a. A minimum of twenty percent (20%) reduction in pumping from the 98-02 pumping volume using a combination of regulation and supplemental programs so that the average ground water pumping volume is no greater than 247,580 acre-feet over the long term. The ground water pumping volume for any single year may be above 247,580 acre-feet.
- b. An additional reduction in 98-02 pumping volumes of five percent (5%) during the next five year period shall be accomplished primarily through voluntary incentive programs and other means as determined by the MRNRD. The necessity for continuing this annual reduction shall be reevaluated by DNR and the MRNRD in 2015.
- c. The district's net depletions to stream flow shall average no greater than thirty percent (30%) of the State of Nebraska's allowable ground water depletions as computed using the RRCAGWM. The average shall be computed using the annual allowable ground water depletion for the same years as are used to determine the averages for Nebraska's compliance with the FSS.

#### **B. Other Controls and Management Activities**

The MRNRD and the DNR recognize that the required reductions in water consumption could be accomplished by means other than those adopted in this IMP. The IMP and associated controls may need to be amended in the future to implement any such revisions.

1. During Compact Call Years, the MRNRD will seek to implement management actions (such as surface water leasing, ground water leasing, augmentation, etc.) to ensure compliance with this IMP. These management actions will be implemented through the authorities granted by the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat. §§ 46-701 to 46-753*. Details of such management actions will be provided to DNR by January 31 of each year for evaluation. If such management actions are insufficient to ensure compliance with this IMP, the MRNRD will in the alternative to management actions, implement additional ground water controls and regulations to make up for its proportionate share of any expected shortfall as identified in the annual forecast and described in Section X of this IMP. Such additional control will include but not be limited to, restriction or curtailment of ground water pumping within the Rapid Response Region of the MRNRD and restrictions on ground water pumping in all other sub areas of the district.
2. When necessary to ensure compliance with this IMP during Compact Call Years, the MRNRD may set a one year pumping allocation within the district. Such allocation will set the maximum pumping level in that year within any region or sub-region.
3. Maintain a moratorium on new uses with the exceptions noted in the FSS.
4. Limit or prevent the expansion of irrigation uses.
5. Maintain requirement for metering of all ground water uses according to MRNRD standards.
6. Provide for transfers according to NRD standards.
7. The MRNRD shall make available to DNR copies of NRD actions taken on variances and consult with DNR to minimize or eliminate any impact, relating to Compact compliance, that may arise as a result of a variance granted by the district.
8. DNR will consult with the MRNRD when considering applications for permits under the Municipal and Rural Domestic Ground Water Transfers Permit Act, the Industrial Ground Water Regulatory Act or other such permitting actions by the DNR that will have an impact on water supplies of the Republican River Basin.
9. The MRNRD will work with DNR to achieve the maximum amount of benefit in the accounting of leased or purchased water, augmentation projects or in similar projects.

## **VIII Surface Water Controls - Department of Natural Resources**

The authority for the surface water component of this IMP is *Neb. Rev. Stat.* §46-715 and §46-716. The surface water controls that will be continued and/or begun by the DNR are as follows:

- A. DNR will do the following additional surface water administration as required by the FSS:
1. To provide for regulation of natural flow between Harlan County Lake and Superior-Courtland Diversion Dam, Nebraska will recognize a priority date of February 26, 1948, for Kansas Bostwick Irrigation District, the same priority date as the priority date held by the Nebraska Bostwick Irrigation District's Courtland Canal water right.
  2. When water is needed for diversion at Guide Rock and the projected or actual irrigation supply is less than 130,000 acre-feet of storage available for use from Harlan County Lake as determined by the Bureau of Reclamation using the methodology described in Harlan County Lake Operation Consensus Plan attached as Appendix K to the FSS, Nebraska will close junior, and require compliance with senior, natural flow diversions of surface water between Harlan County Lake and Guide Rock.
  3. Nebraska will protect storage water released from Harlan County Lake for delivery at Guide Rock from surface water diversions.
  4. Nebraska will take actions to minimize the bypass flows at Superior-Courtland Diversion Dam in concert with Kansas and in collaboration with the United States, and in the manner described in Appendix L to the FSS.
- B. Metering of all surface water diversions at the point of diversion from the stream will continue to be required. For surface water canals that are not part of a Bureau of Reclamation project, farm turnouts also will be required to be metered. All meters shall have a totalizer and shall meet DNR standards for installation, accuracy and maintenance. All appropriators will be monitored closely to ensure that neither the rate of diversion nor the annual amount diverted exceeds that allowed by the applicable permit or by statute.
- C. The DNR's moratorium on the issuance of new surface water permits was made formal by Order of the Director dated July 14, 2004, and will be continued. Exceptions may be granted to the extent permitted by statute or to allow issuance of permits for existing reservoirs that currently do not now have such permits. Such reservoirs are limited to those identified through the FSS required inventory of over fifteen (15) acre-feet capacity reservoirs.

- D. All proposed transfers of surface water rights shall be subject to the criteria for such transfers as found in *Neb. Rev. Stat.* §§46-290 to 46-294.04 and related DNR rules or the criteria found in *Neb. Rev. Stat.* §§46-2,120 to 46-2,130 and related DNR rules.
- E. The DNR completed the adjudication process for individual appropriators in the Republican River Basin upstream of Guide Rock in 2004. The results of that adjudication provided up-to-date records of the number and location of acres irrigated with surface water by such appropriators. Those records will be used by the DNR to monitor use of surface water and to make sure that unauthorized irrigation is not occurring. The DNR also will be proactive in initiating subsequent adjudications whenever information available to the DNR indicates the need for adjudication as outlined by state statutes.
- F. During Compact Call Years, as determined from the procedures and analysis set forth in Section X below, DNR will regulate and administer surface water in the basin as necessary to ensure Compact compliance. During Compact Call Years, DNR will issue a "Compact Call" on the Republican River at Hardy or Guide Rock to carry out administration for the Compact in a manner consistent with the doctrine of prior appropriation. A "Compact Call" will result in DNR issuing closing notices on all natural flow and storage permits in the basin until such time as DNR in consultation with the MRNRD and other basin NRDs, determines that yearly administration is no longer needed to ensure Compact compliance, pursuant to Section X.

## **IX. Augmentation and Incentive Programs**

The MRNRD and DNR, alone or in cooperation with other parties, intend to establish and implement financial, incentive, and qualified projects as described in *Neb. Rev. Stat.* §§ 2-3226.04 to reduce beneficial consumptive use of water within the MRNRD. These projects include, but are not limited to (1) acquisition by purchase or lease of surface water or ground water rights, including storage water rights with respect to a river or any of its tributaries, (2) acquisition by purchase or lease or the administration and management, pursuant to mutual agreement, of canals and other works, including reservoirs, constructed for irrigation from a river or any of its tributaries, (3) vegetation management, including, but not limited to, the removal of invasive species in or near a river or any of its tributaries, and (4) the augmentation of river flows. As a condition for participation in an incentive program, water users or landowners may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established.

Such incentive programs may include any program authorized by state law and/or federal programs such as the Conservation Reserve Enhancement Program (CREP) and Environmental Quality Incentives Program (EQIP) operated by the U.S. Department of Agriculture.

Projects that have a net effect of reducing consumptive use or increasing stream flow can originate from many sources. The MRNRD will initiate these types of projects when possible and participate in projects sponsored by other groups within their capabilities.

The MRNRD, through the Republican River Basin Coalition, intends to establish and implement river flow enhancement projects.

The MRNRD, alone, and/or through the Republican River Basin Coalition, may use any or all available funding authorities to establish and implement river flow enhancement projects or any other projects that result in an increase to streamflow or a decrease in ground water depletions.

Any reductions in depletions to stream flow generated through supplemental programs, funded entirely by the State of Nebraska and / or the United States Government, including acreage retirement or other incentive programs undertaken through programs available throughout the Republican River Basin will not accrue to any specific NRD, regardless of the location or other conditions of the acreage included in the program or of the location of the effect of such water savings on the river system. Any reductions in depletions to stream flow resulting from any such basin-wide programs shall be considered, in the calculation of each NRD's compliance with the 98-02 depletion percentages. This calculation is outlined in Section X.B.2.c of this IMP.

However, should any NRD establish, fund partially or in total, and implement its own such conservation program, available only for acreage within such district, the accounting of credit for the resulting water savings shall be given exclusively to that NRD.

With agreement of the NRDs involved, the benefits from a supplemental program may be allocated to each NRD based upon their share of the cost of the program.

To the extent possible, it is the intent of the MRNRD to provide compensation to water users that are required to forgo water use to allow the MRNRD and the State to comply with the compact. This may be in addition to or as part of any other MRNRD incentive or retirement program developed to facilitate compact compliance.

## **X. Monitoring and Studies**

The overarching purpose of the Monitoring and Studies Section is to ensure that, in cooperation with the other Republican River Basin NRDs, the DNR and MRNRD maintain compliance with the Republican River Compact as adopted in 1943 and as implemented in accordance with the FSS approved by the United States Supreme Court on May 19, 2003. The objective of the Monitoring and Studies Section of this IMP is to gather and evaluate data, information, and methodologies that could be used to increase understanding of the surface water and hydrologically connected

ground water system; to test the validity of the conclusions and information upon which this IMP is based; and to assist decision makers in properly managing the water resources within the MRNRD and the Republican River Basin as a whole.

On an annual basis the results of monitoring and studies will typically be discussed in a basin-wide meeting which will take place prior to October 31 each year. The purpose of the meeting will be to discuss the preliminary accounting for the current year, the forecast of allowable stream flow depletions for the coming year, and potential management actions as necessary. Table 1 outlines important dates and objectives related to section X.

Table 1. Important Dates and Objectives

Date	Objective
Prior to February 1	MRNRD will provide DNR with meter reading database and GIS coverage maps to be used for the RRCA annual model update.
Prior to RRCA Annual Meeting	DNR will provide MRNRD with their determination of whether the MRNRD was in compliance with the compliance standards based on each previous year's annual Compact accounting.
September - October	Obtain power records and other estimates to determine pumping for T=0 ground water model run
Prior to October 31	Discuss results of monitoring and studies, preliminary accounting for current year, and early forecast of allowable stream flow depletions
Prior to November 15	DNR will provide correspondence to MRNRD notifying them of potential Compact call determination for the coming year (T+1).
November 15 – January 1	MRNRD and DNR will discuss potential management alternatives in the situation that the coming year (T+1) will be a Compact Call Year.
Prior to December 1	Surface water project sponsors may present a plan to DNR to achieve a consumptive use that is less than forecasted consumptive use.
Prior to January 1	Provide final forecast of allowable stream flow depletions and determination of Compact Call Years.
Prior to January 31	MRNRD will provide DNR with details regarding existing management alternatives in lieu of additional ground water regulations or controls to make up for the expected shortfall.

**A. Plan to Gather and Evaluate Data, Information and Methodologies**

As outlined in *Neb. Rev. Stat.* §§ 46-715(2)(e) ongoing programs and new studies or other projects may become a source of information that is used to evaluate the effectiveness of controls adopted by the by the MRNRD and the DNR. The DNR and the MRNRD will jointly pursue and/or evaluate studies, contingent upon budget and

staff resources, to evaluate their potential effectiveness in achieving the goals and objectives of this IMP.

The following potential studies have been identified by the DNR and the MRNRD: (1) crop rotation; (2) vegetation management; (3) irrigation scheduling; (4) a survey of the type and location of irrigation systems throughout the MRNRD; (5) tillage practices; and (6) conjunctive management.

## **B. Monitoring**

Part One of the Monitoring Section describes the tracking and reporting of water use activities within fully appropriated areas of the district by the MRNRD and the DNR. Part Two of the Monitoring Section describes the analyses that will be utilized to annually forecast the projected depletions in each subsequent year. This accounting and the forecast in accordance with *Neb. Rev. Stat. § 46-715(6)* will serve to increase the understanding and test the validity of the conclusions and information upon which this plan is based.

Compact accounting and data exchanges among the states shall be done annually in accordance with the FSS, dated December 15, 2002, including the Republican River Compact Administration (RRCA) Accounting Procedures and Reporting Requirements which are contained in Appendix C thereof. An annual report of the RRCA is published each year. The accounting procedures, reporting requirements, and annual report of the RRCA are independent of this monitoring plan, and therefore not restated within the Monitoring Section of this plan.

### **1. Part One: Tracking and Reporting of Water Use Activities**

The MRNRD and the DNR will make all documents, reports, records, computer runs or other calculations or material necessary to determine compliance with the Compact available to each other, regardless of whether such documents are available under the Nebraska Public Records Act or otherwise, unless such materials are identified as confidential under Nebraska statutes or by a ruling of a court of competent jurisdiction. Specifically, and without limitation, the MRNRD agrees to annually provide GIS coverage maps of all lands irrigated and to meter, record and provide to the DNR its ground water usage records and irrigation system details. The MRNRD shall make copies of district actions taken on variances, offsets, and similar actions available to DNR.

The DNR agrees to make available to the MRNRD all reports and records of the other NRDs necessary to determine their compliance with reductions, as well as all documentation and reports utilized by the DNR to determine the basin's virgin water supplies and Nebraska's compliance with the Compact.

In the event any materials are withheld by either DNR or MRNRD under a claim of statutory confidentiality, the party withholding such materials shall describe the contents of the materials and reasons for the denial in accordance with *Neb. Rev. Stat. § 84-712.04*.

## **2. Part Two: Forecast Procedures**

Each year in compliance with *Neb. Rev. Stat. § 46-715(6)* the DNR in consultation with the Republican River NRDs shall forecast the maximum amount of water that may be available from stream flow for beneficial use in the short term and long term to comply with the Compact. This forecast will be used to assist the DNR and the NRDs in ensuring compliance with the Compact. DNR in conjunction with the NRDs will annually evaluate the forecast procedures and make changes as deemed necessary to reflect management actions being taken in the basin.

In order to complete the forecast, the DNR and MRNRD in conjunction with the other NRDs will review available information and determine if additional controls must be implemented within any district for Compact Call Year compliance. The forecast will be completed prior to January 1 of each year, and will detail the expected shortfall within each district in the event that the coming year is a Compact Call Year. By the following January 31, if necessary, the MRNRD will provide DNR with details regarding existing management alternatives (such as execution of existing surface water leases) in lieu of additional ground water regulations or controls to make up for the expected shortfall.

The procedures developed to complete the forecast will be reviewed annually by the DNR to determine if modifications are necessary. The forecast will project the next year's balance (projected Nebraska allocation plus projected Imported Water Supply less the projected Computed Beneficial Consumptive Use, or CBCU), and the projected water short year and normal year accounting balances. These balances will be utilized in conjunction with other information to determine if a Compact Call Year exists.

The DNR's calculation of allowable ground water depletions for the MRNRD and determination of the necessity for additional controls will utilize additional ground water model information, estimated end-of-year information for reservoir volumes, and estimated stream flow to determine on an annual basis whether additional NRD-specific controls must be implemented.

### **a. Determination of Available Stream flow**

The forecast will typically determine the forecast values for both Guide Rock (water short year accounting point) and Hardy (normal year accounting point). The DNR's forecast values for Guide Rock will include: 1) the one-year balance (projected allocation less the projected CBCU plus the imported water supply); two-year average, and three-year average. The DNR's forecast



values for Hardy will include: 1) the one-year balance (projected allocation less the projected CBCU plus the imported water supply); and 2) the five-year average. These forecasted values will be used in conjunction with sections X.B.2.b, X.B.2.c, X.B.2.d and X.B.2.e to determine when management actions or controls must be implemented. The DNR will calculate forecast values for the next year using the variables in table 2:

Table 2. Information Used for 2010 Forecast of Allowable Depletions.

Year	Item	Information Source
T - 3		Draft; current Accounting Procedures (v. 2005)
T - 2		Draft; current Accounting Procedures (v. 2005)
T - 1		Draft; current Accounting Procedures (v. 2005)
Provisional Data for T = 0 (Current Year or Immediate Past Irrigation Season)	Pumping	Power records estimate
	Surface Water Use	Estimated from preliminary data and previous years values
	Stream flow	Available provisional records end of year estimated
	Evaporation	T - 1 records
Forecast Year	Ground water Consumptive Use and Imported Water Supply Credit	Average values for T = 0 and T - 1
T + 1 (Coming Irrigation Season)	Surface Water Consumptive Use	Colorado: Average of T - 1 and T - 2 use Kansas: + (.1858 x HCL content) + 9,575 Nebraska: - (4x10 <sup>-7</sup> ) x (NE lake volume) <sup>2</sup> + (0.52) x (NE lake volume) - 42,000
	Stream flow	+ (5-year average of state line flows) x 0.41 + 0.23 x HCL content - 27,450

In accordance with *Neb. Rev. Stat. § 46-703(6)*, DNR, NRDs, and surface water project sponsors shall meet prior to the final forecast of allowable stream flow depletions and determination of Compact Call Years. At this meeting the involved parties will discuss the forecasted streamflow and surface water consumptive use. From these discussions, surface water project sponsors may present a plan to

Effective  
November 1, 2010

Middle Republican NRD

DNR to achieve a consumptive use that is less than forecasted consumptive use. Such a plan could avoid a potential Compact Call Year. This plan must be completed and provided to the Department no later than December 1 of the current year (T=0)

The following equations will be utilized to determine the one year balance for the forecast year.

$$\begin{aligned} \text{CWS} &= + \text{SwCBCU}_{\text{NE}} + \text{SwCBCU}_{\text{KS}} + \text{SwCBCU}_{\text{CO}} \\ &+ \text{GwCBCU}_{\text{NE}} + \text{GwCBCU}_{\text{KS}} + \text{GwCBCU}_{\text{CO}} \\ &+ \text{Stateline Stream flow} \end{aligned}$$

$$\text{Nebraska Allocation} = \text{CWS} * 0.5$$

$$\text{CBCU}_{\text{NE}} = \text{SwCBCU}_{\text{NE}} + \text{GwCBCU}_{\text{NE}}$$

IWS = Imported Water Supply Credit

$$\text{Hardy One Year Balance} = \text{Nebraska Allocation} + \text{IWS} - \text{CBCU}_{\text{NE}}$$

$$\text{Guide Rock One Year Balance} = \text{Hardy One Year Balance} * 0.89 - 9040$$

Where:

T-3 = Three years ago from the current year

T-2 = Two years ago from the current year

T-1 = One year ago from the current year

T=0 = The current year

T+1 = The upcoming year that is being forecasted

CWS = Computed Water Supply

GW CBCU<sub>NE, KS, CO</sub> = Ground Water Computed Beneficial Consumptive Use for each respective state

SW CBCU<sub>NE, KS, CO</sub> = Surface Water Computed Beneficial Consumptive Use for each respective state

Nebraska Allocation = CWS x 0.5: The amount of water the State of Nebraska is allowed to use over one year

Balance = The sum of Nebraska's Allocation, plus the Nebraska Imported Water Supply, less Nebraska's Computed Beneficial Consumptive Use

The one year balance for normal year accounting (Hardy One Year Balance) and water short year accounting (Guide Rock One Year Balance) will be utilized to project the two-year and three-year average balances above Guide Rock and the five-year average balance above Hardy.

**b. Compact Call Year Evaluation**

This section of the monitoring plan specifies the process that will be completed by the DNR to determine the Compact Call Years, as detailed in Attachment 1, Republican River Water Supply Evaluation and Required Actions Flowchart. This evaluation takes into account reservoir content and recent balances above Guide Rock and Hardy and the annual forecast as described above in Section X.B.2.a. This process will be completed and provided to the MRNRD by DNR prior to January 1 of each year.

**Checklist A. Water short year Test**

- 1) Is the forecast projection for the coming year's irrigation supply less than 119 kAF?
  - a. Yes. Proceed to Checklist B.
  - b. No. Proceed to Checklist C.

**Checklist B. Water short year**

- 1) Is the current year's balance ( $T = 0$ ) above Guide Rock sufficient to offset the dry year forecast for next year's balance above Guide Rock minus 10 kAF<sup>1</sup>?
  - a. Yes. Proceed to Checklist D.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section X.B.2.c. of this IMP.

Note: If it is beneficial to utilize the alternative water short year provisions from the FSS (the previous two years have a greater balance than last year alone), and An alternative water short year plan has been approved by the RRCA, then the two-year balance (for  $T = 0$ , the current year, and the prior year,  $T - 1$ ) will be substituted for the current year's balance in Checklist B.

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<sup>1</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 5kAF. For any remaining consecutive Compact Call Years, it will be reduced to zero.

### **Checklist C. Early Warning System for Water short year Compliance**

- 1) When Harlan County Lake declines from one year to the next, the December end-of-month (EOM) content is generally about 84% of what it was last year. A December EOM of 246 kAF provides a high level of confidence that the coming year (T+1) will not be water short. Based on the current year's (T=0) Harlan County Lake December EOM content, compute a dry-year projection for next year (T+1) based on this relationship. Is the value greater than 246 kAF?
  - a. Yes. Proceed to Checklist D.
  - b. No. Advance to question 2.
- 2) Is the dry year forecast for next year's (T+1) balance above Guide Rock greater than zero?
  - a. Yes. Proceed to Checklist D.
  - b. No. Advance to question 3.
- 3) Is the current year's balance (T = 0) above Guide Rock sufficient to offset the dry year forecast for next year's balance (T + 1) above Guide Rock minus 10 kAF<sup>2</sup>?
  - a. Yes. Proceed to Checklist D.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section X.B.2.c. of this IMP.

### **Checklist D. Normal Year Administration**

- 1) Will the forecast for next year (T + 1) result in a 5-year average at Hardy that is greater than 10 kAF?
  - a. Yes. Analyze long term trends and additional adjustments in accordance to Section X.B.2.e.
  - b. No. Advance to question 2.
- 2) Will both the forecast for next year result in a 5 year average at Hardy (T – 3, T – 2, T – 1, T = 0, and T + 1) that is greater than zero and the average balance at Hardy of the most recent four years (T – 2, T – 1, T = 0, and T + 1) be greater than zero?
  - a. Yes. Analyze long term trends and additional adjustments in accordance to Section X.B.2.e.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section X.B.2.c. of this IMP.

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<sup>2</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 5kAF. For any remaining consecutive Compact Call Years, it will be reduced to zero.

**c. Calculation of Allowable Ground water Depletions for the MRNRD and Determining the necessity of Additional Controls**

This section of the monitoring plan specifies the calculations which will be completed by the DNR to determine the allowable ground water depletions for the MRNRD in any Compact Call Year. These procedures will be utilized to indicate when additional controls must be implemented by the MRNRD and DNR to ensure compliance with this IMP in the event that the DNR's forecast, provided prior to January 1 of each year, indicates a Compact Call Year. These procedures will incorporate information provided by the MRNRD (contracts for water leasing, augmentation, etc.) to the DNR by January 31 of each year following a forecast that indicates a Compact Call Year. The procedures for determining the allowable ground water depletion for the MRNRD are as follows.

The Allowable ground water depletion for the MRNRD =  
(Nebraska Allocation + IWS – SWCBCU<sub>NE</sub> – Other NRD CBCU) \* 0.30

Where:

Nebraska Allocation = Nebraska available water supply under the Compact

IWS = Imported Water Supply credit

SWCBCU<sub>NE</sub> = The surface water consumptive use by Nebraska, includes net evaporative losses

Other NRD CBCU = The GWCBCU<sub>NE</sub> calculated for the South Platte NRD, Twin Platte NRD, Tri-Basin NRD, Central Platte NRD, and Little Blue NRD

The DNR will utilize information provided by the MRNRD by January 31, to evaluate the following.

**Step 1. MRNRD Estimated Ground water Depletions**

Ground water depletions for the MRNRD will be based on the previous 2-year average (as described in table 2 above), unless such plan provided by the MRNRD indicates that additional restrictions on groundwater pumping will be imposed. If the additional restrictions would cause the pumping to be less than the previous two year average then the lower estimate will be used. In cases where that year's allocation will be less the MRNRD will provide the DNR a map indicating the geographic area subject to the allocation for that year and the maximum allocation available. The DNR will utilize the information provided by the MRNRD and represent such information in the RRCA GWM.

Step 2. Potential yield from MRNRD surface water leases/agreements, augmentation, etc.

The DNR will determine the potential yield from any surface water lease/agreement, augmentation, etc. entered into or provided by the MRNRD. In the event that augmentation is utilized, procedures for determining the project yield must have been approved by the RRCA. This potential yield will be incorporated as NRD management actions in section X.B.2.d.

If a Compact Call Year is reached as a result of checklist B1 or C3 the final step to determine if additional ground water and surface water controls (refer to Section VII.B.1. and VIII.F of this IMP) must be implemented is as follows.

Allowable ground water depletions for MRNRD (as determined above) - Forecasted MRNRD's portion of GWCBCU<sub>NE</sub> (Step 1) + Potential yield from MRNRD surface water leases/agreements, augmentation, etc. (Step 2) + Current Year's Balance (T = 0) – 3333<sup>3</sup>.

If the resulting balance is greater than or equal to negative one hundred (-100) ac-ft, no additional ground water and surface water controls will be implemented.

If the resulting balance is less than negative one hundred (-100) ac-ft, the additional ground water and surface water controls (refer to Section VII.B.1. and VIII.F of this IMP) must be implemented. This potential yield will be incorporated as NRD management actions in section X.B.2.d.

Note: If it is beneficial to utilize the alternative water short year provisions from the FSS (the previous two years have a greater balance than last year alone), and an alternative water short year plan has been approved by the RRCA, then the two-year balance (for T = 0, the current year, and the prior year, T – 1) will be substituted for the current year's balance in Checklist B.

If a Compact Call Year is reached as a result of checklist D2 the final step to determine if additional ground water and surface water controls (refer to Section VII.B.1. and VIII.F of this IMP) must be implemented is as follows.

Allowable ground water depletions for MRNRD (as determined above) - Forecasted MRNRD's portion of GWCBCU<sub>NE</sub> (Step 1) + Potential yield from MRNRD surface water leases/agreements, augmentation, etc. (Step 2) + Previous Years Balances (T = -3, T = -2, T = -1, T = 0 or if applicable + T = -2, T = -1, T = 0)

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<sup>3</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 1667. For any remaining consecutive Compact Call Years, it will be reduced to zero.

If the resulting balance is greater than or equal to negative one hundred (-100) ac-ft, no additional ground water and surface water controls will be implemented.

If the resulting balance is negative, the additional ground water and surface water controls (refer to Section VII.B.1. and VIII.F of this IMP) must be implemented. This potential yield will be incorporated as NRD management actions in section X.B.2.d.

#### **d. Calculation of Compact Call Stream flow Volume**

This section of the monitoring plan specifies the calculation which will be completed by the DNR to determine the stream flow volume necessary to ensure Compact compliance in any Compact Call Year. If DNR's forecast, provided prior to January 1 of each year, indicates a Compact Call Year, then these calculations will be made incorporating information provided by the MRNRD (contracts for water leasing, augmentation, etc.) to the DNR by January 31 of each year following a forecast that indicates a Compact Call Year. The result of these calculations will be utilized to indicate when additional controls must be implemented by the MRNRD and DNR to ensure compliance with this IMP. When such Compact Call Year is indicated, the DNR will implement additional surface water controls (Section VIII.F of this IMP). Criteria that will be used to determine when administration for the "Compact Call" is no longer necessary will be based on ensuring sufficient stream flow volumes have been achieved at the compliance point. Determination of sufficient stream flow volumes to ensure Compact compliance will be determined through the following procedures.

Compact Call Stream flow Volume = Forecasted Stream flow + NRD Management Actions + Surface Water Curtailment Benefit

Where:

Forecasted Stream flow = Stream flow for T+1; (5-year average of state line flows) x 0.41 + 0.23 x HCL content - 27,450

NRD Management Actions = Actions taken by the MRNRD and/or other basin NRDs to enhance stream flow. These actions may include surface water or ground water leases, augmentation, or curtailment.

Surface Water Curtailment Benefit = Actions taken by DNR to ensure compact compliance in the event that Basin NRD Management Actions are not sufficient to overcome the projected negative balance.

**e. Additional adjustments related to long-term trends**

The DNR and MRNRD in conjunction with the other basin NRDs will annually meet to consult to determine if additional reductions from the 98-02 pumping volumes may be warranted. Through this consultation, the DNR and MRNRD will review expected long term (5-20 years) increases in depletions to stream flow and discuss potential mitigation measures that may be necessary.

**f. Harlan County Lake Operations**

In the event that operations of Harlan County Lake are not in accordance with Appendix K of the Final Settlement Stipulation, the DNR will work in consultation with the NRDs to modify Sections VII, VIII, and X of this IMP until normal operations resume.

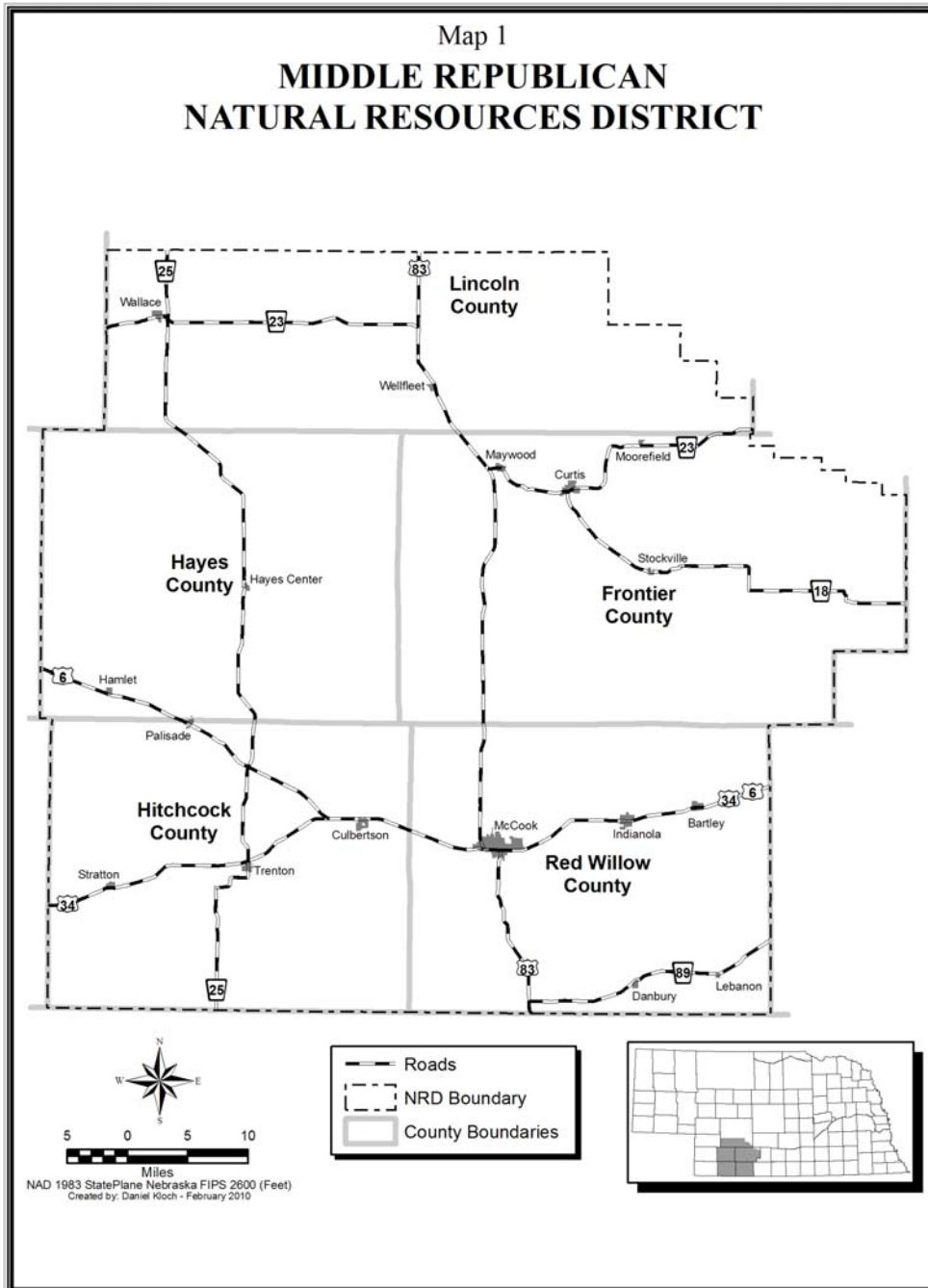
**XI. Information Considered**

Information used in the preparation and to be used in the implementation of this IMP can be found in:

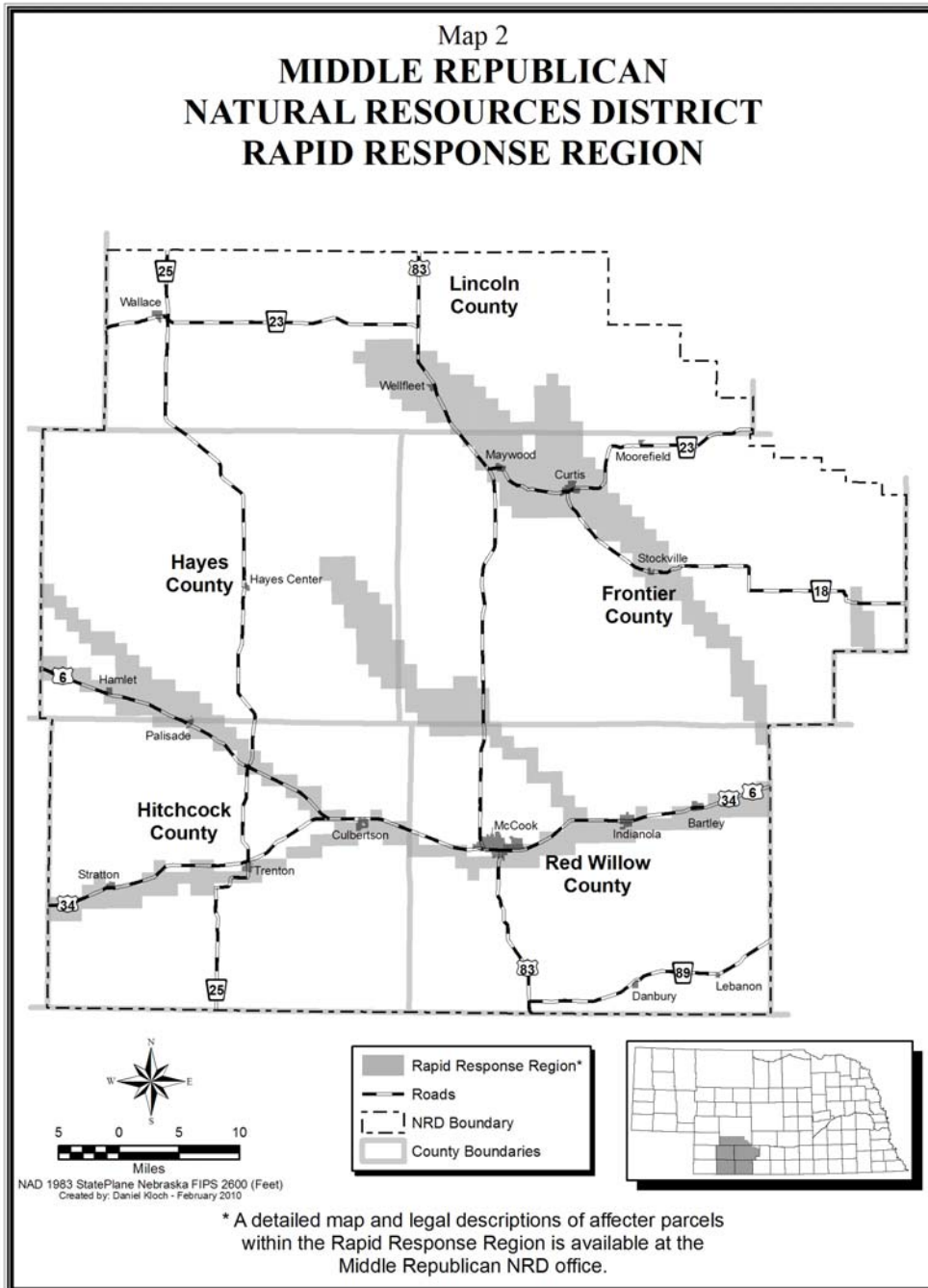
- Simulation runs of the Republican River Compact Administration Ground Water Model,
- Data tables of the Final Settlement Stipulation for the Republican River Compact,
- Chapters 2 and 3 of the 1994 Middle Republican NRD Ground Water Management Plan,
- Arbitrator's Final Decision, Karl Dreher, June 30, 2009, and
- Additional data on file with the MRNRD and the DNR.



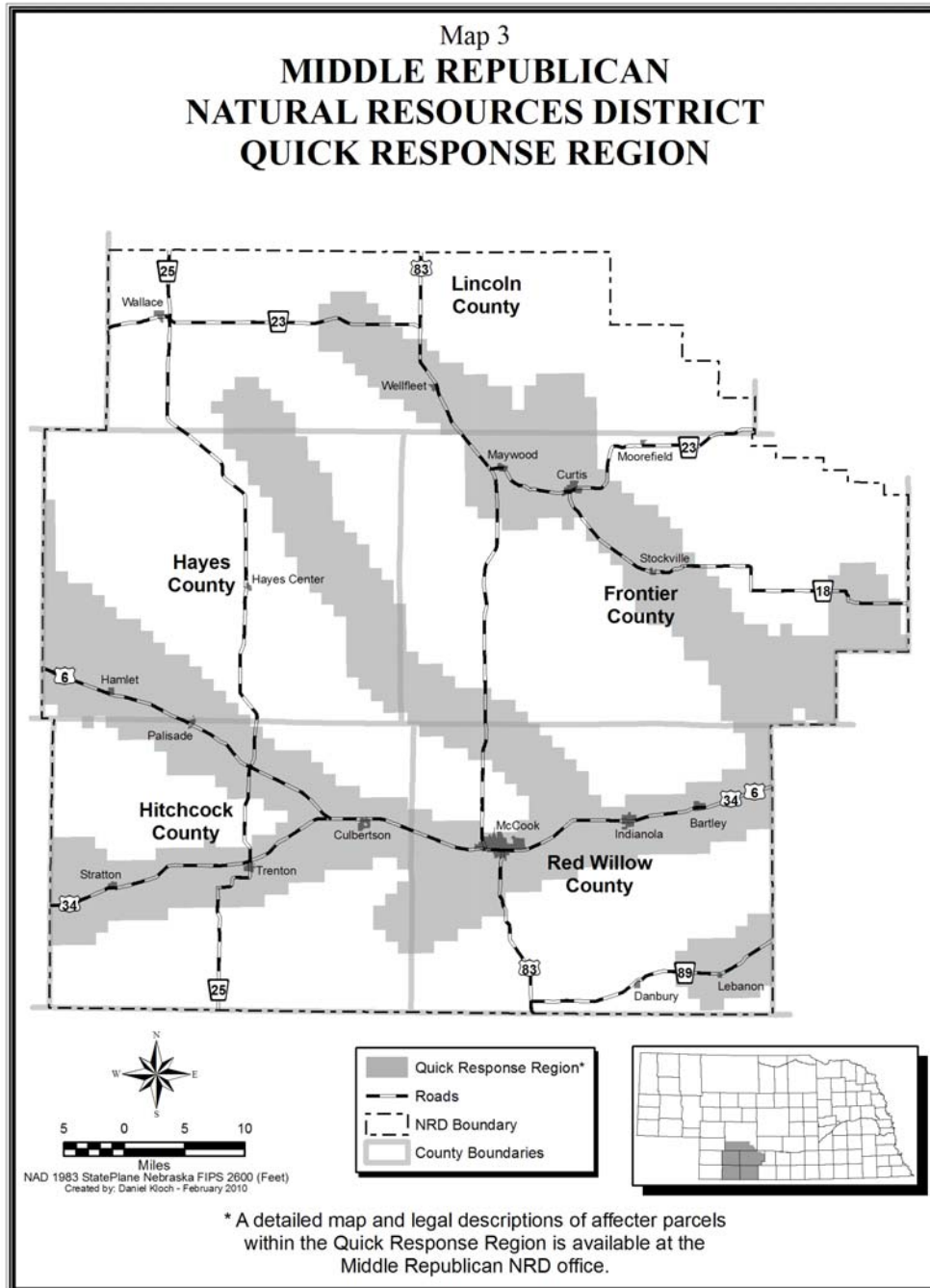
MAP 1. Middle Republican Natural Resource District



MAP 2. Middle Republican Natural Resource District Rapid Response Region

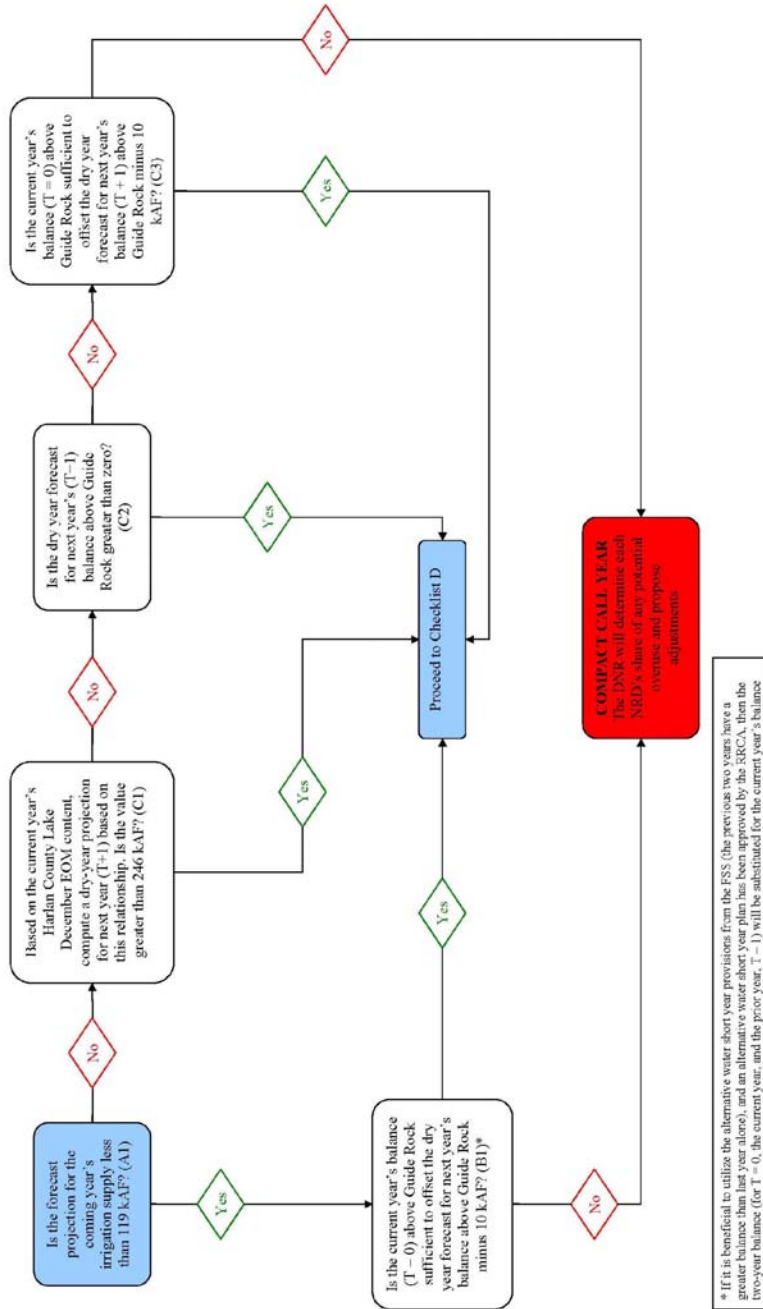


MAP 3. Middle Republican Natural Resource District Quick Response Region



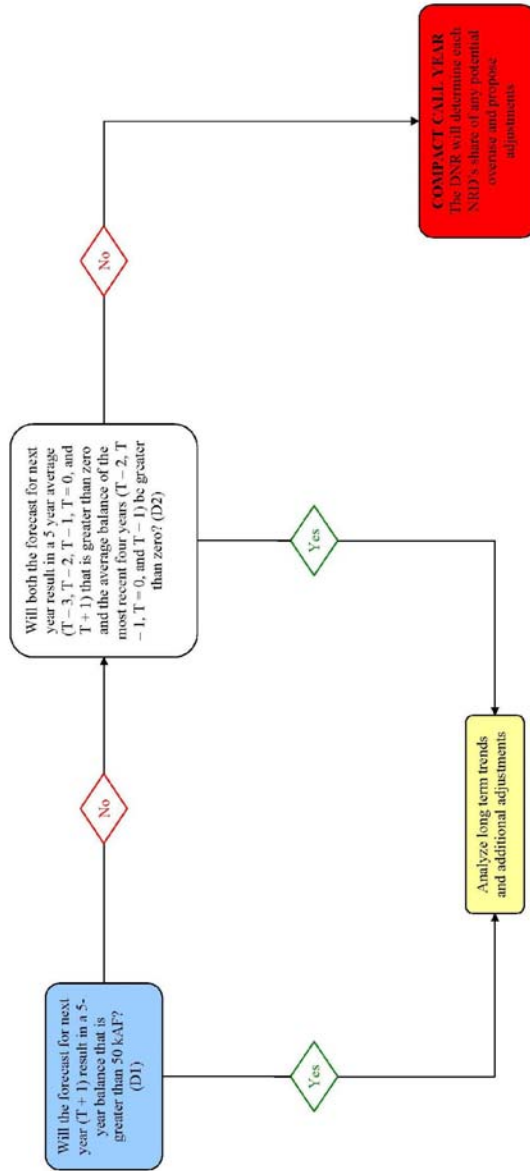
ATTACHMENT 1. Republican River Water Supply Evaluation and Required Actions

**Republican River Water Supply Evaluation and Required Actions  
Water Short Year Administration—Checklists A, B, and C**



August 5, 2010

Republican River Water Supply Evaluation and Required Actions  
**Normal Year Administration — Checklist D**



August 5, 2010

**UPPER  
REPUBLICAN  
NATURAL RESOURCES  
DISTRICT**

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**INTEGRATED  
MANAGEMENT PLAN  
(IMP)**

**NOVEMBER 1, 2010**

INTEGRATED MANAGEMENT PLAN  
Jointly Developed by the  
DEPARTMENT OF NATURAL RESOURCES  
and the  
UPPER REPUBLICAN NATURAL RESOURCES DISTRICT

**I. Authority**

This Integrated Management Plan (IMP) was prepared by the Board of Directors for the Upper Republican Natural Resources District (URNRD) and the Nebraska Department of Natural Resources (DNR) in accordance with the Nebraska Ground water Management and Protection Act, *Neb. Rev. Stat.* §§ 46-701 to 46-754 (Cum. Supp. 2008).

**II. Background**

Commencing in 1978, the URNRD has adopted and enforced rules and regulations for the purpose of managing the ground water resources within the URNRD. On April 11, 2003, effective May 8, 2003, the URNRD, pursuant to applicable statutory rulemaking procedures and *Neb. Rev. Stat.* § 46-739 (Cum. Supp. 2008), adopted the *State of Nebraska Upper Republican Natural Resources District Amendments to Rules and Regulations for Ground water Control – Order No. 26* and the *Upper Republican Natural Resources District Technical Manual of Policies and Procedures TM-26* (the “URNRD rules” or “the rules”). In the regular meeting, on July 6, 2004, the URNRD voted to extend Order No. 26 until September 1, 2005. Rule 9A of the Rules provides for a basic allocation of ground water to certified irrigated acres within the URNRD of 72.5 acre-inches for the five (5) year period between January 1, 2003 and December 31, 2007, an annualized allocation of 14.5 acre-inches. Since their adoption, the Rules have prohibited additional allocations for ground water use and additional well permits, except under limited circumstances. In addition, among other things, the rules continued and recodified the URNRD’s practice of allowing ground water users to carryforward the unused portion of their allocation, together with any remaining unused portions of allocations from previous years, into succeeding allocation periods and permitted the URNRD to approve pooling contracts, both in accordance with the URNRD rules.

In 1943 the States of Colorado, Kansas and Nebraska entered into the Republican River Compact (the “Compact”) with the approval of the United States Congress. The Compact provides for the allocation of the “virgin water supply” of the Republican River Basin (the “basin”) between the three states. Following several years of dispute about Nebraska’s consumptive use of water within the basin, Kansas filed an original action in the United States Supreme Court against the States of Nebraska and Colorado in 1998, seeking, among other things, to include ground water in the calculation of the virgin water supply and consumptive use. The United States Supreme Court appointed a Special Master who recommended that the depletions to stream flow from the use of ground water must be included in the virgin water supply and be part of the calculation of each state’s beneficial consumptive use. The United States Supreme Court adopted the Special Master’s recommendation. Subsequent to this determination, the states entered into a Settlement

Agreement resolving the remaining issues in the case. The Settlement Agreement was approved by the United States Supreme Court on May 19, 2003.

Both prior and subsequent to the approval of the Settlement Agreement, the DNR conducted and participated in several meetings with the URNRD, including several public meetings. During the course of those meetings the DNR explained, in order for the State of Nebraska to achieve and maintain compliance with the terms of the Settlement Agreement, it would be necessary to (1) continue the moratorium on new surface water appropriations and new ground water wells, (2) reduce all ground water pumpage from historic levels across the entire basin and (3) further reduce ground water pumping needed to comply with the Compact in water short years, to be accomplished to the extent possible through the use of incentive programs to reduce consumptive use of water. Ground water within the basin is regulated by four Natural Resource Districts: the URNRD, the Middle Republican Natural Resources District (MRNRD) and the Lower Republican Natural Resources District (LRNRD) and the Tri-Basin Natural Resources District (TBNRD) (collectively hereinafter the NRDs). Similar discussions were held between the DNR and each of the NRDs regarding the need (1) to accurately measure actual ground water pumpage and surface water diversions throughout the basin and within each NRD, (2) for the TBNRD to maintain, at sufficient levels to offset depletions to the Republican River caused by ground water pumping within the Republican River Compact area within the TBNRD, the Compact Imported Water Supply that Nebraska receives because of discharges from the “ground water mound”; and, 3) for each of the NRDs other than the TBNRD to reduce its ground water pumping from their 1998-2002 baseline pumping volumes, as defined below.

Since 1978, with adoption of its Order #1, the URNRD has required the metering, data collection and reporting of ground water use, resulting in actual pumping and use data, and has imposed allocations and regulation on ground water users within the URNRD, while the use of wells in the MRNRD and LRNRD were neither reported nor regulated during the same period. In order to estimate pumping in the MRNRD and LRNRD, other methods based on hours of operation using electrical power information and individual pumping rates were used. The DNR has determined the following pumping volumes for the period 1998-2002: 531,763 acre-feet for the URNRD, 309,479 acre-feet for the MRNRD and 242,289 acre-feet for the LRNRD. These pumping volumes are used throughout this IMP and are referenced as the “1998-2002 baseline pumping volumes.” DNR, through the use of the Republican River Compact Administration Ground water Model, has also determined each NRD’s depletions to stream flow for the period 1998-2002 (“1998-2002 baseline depletion”): 74,161 acre-feet for the URNRD, 52,168 acre-feet for the MRNRD and 43,954 acre-feet for the LRNRD. Those depletion numbers have resulted in the following depletion proportions: 44% for the URNRD, 30% for the MRNRD and 26% for the LRNRD. These depletion proportions are used throughout this IMP and are referenced as the “1998-2002 baseline depletion proportions.” The percentage of allowable ground water depletions for each Republican River NRD were based on the proportion of the average ground water depletions caused by ground water pumping within each district that occurred during the base-line period from 1998-2002 as determined by model runs of the Republican River Compact Administration Groundwater Model with ground water pumping in each district alternated, turned off and then turned on.



The URNRD and the DNR adopted an IMP on May 3<sup>rd</sup>, 2005, that contained ground water rules and regulations for the 2005-2007 period. The IMP provided for a ground water allocation of 13.5 inches per certified acre, continued the pooling of allocations, and the carryforward of unused allocations, among other things. The goal of the 2005 IMP was to reduce water use by 5% from the 1998-2002 baseline. The IMP was updated and revised for 2007 – 2012, with a goal of reducing water use by twenty percent (20%) from the 1998-2002 baseline.

Since that time, efforts have been taken to implement or conduct incentive programs, studies, and research to further our understanding and ability to comply with the Republican River Compact and Settlement. Although the URNRD's allowable depletions to stream flow are limited to 44% of Nebraska's allowable depletions, there were no details in the plan to describe how this would be accomplished. In 2008 Colorado, Kansas, and Nebraska entered into dispute resolution regarding a number of issues, including future compliance. In June 2009 the arbitrator issued a finding that the URNRD IMP may be adequate during years with average and above-average precipitation, but since water-short year measures were not specifically identified, the plan may not be adequate during multiple dry years, an issue addressed in this IMP

The URNRD and the DNR wish to adopt and implement a revised IMP for the regulation of water resources within the district as required by the laws of the State of Nebraska.

The URNRD has agreed to meet its responsibility under *Neb. Rev. Stat.* §46-715, including meeting the obligations under the Settlement Agreement, by adopting revised rules to implement the IMP with regulations and other augmentation programs sufficient to reduce the URNRD's depletions to stream flow to meet the district's proportional share of the requirements of the Republican River Settlement Agreement. To ensure each NRD within the Republican River Basin will be treated equitably, the DNR has agreed not to approve any plan, unless the plan would restrict the use of water by each NRD to within the allocation granted to it as determined by the 1998-2002 baseline pumping volumes and that each NRD shall be assigned its proportionate share of stream flow depletion as calculated by the 1998-2002 baseline depletion percentages.

The URNRD and the DNR agree that the IMP for the District shall keep the NRD's depletions including credits for stream flow augmentation, as determined by the Republican River Compact Administration (RRCA) ground water model (GWM) and in accordance with the RRCA Accounting Procedures to an amount within 44% of the allowable ground water depletions. Based upon its calculations, the DNR believes that at the time this IMP became effective, a 20% reduction in pumping from the 98-02 baseline would be sufficient without additional stream flow augmentation to keep the District's net depletions within the URNRD's 44% share of the allowable ground water depletions during periods of average precipitation throughout the basin. As described in sections below, during periods of low water supply additional reductions from the 98-02 pumping volume may be necessary.

### **III. Definitions**

**A. Allowable Ground water Depletions** - the maximum level of depletions to stream flow from ground water pumping within the Nebraska portion of the Republican River Compact area that can be allowed without exceeding the Compact allocation, in any one year.

**B. Allowable Ground water Depletions for the URNRD** - the depletions to stream flow from ground water pumping in the URNRD that are no greater than 44% of the total allowable ground water depletions.

**C. Allowable Stream flow Depletions** – the maximum amount of stream flow depletion in the Republican River Basin that can be allowed without violating the Compact.

**D. Baseline Depletion Percentages** – the annual mean depletions to stream flow in the Republican River Basin caused by surface water and ground water use in the years 1998-2002 inclusive. The baseline depletions are 74,161 acre feet for the URNRD, 52,168 acre feet for the MRNRD, and 43,954 acre feet for the LRNRD. The percentage depletions assigned to the NRDs are: URNRD, 44%; MRNRD, 30%; and LRNRD, 26%.

**E. Baseline Pumping Volumes** – the annual mean ground water pumping from the period 1998 to 2002. The baseline pumping volumes are 531,763 acre-feet for the URNRD, 309,479 acre-feet for the MRNRD and 242,289 acre-feet for the LRNRD.

**F. Compliance Standard** – the criteria and controls that will be used to determine whether URNRD’s rules, regulations, and other programs are sufficient to meet the goals and objectives of this IMP pertaining to pumping volumes and depletions.

**G. Net Depletions** – an NRD’s ground water depletions less any reduction in stream flow depletions or increase in allocation resulting from stream flow augmentation projects, including surface water leases as determined by the RRCA ground water model and in accordance with the RRCA Accounting Procedures.

**H. Compact Call Year** – A year in which the Department’s forecast procedures outlined in Section X.B.2.b of this IMP indicate the potential for non-compliance if sufficient surface water and ground water controls and/or management actions are not taken. Compact Call Year streamflow administration will be conducted by the Department in a manner consistent with Section X.B.2.d of this IMP. Pursuant to Article VI of the Republican River Compact, diversions into the Courtland Canal for beneficial use in the State of Kansas will not be subject to the Compact Call.

#### **IV. Goals and Objectives**

Pursuant to *Neb. Rev. Stat. § 46-715* (Cum. Supp. 2008) the goals and objectives of this IMP must have as a purpose “sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the river basin ... can be achieved and maintained for both the near term and the long term.” The following goals and objectives are also adopted by the URNRD and the DNR to meet the additional requirements of *Neb. Rev. Stat. §46-715*.

##### **A. Goals:**

1. In cooperation with the State of Nebraska and the other NRDs, maintain compliance with the Compact as adopted in 1943 and as implemented in accordance with the Settlement Agreement approved by the United States Supreme Court on May 19, 2003;
2. Ensure that water users within the URNRD assume their share, but only their share, of the responsibility to maintain compliance with the Compact;
3. Provide the URNRD’s share of compliance responsibility and impact be apportioned within the URNRD in an equitable manner and to the extent possible, minimize the adverse economic, social and environmental consequences arising from compliance activities;
4. Protect ground water users whose water wells are dependent on recharge from the river or stream and the surface water appropriators on such river or stream from stream flow depletions caused by surface water uses and ground water uses begun after the date the river basin was designated as fully appropriated; and
5. Reserve any stream flow available from regulation, incentive programs, and purchased or leased surface water and ground water required to maintain Compact compliance from any use that would negate the benefit of such regulations or programs, to the extent allowed by statute and the surface water controls of this IMP.

##### **B. Objectives:**

1. Prevent the initiation of new or expanded uses of water, with limited exceptions, that increase Nebraska’s computed beneficial consumptive use of water within the URNRD, as required for Compact compliance and by Nebraska law;
2. Ensure administration of surface water appropriations in the Basin is in accordance with the Compact and Nebraska law and the surface water controls of this IMP;
3. Reduce existing ground water use within the URNRD by 20% from the 1998-2002 baseline pumping volumes under average precipitation conditions so that, when combined with stream flow augmentation and incentive programs, the URNRD's ground water depletions are maintained within 44% of Nebraska’s allowable ground water depletions as computed through use of the Republican River Compact Administration Ground water Model;

4. Make such additional reductions in ground water use in Compact Call Years as are necessary, after taking into account any reduction in beneficial consumptive use achieved through basin-wide incentive and stream flow augmentation programs, to achieve a reduction in beneficial consumptive use in the URNRD to 44% of Nebraska's the allowable ground water depletions to stream flow above Guide Rock . Compact Call Years will be determined through the procedures outlined in Section IX of this IMP;
5. Cause the reductions in water use required for Compact compliance to be achieved through a combination of regulatory, incentive, and augmentation programs designed to reduce consumptive use. To the extent funds are available, incentive programs will be made available through targeted incentive programs;
6. Cooperate with the DNR to investigate and explore methods to manage the impact of vegetative growth on stream flow: and
7. Develop a program to provide offsets for new consumptive uses of water so that economic development in the district may continue without producing an overall increase in ground water depletions as a result of new uses.

## **V. Map**

The area subject to this IMP is the geographic area within the boundaries of the URNRD, (see Map 1). The Rapid Response Region is shown as a sub-area within the boundaries of the URNRD, (see Map 2).

## **VI. Ground water Controls**

The URNRD will utilize the ground water controls as provided by *NEB.REV.STAT.* §§ 46-715, 46-739 and 46-740 to form the Ground water Controls component of this IMP. The controls that the DNR and URNRD agree are necessary and shall be continued are: 1) ground water allocations and 2) a moratorium on new water wells and irrigated acres as are required by the Final Settlement Stipulation (FSS). In order to provide the URNRD flexibility in addressing compliance, the URNRD may implement a reduction in irrigated acres and incentive programs targeting acres with a higher stream flow depletion factor as alternatives to URNRD-wide reductions in allocation or irrigated acres. The rules shall be set forth in detail and implemented through the URNRD's Rules and Regulations and the provisions of the URNRD's Rules and Regulations shall be sufficient so as to meet the Compliance Standards and Controls set forth below.

In addition to satisfying the compliance standards, the rules and regulations adopted by the URNRD shall contain provisions that adequately ensure that no new ground water uses initiated after July 14, 2004, will adversely impact surface water appropriators or ground water users whose water wells are dependent upon recharge from the stream or river. If the Compliance Standards are met, the URNRD may amend or modify its rules and regulations without the approval of DNR, except for the rules and regulations

pertaining to the satisfaction of the requirements of *NEB.REV.STAT.* §46-715(4)(b) and 46-715(4)(c).

## **A. Compliance Standards**

### 1. Purpose.

These Compliance Standards are established by DNR and URNRD to assess whether the course of action taken by the URNRD, with the intention of providing their proportionate share of assistance to the State in order for the State to maintain compliance with the FSS and Compact, are sufficient. The action taken by the URNRD shall be evaluated in connection with the action taken by the other NRDs in the Republican River Basin and any other relevant considerations, including the information and data provided by DNR and past action by the NRD.

### 2. Duration

These Compliance Standards shall be used to assess the action taken by the URNRD. On an annual basis the DNR and URNRD shall reexamine the sufficiency and effectiveness of the Compliance Standards to determine if amendments or modifications are necessary to ensure the State's compliance with the FSS and Compact. Nothing contained herein shall prohibit or preclude any amendment or revision, at anytime, by the DNR and URNRD, when such action is necessary. Further, nothing contained in this subsection shall be construed as eliminating the review of the provisions of this IMP as required by *NEB.REV.STAT.* §46-715.

### 3. Standards

The URNRD shall adopt and implement rules and regulations which shall ensure that the following standards are met. The standards shall be effected through the procedure described in Section IX - Monitoring and Studies. Section IX specifies a forecast and resulting actions needed at the Guide Rock compliance point (during Water short years) and at the Hardy compliance point. The procedures for determining whether the compliance standards are met will be based on the RRCA Accounting Procedures, the baseline ground water pumping volumes, and the annual forecast as outlined in Section IX. The standards are:

- a. Provide for a minimum of twenty percent (20%) reduction in pumping from the 98-02 pumping volume using a combination of regulation and supplemental programs so that the average ground water pumping volume is no greater than 425,000 acre-feet over the long term. If precipitation is lower than average for any given year, the ground water pumping volume for that year may be above 425,000 acre-feet.
- b. An additional reduction in 98-02 pumping volumes of five percent (5%) during the next five year period shall be accomplished primarily through voluntary incentive programs and other means as determined by the URNRD. The necessity for continuing this annual reduction shall be reevaluated by DNR and the URNRD in 2015.

- c. The URNRD's net depletions to stream flow shall be no greater than 44% of the allowable ground water depletions determined in accordance with RRCA Accounting Procedures using the RRCA GWM. The average shall be computed using the annual allowable ground water depletion for the same years as are used to determine the averages for Nebraska's compliance with the FSS.

## **B. Other Controls and Management Activities**

The URNRD and the DNR recognize that the required reductions in water consumption could be accomplished by means other than those adopted in this IMP. The IMP and associated controls may need to be amended in the future to implement any such revisions.

1. During Compact Call Years, the URNRD will seek to implement management actions, including but not limited to, surface water leasing, ground water leasing, augmentation, etc., to ensure compliance with this IMP. These management actions will be implemented through the authorities granted by the Nebraska Ground water Management and Protection Act, *Neb. Rev. Stat.* §§ 46-701 to 46-753. Details of such management actions will be provided to DNR by January 31 of each year for evaluation. If such management actions are insufficient to ensure compliance with this IMP, the URNRD will implement additional ground water controls and regulations to make up for any expected shortfall as identified in the annual forecast and described in Section IX of this IMP. Such additional control will include curtailment of ground water pumping within the Rapid Response Region of the URNRD.
2. When necessary to ensure Compact compliance or during Compact Call Years, the URNRD may set a one year pumping allocation within the District. Such allocation will set the maximum pumping level in that year within any region or sub region.
3. Maintain requirement for metering of all ground water uses according to URNRD standards.
4. Provide for transfers according to URNRD and statutory standards.

## **VII. Surface Water Controls - Department of Natural Resources**

The authority for the surface water component of this IMP is *Neb. Rev. Stat.* §§ 46-715 and 46-716 (Reissue 2004). The surface water controls that will be continued and/or begun by the DNR are as follows:

- A. The DNR will do the following additional surface water administration as required by the Settlement Agreement:

1. To provide for regulation of natural flow between Harlan County Lake and Superior-Courtland Diversion Dam, Nebraska will recognize a priority date of February 26, 1948 for Kansas Bostwick Irrigation District, the same priority date as the priority date held by the Nebraska Bostwick Irrigation District's Courtland Canal water right.
  2. When water is needed for diversion at Guide Rock and the projected or actual irrigation supply is less than 130,000 acre-feet of storage available for use from Harlan County Lake as determined by the Bureau of Reclamation using the methodology described in Harlan County Lake Operation Consensus Plan attached as Appendix K to the Settlement Agreement, Nebraska will close junior, and require compliance with senior, natural flow diversions of surface water between Harlan County Lake and Guide Rock.
  3. Nebraska will protect storage water released from Harlan County Lake for delivery at Guide Rock from surface water diversions.
  4. Nebraska, in concert with Kansas and in collaboration with the United States, and in the manner described in Appendix L to the Settlement Agreement, will take actions to minimize the bypass flows at Superior-Courtland Diversion Dam.
- B. Metering of all surface water diversions at the point of diversion from the stream will continue to be required. For surface water canals that are not part of a Bureau of Reclamation project, farm turnouts are required to install and maintain a DNR approved measuring device by the start of the 2005 irrigation season. All measuring devices shall meet the DNR standards for installation, accuracy and maintenance. All appropriators will be monitored to ensure that neither the rate of diversion nor the annual amount diverted exceeds that allowed by the applicable permit or by statute.
- C. The DNR's moratorium on the issuance of new surface water permits was made formal by Order of the Director dated July 14, 2004. Exceptions may be granted by the DNR to the extent permitted by *Neb. Rev. Stat.* § 46-714(3) (Reissue 2004) or to allow issuance of permits for existing reservoirs that currently do not now have such permits. Such reservoirs are limited to those identified through the Settlement Agreement required inventory of reservoirs with over 15 acre-feet capacity.
- D. All proposed transfers of surface water rights shall be subject to the criteria for such transfers as found in *Neb. Rev. Stat.* §§ 46-290 to 46-294.04 (Reissue 2004) and related DNR rules or the criteria found in *Neb. Rev. Stat.* §§ 46-2,120 to 46-2,130 (Reissue 2004) and related DNR rules.
- E. The DNR completed adjudication of individual appropriators in the Republican River Basin upstream of Guide Rock in 2004. The results of that adjudication provided up-to-date records of the number and location of acres irrigated with surface water by such appropriators. Those records shall be used by the DNR to monitor use of surface water and to make sure that unauthorized irrigation is not occurring. The DNR will also be proactive in initiating subsequent

adjudications whenever information available to the DNR indicates the need for adjudication as outlined by state statutes.

F. During Compact Call Years, as determined from the procedures and analysis set forth in Section IX below, DNR will regulate and administer surface water in the basin as necessary to ensure Compact compliance. During Compact Call Years, DNR will issue a “Compact Call” on the Republican River at Hardy or Guide Rock to carry out administration for the Compact in a manner consistent with the doctrine of prior appropriation. A “Compact Call” will result in DNR issuing closing notices on all natural flow and storage permits in the basin until such time as DNR, in consultation with the URNRD and other basin NRDs, determines that yearly administration is no longer needed to ensure Compact compliance, pursuant to Section IX.

### **VIII. Augmentation and Incentive Programs**

The URNRD and the DNR intend to establish and implement financial, incentive, and qualified projects as described in *Neb. Rev. Stat. §§ 2-3226.04, LB 862 (2010), Neb. Rev. Stat. §§ 2-3252* or other incentive programs to reduce beneficial consumptive use of water within the URNRD. These projects include, but are not limited to (1) acquisition by purchase or lease of surface water or ground water rights, including storage water rights with respect to a river or any of its tributaries, (2) acquisition by purchase or lease or the administration and management, pursuant to mutual agreement, of canals and other works, including reservoirs, constructed for irrigation from a river or any of its tributaries, (3) vegetation management, including, but not limited to, the removal of invasive species in or near a river or any of its tributaries, and (4) the augmentation of river flows. As a condition for participation in an incentive program, water users, landowners or the URNRD may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established. Such incentive programs may include, but shall not be limited to, any program authorized by state law and/or federal programs operated by the United States Department of Agriculture.

Any water savings generated through conservation programs, including acreage retirement or other conservation incentive programs undertaken through programs available throughout the Republican River Basin with the use of funds distributed by the State of Nebraska or the United States Government will not accrue to any specific NRD, regardless of the location or other conditions of the acreage included in the program or of the location of the effect of such water savings on the river system. Any water savings resulting from any such basin-wide programs shall be considered in the calculation of each NRD’s depletions allocated to each of the NRDs based upon the 1998-2002 baseline depletion proportions.

However, should any NRD establish, fund, and implement its own such conservation program within its NRD’s boundaries, the accounting of credit for the resulting water savings shall be given exclusively to that NRD. Any credit resulting from an inter-district conservation program shall be credited as agreed to by the NRDs involved. Also, if multiple NRDs cooperate in a stream flow augmentation project, the benefits shall be provided to each NRD based upon their share of the cost of the program.



To the extent possible, it is the intent of the URNRD to provide compensation to water users that are required to forgo water use to allow the URNRD and the State to comply with the compact. This may be in addition to or as part of any other URNRD incentive or retirement program developed to facilitate compact compliance.

**IX. Monitoring and Studies**

The overarching purpose of the Monitoring and Studies Section is to ensure that, in cooperation with the other Republican River Basin NRDs, the DNR and URNRD maintain compliance with the Republican River Compact as adopted in 1943 and as implemented in accordance with the FSS approved by the United States Supreme Court on May 19, 2003. The objective of the Monitoring and Studies Section of this IMP is to gather and evaluate data, information, and methodologies that could be used to increase understanding of the surface water and hydrologically connected ground water system; to test the validity of the conclusions and information upon which this IMP is based; and to assist decision makers in properly managing the water resources within the URNRD and the Republican River Basin as a whole.

On an annual basis the results of monitoring and studies will typically be discussed in a basin-wide meeting which will take place prior to October 31 each year. The purpose of the meeting will be to discuss the preliminary accounting for the current year, the forecast of allowable stream flow depletions for the coming year, and potential management actions as necessary. Table 1 outlines important dates and objectives related to section IX.

Table 1. Important Dates and Objectives

Date	Objective
Prior to February 1	URNRD will provide DNR with meter reading database and GIS coverage maps to be used for the RRCA annual model update.
Prior to RRCA Annual Meeting	DNR will provide URNRD with their determination of whether the URNRD was in compliance with the compliance standards based on each previous year’s annual Compact accounting.
September - October	Obtain power records and other estimates to determine pumping for T=0 ground water model run.
Prior to October 31	Discuss results of monitoring and studies, preliminary accounting for current year, and early forecast of allowable stream flow depletions.
Prior to November 15	DNR will provide correspondence to URNRD notifying them of potential Compact Call Year determination for the coming year (T+1).
November 15 – January 1	URNRD and DNR will discuss potential management alternatives in the situation that the coming year (T+1) will be a Compact Call Year.
Prior to January 1	Provide final forecast of allowable stream flow depletions and determination of Compact Call Years.
Prior to January 31	URNRD will provide DNR with details regarding existing management alternatives in lieu of additional ground water regulations or controls to make up for the expected shortfall.

**A. Plan to Gather and Evaluate Data, Information and Methodologies**

As outlined in *Neb. Rev. Stat.* §§ 46-715(2)(e) ongoing programs and new studies or other projects may become a source of information that is used to evaluate the effectiveness of controls

adopted by the by the URNRD and the DNR. The DNR and the URNRD will jointly pursue and/or evaluate studies, contingent upon budget and staff resources, to evaluate their potential effectiveness in achieving the goals and objectives of this IMP.

The following potential studies have been identified by the DNR and the URNRD: (1) crop rotation; (2) vegetation management; (3) irrigation scheduling; (4) a survey of the type and location of irrigation systems throughout the URNRD; (5) tillage practices; and (6) conjunctive management.

## **B. Monitoring**

Part One of the Monitoring Section describes the tracking and reporting of water use activities within fully appropriated areas of the district by the URNRD and the DNR. Part Two of the Monitoring Section describes the analyses that will be utilized to annually forecast the projected depletions in each subsequent year. This accounting and the forecast in accordance with *Neb. Rev. Stat. § 46-715(6)* will serve to increase the understanding and test the validity of the conclusions and information upon which this plan is based.

Compact accounting and data exchanges among the states shall be done annually in accordance with the FSS, dated December 15, 2002, including the Republican River Compact Administration (RRCA) Accounting Procedures and Reporting Requirements which are contained in Appendix C thereof. An annual report of the RRCA is published each year. The accounting procedures, reporting requirements, and annual report of the RRCA are independent of this monitoring plan, and therefore not restated within the Monitoring Section of this plan.

### **1. Part One: Tracking and Reporting of Water Use Activities**

The URNRD and the DNR will make all documents, reports, records, computer runs or other calculations or material necessary to determine compliance with the Compact available to each other, regardless of whether such documents are available under the Nebraska Public Records Act or otherwise, unless such materials are identified as confidential under Nebraska statutes or by a ruling of a court of competent jurisdiction. Specifically, and without limitation, the URNRD agrees to annually provide GIS coverage maps of all lands irrigated and to meter, record and provide to the DNR its ground water usage records and irrigation system details. The URNRD shall make copies of district actions taken on variances, offsets, and similar actions available to DNR.

The DNR agrees to make available to the URNRD all reports and records of the other NRDs necessary to determine their compliance with reductions, as well as all documentation and reports utilized by the DNR to determine the basin's virgin water supplies and Nebraska's compliance with the Compact.

In the event any materials are withheld by either DNR or URNRD under a claim of statutory confidentiality, the party withholding such materials shall describe the contents of the materials and reasons for the denial in accordance with *Neb. Rev. Stat. § 84-712.04*.

## **2. Part Two: Forecast Procedures**

Each year in compliance with *Neb. Rev. Stat. § 46-715(6)* the DNR in consultation with the Republican River NRDs shall forecast the maximum amount of water that may be available from stream flow for beneficial use in the short term and long term to comply with the Compact. This forecast will be used to assist the DNR and the NRDs in ensuring compliance with the Compact. DNR in conjunction with the NRDs will annually evaluate the forecast procedures and make changes as deemed necessary to reflect management actions being taken in the basin.

In order to complete the forecast, the DNR and URNRD in conjunction with the other NRDs will review available information and determine if additional controls must be implemented within any district for Compact Call Year compliance. The forecast will be completed prior to January 1 of each year, and will detail the expected shortfall within each district in the event that the coming year is a Compact Call Year. By the following January 31, if necessary, the URNRD will provide DNR with details regarding existing management alternatives (such as execution of existing surface water leases) in lieu of additional ground water regulations or controls to make up for the expected shortfall.

The procedures developed to complete the forecast will be reviewed annually by the DNR to determine if modifications are necessary. The forecast will project the next year's balance (projected Nebraska allocation plus projected Imported Water Supply less the projected Computed Beneficial Consumptive Use, or CBCU), and the projected water short year and normal year accounting balances. These balances will be utilized in conjunction with other information to determine if a Compact Call Year exists.

The DNR's calculation of allowable ground water depletions for the URNRD and determination of the necessity for additional controls will utilize additional ground water model information, estimated end-of-year information for reservoir volumes, and estimated stream flow to determine on an annual basis whether additional NRD-specific controls must be implemented.

### **a. Determination of Available Stream Flow**

The forecast will typically determine the forecast values for both Guide Rock (water short year accounting point) and Hardy (normal year accounting point). The DNR's forecast values for Guide Rock will include: 1) the one-year balance (projected allocation less the projected CBCU plus the imported water supply); two-year average, and three-year average. The DNR's forecast values for Hardy will include: 1) the one-year balance (projected allocation less the projected CBCU plus the imported water supply); and 2) the five-year average. These forecasted values will be used in conjunction with sections IX.B.2.b, IX.B.2.c, IX.B.2.d and IX.B.2.e to determine when management actions or controls must be implemented. The DNR will calculate forecast values for the next year using the variables in table 2:

Table 2. Information Used for 2010 Forecast of Allowable Depletions.

Year	Item	Information Source
T - 3		Draft; current Accounting Procedures (v. 2005)
T - 2		Draft; current Accounting Procedures (v. 2005)
T - 1		Draft; current Accounting Procedures (v. 2005)
Provisional Data for T = 0 (Current Year or Immediate Past Irrigation Season)	Pumping	Power records estimate
	Surface Water Use	Estimated from preliminary data and previous years values
	Stream Flow	Available provisional records end of year estimated
	Evaporation	T - 1 records
Forecast Year T + 1 (Coming Irrigation Season)	Ground water Consumptive Use and Imported Water Supply Credit	Average values for T = 0 and T - 1
	Surface Water Consumptive Use	Colorado: Average of T - 1 and T - 2 use Kansas: + (.1858 x HCL content) + 9,575 Nebraska: - (4x10 <sup>-7</sup> ) x (NE lake volume) <sup>2</sup> + (0.52) x (NE lake volume) - 42,000
	Stream Flow	+ (5-year average of state line flows) x 0.41 + 0.23 x HCL content - 27,450

In accordance with *Neb. Rev. Stat. § 46-703(6)*, DNR, NRDs, and surface water project sponsors shall meet prior to the final forecast of allowable stream flow depletions and determination of Compact Call Years. At this meeting the involved parties will discuss the forecasted streamflow and surface water consumptive use. From these discussions, surface water project sponsors may present a plan to DNR to achieve a consumptive use that is less than forecasted consumptive use. Such a plan could allow surface water project sponsors to avoid a potential Compact Call Year. This plan must be completed and provided to the Department no later than December 1 of the current year (T=0).

The following equations will be utilized to determine the one year balance for the forecast year.

$$CWS = + SwCBCU_{NE} + SwCBCU_{KS} + SwCBCU_{CO} + GwCBCU_{NE} + GwCBCU_{KS} + GwCBCU_{CO} + \text{Stateline Stream flow}$$

$$\text{Nebraska Allocation} = CWS * 0.5$$

$$CBCU_{NE} = SwCBCU_{NE} + GwCBCU_{NE}$$

IWS = Imported Water Supply Credit

Hardy One Year Balance = Nebraska Allocation + IWS – CBCU<sub>NE</sub>

Guide Rock One Year Balance = Hardy One Year Balance \* 0.89 – 9040

Where:

T-3 = Three years ago from the current year

T-2 = Two years ago from the current year

T-1 = One year ago from the current year

T=0 = The current year

T+1 = The upcoming year that is being forecasted

CWS = Computed Water Supply

GW CBCU<sub>NE, KS, CO</sub> = Ground water Computed Beneficial Consumptive Use for each respective state

SW CBCU<sub>NE, KS, CO</sub> = Surface Water Computed Beneficial Consumptive Use for each respective state

Nebraska Allocation = CWS x 0.5: The amount of water the State of Nebraska is allowed to use over one year

Balance = The sum of Nebraska's Allocation, plus the Nebraska Imported Water Supply, less Nebraska's Computed Beneficial Consumptive Use

The one year balance for normal year accounting (Hardy One Year Balance) and water short year accounting (Guide Rock One Year Balance) will be utilized to project the two-year and three-year average balances above Guide Rock and the five-year average balance above Hardy.

**b. Compact Call Year Evaluation**

This section of the monitoring plan specifies the process that will be completed by the DNR to determine the Compact Call Years, as detailed in Attachment 1, Republican River Water Supply Evaluation and Required Actions Flowchart. This evaluation takes into account reservoir content and recent balances above Guide Rock and Hardy and the annual forecast as described above in Section IX.B.2.a. This process will be completed and provided to the URNRD by DNR prior to January 1 of each year.

### **Checklist A. Water short year Test**

- 1) Is the forecast projection for the coming year's irrigation supply less than 119 kAF?
  - a. Yes. Proceed to Checklist B.
  - b. No. Proceed to Checklist C.

### **Checklist B. Water short year**

- 1) Is the current year's balance ( $T = 0$ ) above Guide Rock sufficient to offset the dry year forecast for next year's balance above Guide Rock minus 10 kAF<sup>1</sup>?
  - a. Yes. Proceed to Checklist D.
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section IX.B.2.c. of this IMP.

Note: If it is beneficial to utilize the alternative water short year provisions from the FSS (the previous two years have a greater balance than last year alone), and an alternative water short year plan has been approved by the RRCA, then the two-year balance (for  $T = 0$ , the current year, and the prior year,  $T - 1$ ) will be substituted for the current year's balance in Checklist B.

### **Checklist C. Early Warning System for Water short year Compliance**

- 1) When Harlan County Lake declines from one year to the next, the December end-of-month (EOM) content is generally about 84% of what it was last year. A December EOM of 246 kAF provides a high level of confidence that the coming year ( $T+1$ ) will not be water short. Based on the current year's ( $T=0$ ) Harlan County Lake December EOM content, compute a dry-year projection for next year ( $T+1$ ) based on this relationship. Is the value greater than 246 kAF?
  - a. Yes. Proceed to Checklist D.
  - b. No. Advance to question 2.
- 2) Is the dry year forecast for next year's ( $T+1$ ) balance above Guide Rock greater than zero?
  - a. Yes. Proceed to Checklist D.
  - b. No. Advance to question 3.
- 3) Is the current year's balance ( $T = 0$ ) above Guide Rock sufficient to offset the dry year forecast for next year's balance ( $T + 1$ ) above Guide Rock minus 10 kAF<sup>2</sup>?
  - a. Yes. Proceed to Checklist D.

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<sup>1</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 5kAF. For any remaining consecutive Compact Call Years, it will be reduced to zero.

<sup>2</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 5kAF. For any remaining consecutive Compact Call Years, it will be reduced to zero.

- b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section IX.B.2.c. of this IMP.

**Checklist D. Normal Year Administration**

- 1) Will the forecast for next year (T + 1) result in a 5-year balance at Hardy that is greater than 50 kAF?
  - a. Yes. Analyze long term trends and additional adjustments in accordance to Section IX.B.2.e
  - b. No. Advance to question 2.
  
- 2) Will both the forecast for next year result in a 5 year balance at Hardy (T - 3, T - 2, T - 1, T = 0, and T + 1) that is greater than zero and the balance at Hardy of the most recent four years (T - 2, T - 1, T = 0, and T + 1) be greater than zero?
  - a. Yes. Analyze long term trends and additional adjustments in accordance to Section IX.B.2.e
  - b. No. COMPACT CALL YEAR: The DNR will determine each NRD's share of any potential overuse and propose adjustments in accordance to Section IX.B.2.c. of this IMP.

**c. Calculation of Allowable Ground water Depletions for the URNRD and Determining the necessity of Additional Controls**

This section of the monitoring plan specifies the calculations which will be completed by the DNR to determine the allowable ground water depletions for the URNRD in any Compact Call Year. These procedures will be utilized to indicate when additional controls must be implemented by the URNRD and DNR to ensure compliance with this IMP in the event that the DNR's forecast, provided prior to January 1 of each year, indicates a Compact Call Year. These procedures will incorporate information provided by the URNRD (contracts for water leasing, augmentation, etc.) to the DNR by January 31 of each year following a forecast that indicates a Compact Call Year. When such Compact Call Year is indicated, the DNR will implement additional surface water controls (Section VII.F of this IMP). The procedures for determining the allowable ground water depletion for the URNRD are as follows.

The Allowable ground water depletion for the URNRD =  
(Nebraska Allocation + IWS - SWCBCU<sub>NE</sub> - Other NRD CBCU) \* 0.44

Where:

Nebraska Allocation = Nebraska available water supply under the Compact

IWS = Imported Water Supply credit

$SWCBCU_{NE}$  = The surface water consumptive use by Nebraska, includes net evaporative losses

Other NRD CBCU = The  $GWCBCU_{NE}$  calculated for the South Platte NRD, Twin Platte NRD, Tri-Basin NRD, Central Platte NRD, and Little Blue NRD

The DNR will utilize information provided by the URNRD by January 31, to evaluate the following.

#### Step 1. URNRD Estimated Ground water Depletions

Ground water depletions for the URNRD will be based on the previous 2-year average (as described in Table 2 above), unless such plan provided by the URNRD indicates that additional restrictions on groundwater pumping will be imposed. If the additional restrictions would limit the pumping to be less than the previous two year average then the lower estimate will be used. In cases where that year's allocation will be less the URNRD will provide the DNR a map indicating the geographic area subject to the allocation for that year and the maximum allocation available. The DNR will utilize the information provided by the URNRD and represent such information in the RRCA GWM.

#### Step 2. Potential yield from URNRD surface water leases/agreements, augmentation, etc.

The DNR will determine the potential yield from any surface water lease/agreement, augmentation, etc. entered into or provided by the URNRD. In the event that augmentation is utilized, procedures for determining the project yield must have been approved by the RRCA. This potential yield will be incorporated as NRD management actions in section IX.B.2.d.

If a Compact Call Year is reached as a result of checklist B1 or C3 the final step to determine if additional ground water and surface water controls (refer to Section VI.B.1. and VII.F of this IMP) must be implemented is as follows.

Allowable ground water depletions for URNRD (as determined above) - Forecasted URNRD's portion of  $GWCBCU_{NE}$  (Step 1) + Potential yield from URNRD surface water leases/agreements, augmentation, etc. (Step 2) + Current Year's Balance (T = 0) – 3333<sup>3</sup>.

If the resulting balance is greater than or equal to negative one hundred (-100) ac-ft, no additional ground water and surface water controls will be implemented.

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<sup>3</sup> In the event it is the second consecutive Compact Call Year, this value will be reduced to 1667. For any remaining consecutive Compact Call Years, it will be reduced to zero.



If the resulting balance is less than negative one hundred (-100) ac-ft, the additional ground water and surface water controls (refer to Section VI.B.1. and VII.F of this IMP) must be implemented. This potential yield will be incorporated as NRD management actions in section IX.B.2.d.

Note: If it is beneficial to utilize the alternative water short year provisions from the FSS (the previous two years have a greater balance than last year alone), and an alternative water short year plan has been approved by the RRCA, then the two-year balance (for  $T = 0$ , the current year, and the prior year,  $T - 1$ ) will be substituted for the current year's balance in Checklist B.

If a Compact Call Year is reached as a result of checklist D2 the final step to determine if additional ground water and surface water controls (refer to Section VI.B.1. and VII.F of this IMP) must be implemented is as follows.

Allowable ground water depletions for URNRD (as determined above) - Forecasted URNRD's portion of GWCBCU<sub>NE</sub> (Step 1) + Potential yield from URNRD surface water leases/agreements, augmentation, etc. (Step 2) + Previous Years Balances ( $T = -3$ ,  $T = -2$ ,  $T = -1$ ,  $T = 0$  or if applicable +  $T = -2$ ,  $T = -1$ ,  $T = 0$ ).

If the resulting balance is greater than or equal to negative one hundred (-100) ac-ft, no additional ground water and surface water controls will be implemented.

If the resulting balance is less than negative one hundred (-100) ac-ft, the additional ground water and surface water controls (refer to Section VI.B.1. and VII.F of this IMP) must be implemented. This potential yield will be incorporated as NRD management actions in section IX.B.2.d.

#### **d. Calculation of Compact Call Stream flow Volume**

This section of the monitoring plan specifies the calculation which will be completed by the DNR to determine the stream flow volume necessary to ensure Compact compliance in any Compact Call Year. These procedures will be utilized to indicate when additional controls must be implemented by the URNRD and DNR to ensure compliance with this IMP in the event that the DNR's forecast, provided prior to January 1 of each year, indicates a Compact Call Year. These procedures will incorporate information provided by the URNRD (contracts for water leasing, augmentation, etc.) to the DNR by January 31 of each year following a forecast that indicates a Compact Call Year. When such Compact Call Year is indicated, the DNR will implement additional surface water controls (Section VII.F of this IMP). Criteria that will be used to determine when administration for the "Compact Call" is no longer necessary will be based on ensuring sufficient stream flow volumes have been achieved at the compliance point. Determination of sufficient stream flow volumes to ensure Compact compliance will be determined through the following procedures.

Compact Call Stream flow Volume = Forecasted Stream flow + NRD Management Actions + Surface Water Curtailment Benefit

Where:

Forecasted Stream flow = Stream flow for T+1; (5-year average of state line flows) x 0.41 + 0.23 x HCL content – 27,450.

NRD Management Actions = Actions taken by the URNRD and/or other basin NRDs to enhance stream flow. These actions may include surface water or ground water leases, augmentation, or curtailment.

Surface Water Curtailment Benefit = Actions taken by DNR to ensure compact compliance in the event that Basin NRD Management Actions are not sufficient to overcome the projected negative balance.

**e. Additional adjustments related to long-term trends**

The DNR and URNRD in conjunction with the other basin NRDs will annually meet to consult to determine if additional reductions from the 98-02 pumping volumes may be warranted. Through this consultation, the DNR and URNRD will review expected long term (5-20 years) increases in depletions to stream flow and discuss potential mitigation measures that may be necessary.

**f. Harlan County Lake Operations**

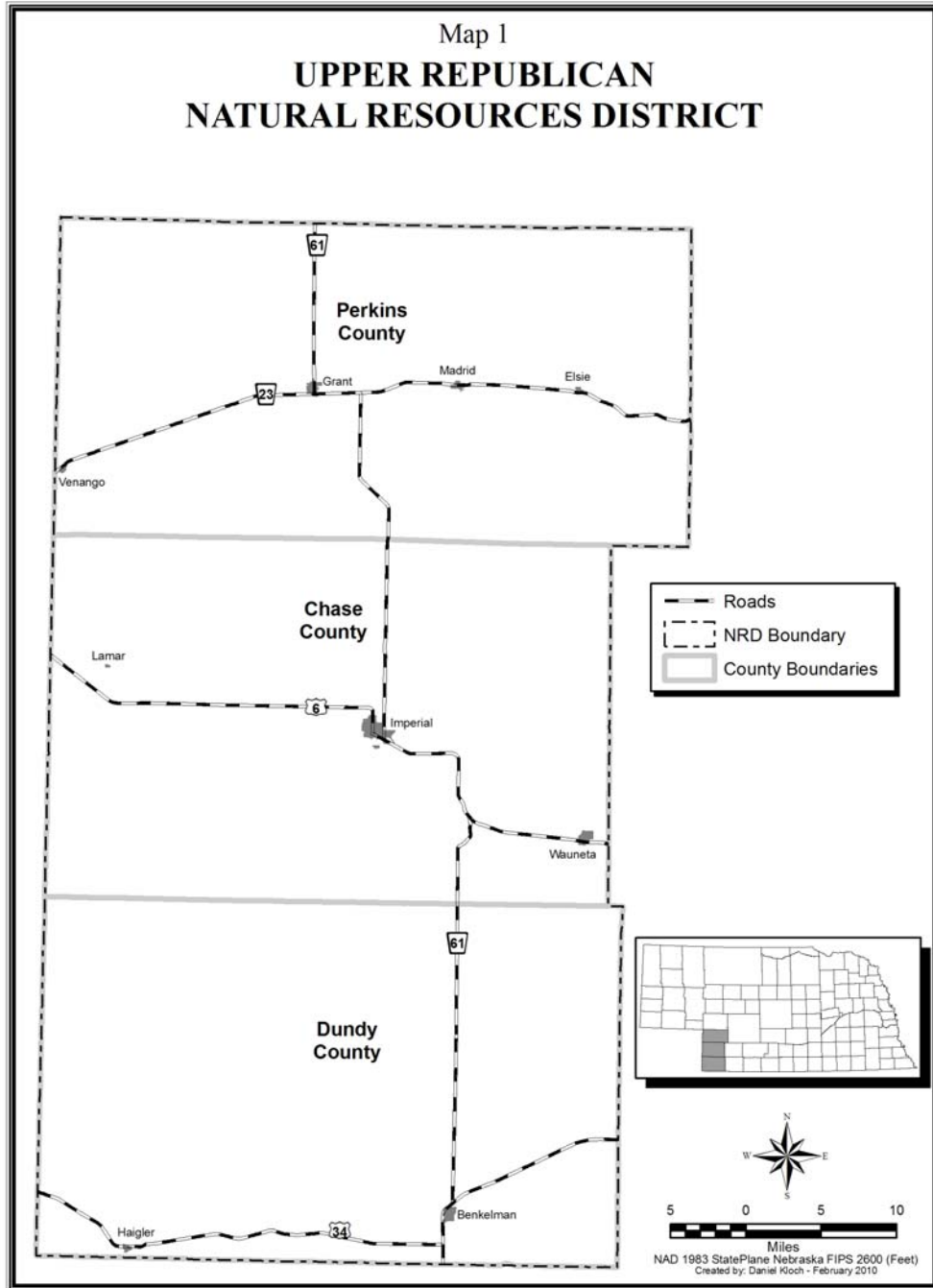
In the event that operations of Harlan County Lake are not in accordance with Appendix K of the Final Settlement Stipulation, the DNR will work in consultation with the NRDs to modify Sections VI, VII, and IX of this IMP until normal operations resume.

**X. INFORMATION CONSIDERED**

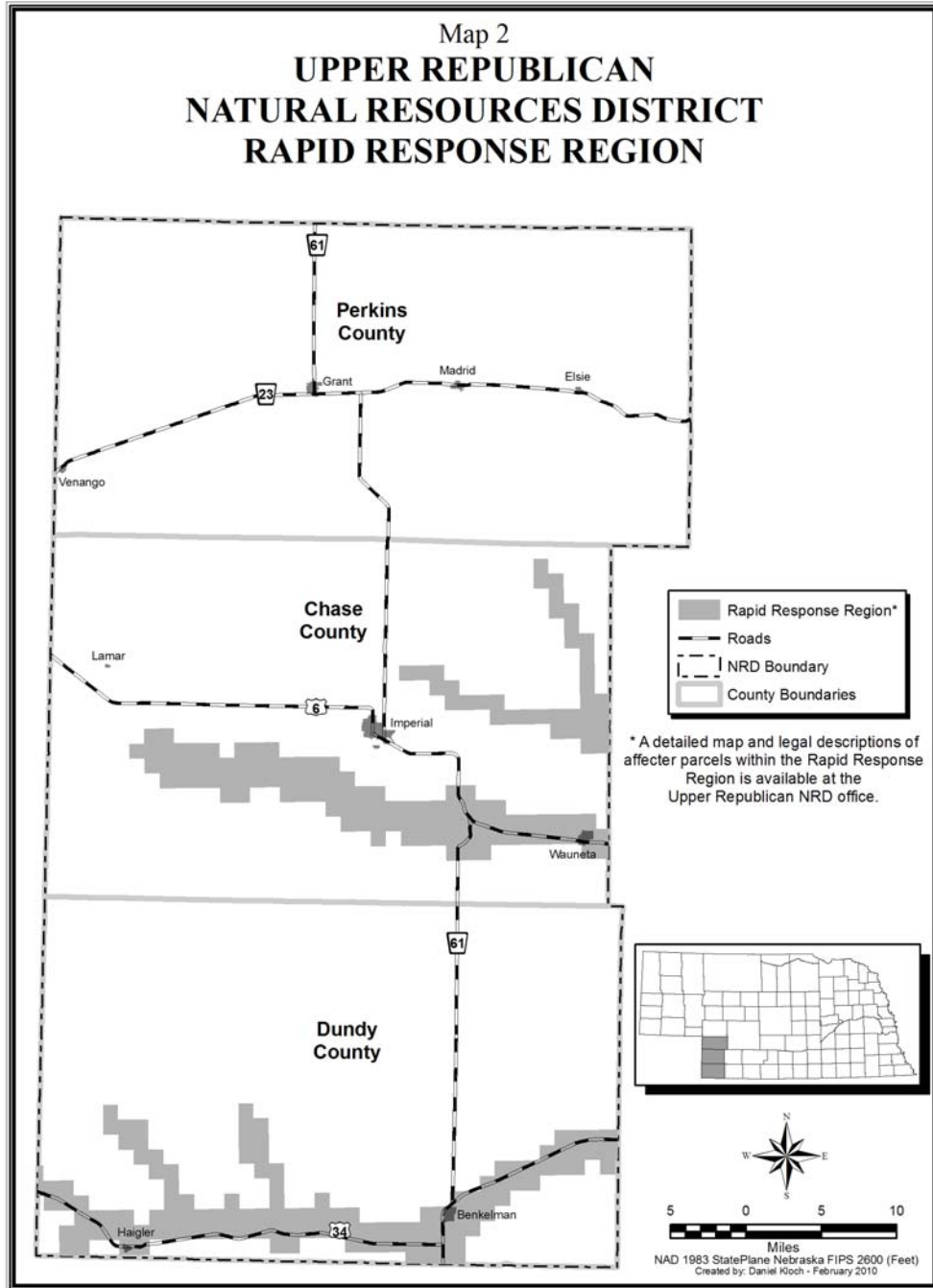
Information used in the preparation and to be used in the implementation of this IMP can be found in:

- Simulation runs of the Republican River Compact Administration Ground water Model,
- The formulae and data compliance tables of the Final Settlement Stipulation for the Compact,
- The URNRD's Rules,
- The URNRD's Ground water Management Plan,
- Arbitrator's Final Decision, Karl Dreher, June 30, 2009, and
- Additional data on file with the URNRD and the DNR.
- Nebraska statutes and case law.

MAP 1. Upper Republican Natural Resource District

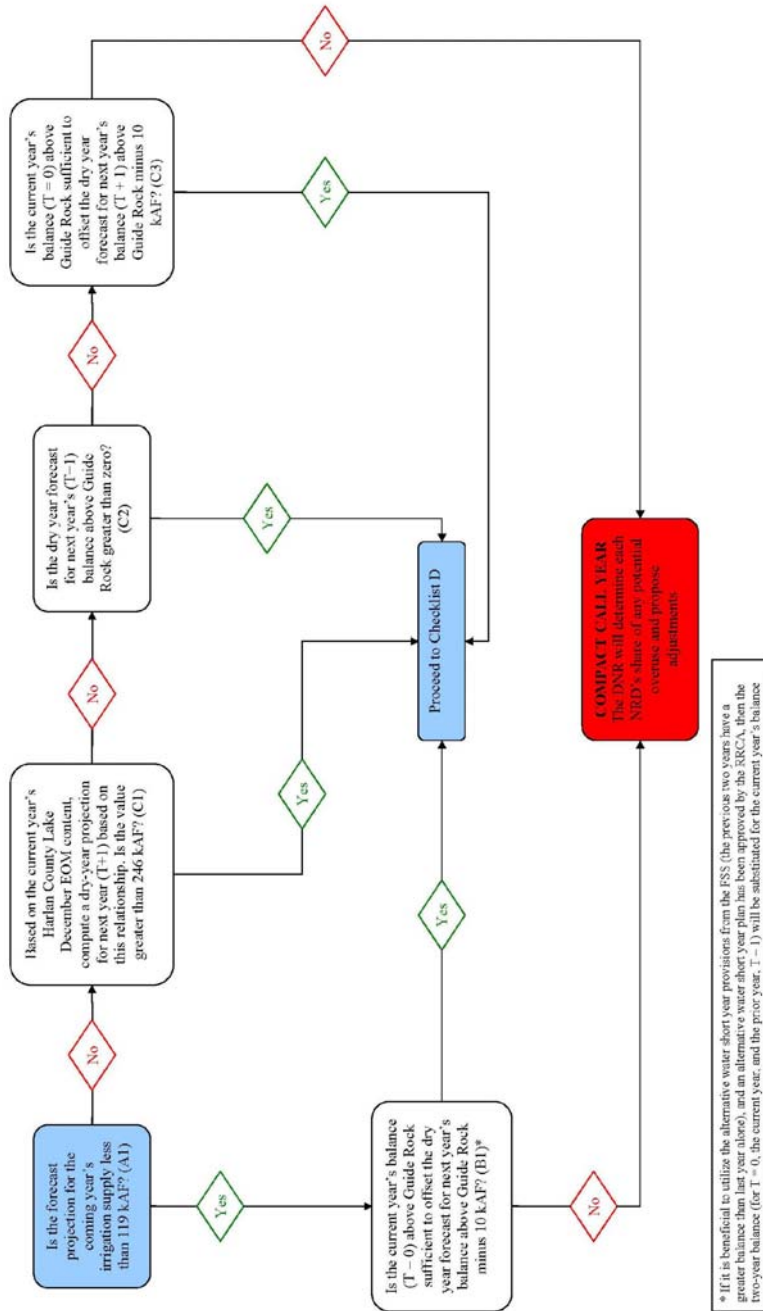


MAP 2. Upper Republican Natural Resource District Rapid Response Region



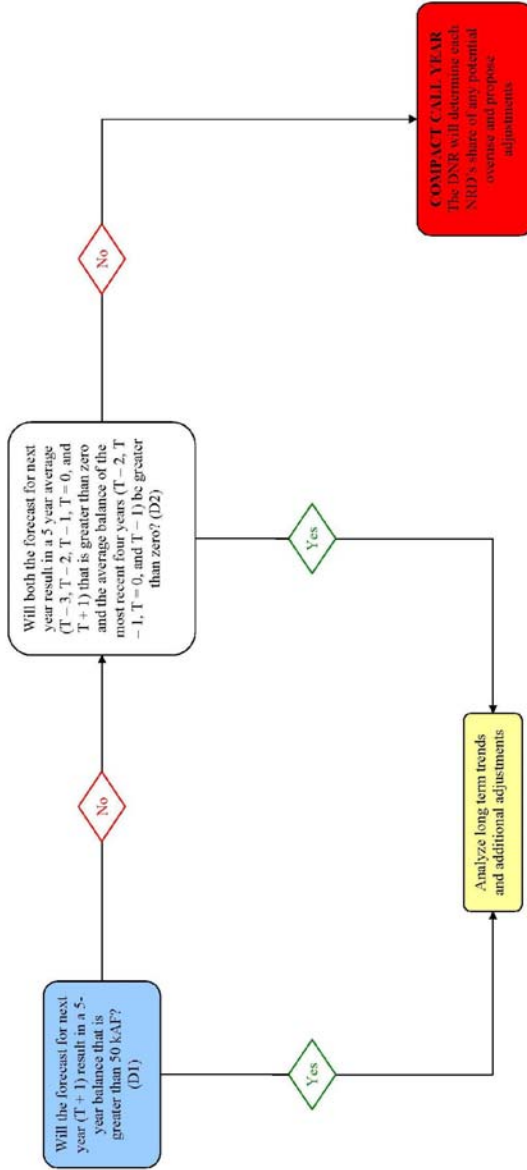
ATTACHMENT 1. Republican River Water Supply Evaluation and Required Actions

**Republican River Water Supply Evaluation and Required Actions  
Water Short Year Administration—Checklists A, B, and C**



August 5, 2010

Republican River Water Supply Evaluation and Required Actions  
Normal Year Administration—Checklist D



**Exhibit I**

**Kansas Letter**

**October 4, 2012**



109 SW 9th Street, 2nd Floor  
Topeka, Kansas 66612-1283

Dale A. Rodman, Secretary  
David W. Barfield, Chief Engineer

phone: (785) 296-3717  
fax: (785) 296-1176  
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Sam Brownback, Governor

October 4, 2012

Brian P. Dunnigan, P.E.  
Nebraska Commissioner  
Republican River Compact Administration  
Nebraska Department of Natural Resources  
301 Centennial Mall South  
PO Box 94676  
Lincoln NE 68509-4676

RE: The State of Nebraska's July 30, 2012 Submittal of an Alternative Water-Short Year Administration Plan to the Republican River Compact Administration

Dear Commissioner Dunnigan:

Kansas has received your letter of July 30, 2012 enclosing the State of Nebraska's submission to the Republican River Compact Administration ("RRCA") of Nebraska's Plan for Reduction of Computed Beneficial Consumptive Uses ("CBCU") under Alternative Water-Short Year Administration ("Plan").

The Plan is submitted pursuant to Appendix M of the Final Settlement Stipulation ("FSS") as approved by the U.S. Supreme Court. Appendix M states:

Each Plan shall indicate the actions which Nebraska would undertake to reduce its Computed Beneficial Consumptive Uses from the base condition and the amount of reduction expected from those actions. A Plan's designed reductions in Computed Beneficial Consumptive Uses shall be evaluated by the RRCA using methods consistent with the RRCA Accounting Procedures and the RRCA Groundwater Model.

FSS, App. M, § 2 (emphasis added).

Section 3 of Appendix M makes clear, and your letter correctly recognizes, that RRCA approval is required of a Plan submitted under Appendix M before Nebraska can elect to implement the Plan.

The actions indicated by Nebraska in its proposed Plan, directly and by reference, may, but do not necessarily, include some or all of the following:



1. Retirement of irrigated acreage
2. Leasing of surface water CBCU
3. Adjustment of allocations for groundwater pumping
4. Augmentation of stream flows
5. Groundwater leasing
6. Curtailment of groundwater pumping within the Rapid Response Regions of the Upper Republican, Middle Republican and Lower Republican NRDs
7. Closure of junior surface water diversions
8. Requirement of compliance with senior surface water diversions
9. Protection of storage water releases from Harlan County Lake for delivery at Guide Rock
10. Efforts to minimize bypass flows at Superior-Courtland Diversion Dam
11. Closure of all natural surface water flow and storage permits in the Basin
12. Other alternative management actions

Plan, ¶ II.A, at 1 (incorporating Nebraska's Integrated Management Planning process).

Nebraska's Plan begins its discussion of the expected reductions by stating, "Nebraska will seek to maximize the utilization of its Compact allocation while ensuring that the planned reductions in CBCU will be sufficient to ensure compliance with the Compact in each year that this Plan is implemented." *Id.*, ¶ II.B at 2. Nebraska also indicates that its actions under the Plan "will vary for each time that it is implemented," and "[f]or each occasion . . . it will be necessary to calculate the expected reduction in CBCU." *Id.*, at 3. Nebraska further states that it will indicate in its April 1 notice to the RRCA "the expected CBCU reduction required for that year (this value will fall within the ranges specified above)." *Ibid.*

Nebraska's Plan is based on its IMPs, and potentially incorporates all of the potential actions under the Compact Call Year provisions of the IMPs. The Plan proposes that the CBCU reduction to be achieved could be as low as zero and as high as 38,515 acre-feet per year. No specific quantifications of CBCU reduction are provided.

The Nebraska Plan diverges widely from the requirements of Appendix M. No commitment to any particular action is made in the Plan. Rather, the Plan refers directly or indirectly to an exceedingly great range of actions suggested by the list set out above. Nebraska merely commits that it "will indicate in its notice to the RRCA (due by April 1) if any alternative management actions will be taken in lieu of groundwater curtailment," *id.*, at 2, and "the expected CBCU reduction required for that year," *id.*, at 3. It is notable that Nebraska does not even commit to provide by August 1, as required by Section 2 of Appendix M, the amount of expected CBCU reduction, but, rather, commits only to provide on April 1 the expected CBCU reduction "required" for that year.

The Nebraska Plan is thus unacceptable at both a substantive and a literal level. If the RRCA does not know the specific actions proposed by Nebraska as of the time of the submittal of its proposal, which must be received no later than August 1, it is impossible for the RRCA to assess the adequacy of the proposed actions or for Nebraska to quantify the CBCU reduction or for the RRCA to check the validity of such quantification.

Brian Dunnigan, P.E.

October 4, 2012

Page 3

Although the current proposal cannot be approved, Kansas is willing to work with the State of Nebraska in the future if Nebraska wishes to develop a plan which conforms to the requirements of Appendix M. I look forward to our discussion at the RRCA Work Session. I suggest we plan to take action on the Plan at the Annual Meeting.

Sincerely,



David W. Barfield, P.E.

Kansas Commissioner

Republican River Compact Administration

cc: Colorado Commissioner Dick Wolfe, P.E.



**Exhibit J**

**Junction City**

**Transcript**

1                                   52ND ANNUAL MEETING OF THE  
2                                   REPUBLICAN RIVER COMPACT ADMINISTRATION  
3  
4

5  
6  
7                                   TUESDAY, OCTOBER 16, 2012  
8                                   7:50 A.M.  
9

10 ORIGINAL  
11

12  
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14                                   The above-entitled meeting was taken at the  
15                                   C.L. Hoover Opera House, 135 West 7th Street,  
16                                   Junction City, Kansas, before Coleen F. Boxberger,  
17                                   Registered Professional Reporter and Certified Court  
18                                   Reporter for the State of Kansas.  
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REPUBLICAN RIVER COMPACT ADMINISTRATION:

For Kansas:

- David Barfield, P.E., Commissioner
- Burke W. Griggs, Esquire
- Christopher M. Grunewald, Esquire
- Scott Ross, P.E.

For Colorado:

- Dick Wolfe, P.E., Commissioner
- Scott Steinbrecher, Esquire
- Michael Sullivan, P.E., Deputy State Engineer
- Peter J. Ampe, Esquire

For Nebraska:

- Brian P. Dunnigan, P.E., Commissioner
- Justin Lavene, Esquire
- Jim Schneider, P.E.
- Tom O'Connor, P.E.



1 introduce those at the front table here. And then  
2 following that we'll just -- we're a small enough  
3 group here we'll -- we'll just go around the room  
4 and ask you to introduce yourself and sort of your  
5 interest in the Republican River Basin, if that's  
6 okay.

7 So with me is -- on my right is Scott Ross.  
8 He is our commissioner for northwest Kansas and our  
9 representative on the engineering committee. And to  
10 my left is Burke Griggs, counsel for myself.

11 MR. WOLFE: Good morning. There we go.  
12 First, I would like to thank Kansas for hosting the  
13 meeting this year in Junction City. Appreciate  
14 that. I'm Dick Wolfe, Colorado State Engineer and  
15 Commissioner for Colorado. To my left is Mike  
16 Sullivan, Deputy State Engineer. And to my far left  
17 is Scott Steinbrecher, Assist Attorney General with  
18 the Colorado Attorney General's Office in our  
19 interstate litigation unit.

20 MR. BARFIELD: Brian?

21 MR. DUNNIGAN: Thank you, Chairman Barfield.  
22 My name is Brian Dunnigan, and I am the Director of  
23 the Nebraska Department of Natural Resources. To my  
24 immediate left is Justin Lavene from the Attorney  
25 General's office. To my right is Jim Schneider,



1 Deputy Director for the Department of Natural  
2 Resources. And to Jim's right is Tom O'Connor, head  
3 of the Eastern Field Offices.

4 MR. BARFIELD: Thank you. Why don't we start  
5 -- Brad, why don't we start with you, and we'll move  
6 around the room.

7 MR. EDGERTON: I'm Brad Edgerton. I'm  
8 manager of the Frenchman-Cambridge Irrigation  
9 District, Cambridge, Nebraska.

10 MR. THOMPSON: Good morning. I'm Aaron  
11 Thompson with the Bureau of Reclamation's  
12 Nebraska/Kansas office. We have projects in all  
13 three states.

14 MR. BARFIELD: Just a second. Are you  
15 getting this?

16 COURT REPORTER: It's very hard to hear.

17 MR. BARFIELD: Can somebody grab the mic and  
18 let's just do a roving mic so we can make a record.

19 MR. SCOTT: Good morning. I'm Craig Scott  
20 with the Bureau of Reclamation out of McCook,  
21 Nebraska. I'm the operations manager for our office  
22 there up in McCook.

23 MR. BRADLEY: Jesse Bradley with the Nebraska  
24 Department of Natural Resources in the Integrated  
25 Water Management Division.

1 MR. KOESTER: Paul Koester, Groundwater  
2 Modeler for the Department of Natural Resources of  
3 Nebraska.

4 MR. KEELER: Dave Keeler with the Division of  
5 Water Resources, Colorado.

6 MR. GUENTHNER: Scott Guenthner. I'm with  
7 the Bureau of Reclamation. I'm Reclamation's  
8 representative on the conservation committee.

9 MR. KOELLIKER: Jim Koelliker, Kansas State  
10 University, retired. I'm with the Conservation  
11 Commission.

12 MR. LAMBRECHT: Jason Lambrecht with the U.S.  
13 Geological Survey, the Nebraska Water Science  
14 Center.

15 MR. PERKINS: Sam Perkins, Kansas Division of  
16 Water Resources.

17 MR. SCHREÜDER: Willem Schreüder with  
18 Principia Mathematica.

19 MR. SABLE: Chris Beightel, Kansas Division  
20 of Water Resources.

21 MR. GRUNEWALD: Chris Grunewald, Assistant  
22 Attorney General, Kansas Attorney General's office.

23 MS. JURICEK: Chelsea Juricek. I'm in the  
24 Stockton Field Office, Kansas Division of Water.

25 MR. ASKREN: I'm Kent Askren with Kansas Farm

1 Bureau.

2 MR. BIERY: Galen Biery, general manager of  
3 the Kansas Rural Water District No. 1. And our  
4 concern is with Milford Reservoir.

5 MR. CLEMENTS: Mike Clements, general manager  
6 of Rural Republic NRD in Alma, Nebraska.

7 MR. SMITH: Dan Smith, manager of Middle  
8 Republic NRD in Curtis, Nebraska.

9 MR. AMPE: Peter Ampe, Hill & Robbins,  
10 counsel for Republican River Water Conservation  
11 District.

12 MR. CAO: Hongsheng Cao, Kansas Division of  
13 Water Resources.

14 MS. DANIEL: Deb Daniel. I'm general manager  
15 of the Republican River Water Conservation District  
16 in Colorado.

17 MR. CORYELL: Dennis Coryell. I'm President  
18 of the Republican River Water Conservation District,  
19 Colorado.

20 MR. DOWELL: Jack Dowell, representative for  
21 RRWCD Board, Colorado.

22 MR. HERMAN: Harlan Herman of Inavale,  
23 Nebraska; farmer and rancher.

24 MR. DELKA: Mike Delka, manager of the  
25 Bostwick Irrigation District in Nebraska.

1 MR. RILEY: Tom Riley with the Flatwater  
2 Group.

3 MR. KRACMAN: David Kracman with the  
4 Flatwater Group.

5 MR. GROFF: Mark Groff, Flatwater Group.

6 MR. WHITE: Doug White, outside counsel for  
7 Nebraska.

8 MR. WILMOTH: Tom Wilmoth, outside counsel  
9 for Nebraska.

10 MR. JOHNSON: Blake Johnson with the Attorney  
11 General's Office in Nebraska.

12 MR. FANNING: Jasper Fanning, Nebraska.

13 MR. JENKINS: Nate Jenkins, Upper Republican  
14 NRD.

15 MR. BARFIELD: Okay. Thank you very much.  
16 Second order of business on the agenda is the  
17 adoption of the agenda. I would entertain any  
18 changes to the agenda.

19 MR. WOLFE: I would just indicate to the  
20 chairman that under Agenda Item 9, I think C through  
21 F at least, and maybe G, are status updates. Is  
22 that correct, based on discussion from yesterday?

23 MR. BARFIELD: Yes, it is. That's my  
24 understanding. Just for those present, yesterday  
25 the Compact Administration held a work session where

1 we had a discussion on a number of items of business  
2 for the administration to sort of -- so that helped  
3 today's meeting go smoother as well. And we did  
4 agree that all of items C through G would be more in  
5 the form of status updates on these various matters  
6 as opposed to items that were -- that would require  
7 action at this particular meeting. So we'll just  
8 note that each of those are status items.

9 MR. WOLFE: Thank you.

10 MR. BARFIELD: Anything else?

11 MR. DUNNIGAN: Chairman Barfield, I would  
12 like to note that on Agenda Item 9-B -- just for  
13 clarification -- had "action" on Nebraska's proposed  
14 plan.

15 MR. BARFIELD: Very good. Okay. All right.  
16 So with the insertion of the word "action" on 9-B,  
17 and "status of" on 9-C through G, we'll adopt the  
18 agenda as --

19 MR. DUNNIGAN: I have one other note for  
20 discussion.

21 MR. BARFIELD: I'm sorry.

22 MR. DUNNIGAN: I believe that on Item 9-A we  
23 might want to take the word "action" off. I believe  
24 that would be discussed and assigned later.

25 MR. BARFIELD: Okay. Okay. Why don't we say

1 "discussion of engineering report and assignments."  
2 Would that be okay?

3 MR. DUNNIGAN: That's great.

4 MR. BARFIELD: So "discussion of engineering  
5 committee report and assignments." And then we can  
6 figure out what to do with it at that juncture. I  
7 guess I should -- so would somebody move adoption of  
8 the adjusted agenda?

9 MR. WOLFE: I move that we approve the  
10 amended agenda.

11 MR. BARFIELD: All right.

12 MR. DUNNIGAN: Second.

13 MR. BARFIELD: All right. Any discussion?

14 (Pause.)

15 MR. BARFIELD: All in favor of approving the  
16 amended agenda say aye.

17 MR. WOLFE: Aye.

18 MR. DUNNIGAN: Aye.

19 MR. BARFIELD: Aye. Any opposed?

20 (Pause.)

21 MR. BARFIELD: All right. Agenda Item 3 is a  
22 discussion on the status of the report and  
23 transcript of the 2011 annual meeting, just to sort  
24 of tie up what we did last year. I guess I'll --  
25 just from our discussion yesterday, I would note

1 that a transcript has been prepared in a draft of  
2 the annual meeting. A summary has also been  
3 prepared by the State of Colorado, which hosted the  
4 meeting yesterday. The states have not completed  
5 their review of those documents at this juncture.

6 And so, as we'll talk about as the meeting  
7 progresses, we anticipate having a special meeting  
8 of this Administration in the relatively near  
9 future. And I think it's our hope to deal with this  
10 item and others that we'll get to subsequently. So  
11 any additional discussion on that?

12 (Pause.)

13 MR. BARFIELD: Okay. Agenda Item 4 is Status  
14 of Previous Annual Special Meeting Reports and  
15 Transcripts. We actually -- again, as was discussed  
16 yesterday in our work session, we've got annual  
17 reports, special meeting reports and transcripts  
18 going back to 2007 that have not been finalized and  
19 approved. Those are in the various states. Some  
20 are very close to being ready to move and others  
21 need more work.

22 Again, I think we committed ourselves last  
23 time to -- or yesterday afternoon to working with  
24 those and seek to have them reviewed and ready to be  
25 acted upon in our special meeting. So unless we

1 need to say more about it at this juncture, I'll  
2 leave it at that.

3 (Pause.)

4 CHAIRMAN BARFIELD: Okay. Very good. Agenda  
5 Item 5 is the opportunity for each of the states to  
6 provide a report of -- of significant items of  
7 interest to the basin and it's administration, which  
8 generally I'll go first and provide a report for  
9 Kansas. 2011; I'll speak first about the 2011  
10 conditions and some of the responses to that that  
11 we've seen in our state, and then the 2012 water  
12 supply conditions and other activities.

13 2011 was a very dry year, as I reported last  
14 year, for the southern half of our state. Very  
15 significant heat, very dry conditions. It created  
16 some extraordinary demands for water and led to  
17 something that I mentioned last year that we called  
18 Drought Emergency Term Permits to allow  
19 appropriators to essentially complete the irrigation  
20 season rather than have a failed crop and reduce  
21 their 2012 use according to that which they used  
22 beyond their authorized amount in 2011. We had  
23 quite a demand for those. There were actually 2350  
24 approximately permits issued before the year was  
25 out.



1           Fall and winter conditions last year did not  
2 improve, and producers began to come to us and sort  
3 of ask what can we do about next year. And so it  
4 began a process of sort of working through that  
5 issue of how to provide multi-year flexibility,  
6 without allowing increased use of our water rights.  
7 Kansas statute has something called a Multi-Year  
8 Flex Account Program. It was a program that was not  
9 used before this sort of episode came up, because it  
10 required a 10 percent conservation factor and was  
11 fairly restricted in terms of how the multi-year  
12 would -- the five-year amount was computed.

13           The Division worked with producers and  
14 legislators to draft legislation to amend the  
15 Multi-Year Flex Account Program to -- to make it  
16 more attractive to producers to provide multiple  
17 options for determining the five-year allocation,  
18 and yet make it very clear in creating up that  
19 multi-year flexibility that in the long term use did  
20 not decrease.

21           So that was passed as Senate Bill 272 in this  
22 -- just this past legislative session. And we've  
23 received over 600 applications for Multi-Year Flex  
24 Accounts for 2012 around the state. Scott, you  
25 received something under a hundred in northwest

1 Kansas; is that right?

2 MR. ROSS: Yes.

3 MR. BARFIELD: Although not all of those were  
4 in the Republican Basin. Last year I also reported  
5 on the governor's initiative related to the Ogallala  
6 aquifer. He held a summit in Colby last summer.  
7 We've, you know, continued to see additional  
8 follow-up, I guess, of the governor's initiative.  
9 One of the most significant, again, was in a  
10 legislative bill.

11 In this case it was Senate Bill 310 that  
12 amended our Groundwater Management District Act in  
13 some pretty significant ways to provide another  
14 method for us to deal with water well declines and  
15 over-appropriation in parts of western Kansas in  
16 particular. Essentially the law allowed groundwater  
17 management districts to initiate the consideration  
18 of something called local enhanced management areas  
19 or what we call LEMA's is the acronym. The  
20 stakeholders developed a plan to address severe  
21 water resource problems in a portion of groundwater  
22 management districts and customize what are called  
23 in the statute "Corrective Controlled Provisions" to  
24 address those water resource concerns.

25 The bill provides a -- once that plan is

1 developed, a hearing process by which in two  
2 hearings -- so the plan is sort of at its root, does  
3 it meet the statutory requirement in such areas?  
4 And then should the public -- should the Correct  
5 Control Provision be adopted? Is it in the public  
6 interest? Does it address the water resource  
7 concern?

8 So this was passed in Senate Bill 310. We  
9 are working with Groundwater Management District  
10 No. 4 in northwest Kansas, which covers the  
11 Republican River Basin and tributaries to the south,  
12 on a LEMA in Sheridan County within the Republican  
13 River Basin. They developed a plan and submitted it  
14 pursuant to statute.

15 The first of two hearings was held in  
16 September and found that the statutory requirements  
17 for that first phase's considerations were met. A  
18 second hearing will be held on November 28th on  
19 whether the plan should be adopted and it's controls  
20 enacted through order of the chief engineer. That  
21 plan basically would set out an allocation of 55  
22 inches for five years for that LEMA area, which is a  
23 20 percent reduction from recent historic use.

24 The governor's also continued to engage on  
25 this issue. He recently went to western Kansas and

1 met in the area of Western Kansas Unit No. 1 and  
2 Southwest Kansas Unit No. 2 and encouraged them to  
3 use this tool. And we're actively sort of following  
4 up with interested individuals to help them sort of  
5 shape what they believe they can and should do. So  
6 those were the most significant legislative bills in  
7 this last session.

8 2012 water supply conditions have continued  
9 to be very dry. This time, instead of principally  
10 the southern half of our state, it's pretty much  
11 been state-wide dry and hot conditions, which has  
12 led to some very significant water administration  
13 state-wide. I think 2012 might be a record year for  
14 water administration when everything is said and  
15 done. And that includes a significant amount of  
16 administration pursuant to our minimum desirable  
17 stream flow provision of the Kansas Water  
18 Appropriation Act. In the Republic Basin we began  
19 administering minimum desired stream flows in late  
20 summer and continue to this date as a result of the  
21 very low water supplies that occurred in that time  
22 frame.

23 Just a couple other matters. We continue to  
24 be in compliance with all of the requirements of the  
25 final settlement stipulation in the Compact.

1 Northwest Kansas is fully metered, and we continue  
2 to complete our normal compliance enforcement  
3 activities in the basin.

4 One last thing, I guess. Just a couple words  
5 on the status of the litigation that is ongoing  
6 related to compliance, Nebraska's compliance with  
7 the Republican River Compact. That -- essentially  
8 that litigation is we had a trial in Portland, Maine  
9 during the month of August and briefing on the  
10 matter was completed. With that, I guess I'll  
11 complete my report. I guess I'll turn it over to  
12 Colorado for your report.

13 MR. WOLFE: Thank you, Chairman Barfield.  
14 I'll keep my report brief, and certainly want to  
15 recognize there's a lot of efforts underway in the  
16 basin in all three states for Compact compliance.  
17 And certainly of utmost importance for Colorado is  
18 our achieving Compact compliance. And I want to  
19 thank our staff that's here today and the staff back  
20 in Colorado who's worked diligently with the  
21 Republican River Water Conservation District and the  
22 water users in the basin for over eight years now on  
23 efforts to try to achieve Compact compliance, not  
24 which the least is the Compact compliance pipeline,  
25 which the district has now completed and is

1 operational and awaiting a decision by the Compact  
2 Administration on its approval of the Compact  
3 compliance pipeline to allow that pipeline to be  
4 operational and complete the last leg of many  
5 efforts for Colorado to achieve Compact compliance.

6 And we certainly couldn't have gotten to this  
7 point without all of their efforts and the water  
8 users in the basin. They've expended on the order  
9 of \$100 million to date to achieve Compact  
10 compliance. And these are really the last steps in  
11 that process to get Colorado into compliance. And  
12 so I want to thank everyone for their -- all of  
13 their diligent efforts and certainly the water users  
14 in the basin to step up and find a local solution to  
15 the local problem.

16 The other component of that that was  
17 important to allow Colorado to achieve Compact  
18 compliance is in regard to the Bonny Reservoir on  
19 the South Fork. I made a decision to issue an order  
20 to the Bureau of Reclamation last September to drain  
21 Bonny Reservoir. And I want to recognize the Bureau  
22 for their efforts in working with Colorado on that.  
23 They have been very cooperative in working through  
24 those issues that come up in regard to draining  
25 Bonny Reservoir for the first time since it's

1 completion back in the 1950's.

2 And as of to date -- today it is drained. It  
3 has been since the early part of the year. And at  
4 this stage Colorado intends to keep Bonny Reservoir  
5 in a drained condition until we're at a point that  
6 we're in compliance and can make a decision in the  
7 future on whether additional storage can occur in  
8 Bonny Reservoir. And with that, I think that  
9 completes my report.

10 MR. BARFIELD: Thank you. Brian from  
11 Colorado -- or Nebraska. Excuse me.

12 MR. DUNNIGAN: Thank you, Chairman Barfield.  
13 I would also like to extend my thanks to you and  
14 your staff for hosting the RRCA meeting and the  
15 hospitality you have provided. The State of  
16 Nebraska is in compliance with the Republican River  
17 Compact. Using current accounting procedures,  
18 Nebraska has had positive balances during 2007,  
19 2008, 2009, 2010, and 2011, which has led to  
20 compliance with the five-year average. Based on  
21 preliminary estimates Nebraska will again be in  
22 compliance for the five-year period ending in 2012.

23 That said, 2012 saw drought conditions once  
24 again creep into the basin. Such conditions will  
25 obviously place stress on basin water supplies.

1           However, any concerns that may have carried over  
2           from the basin and the last drought about Nebraska's  
3           ability to comply with the Compact should not exist.

4           Nebraska has taken significant steps to  
5           bolster its water management, including the  
6           development of third-generation integrated  
7           management plans which contain forecasting  
8           provisions and accompanying controls that ensure  
9           Nebraska will be able to take sufficient actions in  
10          a timely manner. These forecasting procedures are a  
11          significant advancement over what was available to  
12          Nebraska during the previous drought.

13          These procedures incorporate detailed  
14          analysis and triggers that rely on conservative  
15          dry-year projections to proactively identify the  
16          potential for noncompliance, thereby providing the  
17          necessary information to proactively reduce  
18          consumption to levels necessary to ensure Compact  
19          compliance. These triggers go well beyond the  
20          requirements imposed by the Compact and Final  
21          Settlement Stipulations, because Nebraska knows that  
22          future noncompliance is not an option.

23          Nebraska also understands that it must  
24          continue to manage long-term groundwater depletions  
25          and has made consistent efforts to achieve this



1 result. Aside from the forecasting provisions, the  
2 most recent integrated management plans also contain  
3 provisions to continue to reduce groundwater pumping  
4 volumes and conduct evaluations annually to  
5 determine if additional long-term pumping  
6 adjustments are necessary.

7 The basin NRD's continue to demonstrate an  
8 ongoing commitment to compliance through the  
9 adoption of rules to support full implementation of  
10 their most recent integrated management plans. All  
11 of the integrated management plans adopted by the  
12 basin NRD's contain controls that would require,  
13 when necessary, shut-down of wells in rapid response  
14 areas during Compact Call years as part of  
15 compliance efforts, as well as provisions to  
16 administer stream flows in a manner that will ensure  
17 Nebraska maintains compliance.

18 The Department and Tri-Basin NRD also  
19 finalized their integrated management plan, which  
20 became effective on July 1st, 2012. While not the  
21 necessary component to ensure Compact compliance,  
22 this plan will, among other objectives, require the  
23 NRD to limit groundwater depletions to the same  
24 volume as groundwater imports. Nebraska continues  
25 to invest in long-term solutions for reducing

1 consumptive use in the basin.

2 State and local NRD financial resources  
3 continue to be invested in CREP and AWEF programs.  
4 These programs have worked to provide permanent and  
5 temporary reductions in irrigated plans throughout  
6 the basin. Nebraska also continues to invest in the  
7 science necessary to support future sound management  
8 decisions. The Department has been pursuing efforts  
9 in coordination with the Nebraska Republican River  
10 Management Districts Association to develop modeling  
11 tools to support the evaluation of potential  
12 conjunctive management options throughout the basin.

13 The Department looks forward to the  
14 opportunity to work with the other states through  
15 the WaterSMART Basin Studies Program to utilize  
16 these tools and believes that such collaboration to  
17 evaluate system improvements and operational  
18 improvements are critical as recognized in Section  
19 4-E of the final settlement stipulation.

20 In closing, I reiterate that Nebraska will  
21 continue to comply with the Republican River  
22 Compact. The state will continue to proactively  
23 evaluate the conditions within the basin and make  
24 necessary adjustments to remain in compliance.  
25 We'll continue to work with all stakeholders in the

1 basin, including the other states, the NRD's, the  
2 Bureau of Reclamation, and water users as we look to  
3 enhance management efforts in the future. I will  
4 now have Tom O'Connor give a report on water  
5 administration activities in Nebraska for calendar  
6 year 2011.

7 MR. O'CONNOR: Thank you, Brian. This is a  
8 report of water administration activities for the  
9 Republican River Basin in Nebraska for the calendar  
10 year 2011. In January 19th letters were sent to all  
11 non-federal irrigators reminding them that the 2010  
12 water use reports must be filed with the Cambridge  
13 field office or they would be closed for irrigation  
14 in 2011.

15 February 28th: 17 closing notices were  
16 issued to irrigators who failed to submit their  
17 required annual water use reports. These water  
18 users were not allowed to divert water during the  
19 2011 calendar year. February 28th: Also 38 opening  
20 notices were issued to storage permits that had  
21 previously been closed. Also on February 28th, 11  
22 opening notices were issued to irrigators that were  
23 closed due to failing to return their 2009 water use  
24 reports.

25 May 17th: 937 regulating notices were issued

1 to irrigators in the Republican River Basin  
2 notifying them of the amount of water that they  
3 could legally divert. June 1st: One notice of  
4 public schedule was sent to an irrigator notifying  
5 them of the amount they could legally divert.

6 June 28th: Three regulating notices were  
7 sent to water users above the Meeker-Driftwood Canal  
8 notifying them that they were not allowed to divert  
9 water in excess of the amount of their appropriation  
10 without prior consent. Also on June 28th, 24  
11 closing notices were issued to water users above the  
12 Meeker-Driftwood Canal notifying them to not divert  
13 water until further notice.

14 On July 20th nine closing notices were issued  
15 to water users above the Meeker-Driftwood Canal  
16 notifying them not to divert water until further  
17 notice. On August 4th 33 opening notices were  
18 issued to water users above Meeker-Driftwood Canal  
19 notifying them that they were not allowed to divert  
20 water within their permitted amount. Also on  
21 August 4th one regulating notice was sent to an  
22 irrigator notifying them of the amount they could  
23 legally divert.

24 On September 12th 22 closing notices were  
25 sent to storage permit-holders in the Republican

1 Basin. And on December 1st water use reports were  
2 mailed to all nonfederal irrigation permits in the  
3 Republican River Basin.

4 MR. DUNNIGAN: That concludes Nebraska's  
5 report.

6 MR. BARFIELD: Thank you, Mr. Dunnigan. And  
7 with that we will move on to the federal reports.  
8 Okay. And I see you're heading to the microphone.  
9 I would ask you to remind the court reporter of your  
10 name when you issue the Bureau's report.

11 MR. THOMPSON: Good morning. I'm Aaron  
12 Thompson, the area manager for the Bureau of  
13 Reclamation's Nebraska-Kansas office. I've provided  
14 each one of you a copy of the Reclamation's annual  
15 report to the Republican River Compact  
16 Administration. If you need additional copies, I  
17 have some. And if the audience would like any  
18 copies that I have left over, please see me after  
19 I'm done speaking.

20 The report includes a summary of 2011  
21 reservoir operations and farm deliveries. It also  
22 includes operations up through August of 2012. I'm  
23 just going to highlight a few items in the report,  
24 and then I'll let you come after the report with any  
25 questions you may have or any detail you would like

1 to see further.

2 As was highlighted by Commissioner Wolfe's  
3 summary, the State of Colorado requested the  
4 releases of remaining storage water in Bonny  
5 Reservoir. Those releases began in late 2011 and  
6 were completed in 2012. Construction at Red Willow  
7 Dam is -- did begin in 2011. The schedule for  
8 completion is November of 2013. We are working with  
9 the contractor. Reclamation is working with SEMA,  
10 the contractor, for the construction at Red Willow  
11 for an early completion date. As of today we have  
12 approximately 80 percent of the geonet has been  
13 placed on the back face of the dam.

14 Harlan County Reservoir ended 2011 in flood  
15 pool. Flood releases were made during the first  
16 five months in 2012. Water-short year was not in  
17 effect in 2012. Based on the end of September 2012  
18 reservoir storage, water-short year administration  
19 will be in effect in 2013.

20 WaterSMART Activities. I'm pleased to  
21 announce that the Republican River Basin was  
22 selected for basin study in 2012. In addition to  
23 that WaterSMART funding we have quite a few other  
24 projects in the Republican River Basin.  
25 Approximately 2.15 million under the WaterSMART

1 program. Those include irrigation districts, such  
2 as Frenchman-Cambridge, Kansas, Nebraska, Bostwick,  
3 and also the Upper Republican NRD.

4 In addition to those, my area office has  
5 funded \$300,000 in cost-share grants to the area  
6 office funding. And that concludes a summary of my  
7 report.

8 MR. BARFIELD: All right. Are there any  
9 questions for Aaron?

10 (Pause.)

11 MR. BARFIELD: Thank you, Aaron. Next is --  
12 the next item on the agenda is a report from the  
13 U.S. Army Corps of Engineers. I did not hear  
14 anybody from the Corps to indicate they were in  
15 attendance. So is that the case?

16 (Pause.)

17 MR. BARFIELD: Seeing no one step up to the  
18 mic, we will assume there's no report from the --  
19 from the Corps of Engineers. So next would be the  
20 U.S. Geological survey. Jason, if you would like to  
21 get up. Again, we're passing some materials around  
22 the front table here.

23 MR. LAMBRECHT: I'm Jason Lambrecht. I'm  
24 with the U.S. Geological Survey of the Nebraska  
25 Water Sciences Center. I'm the associate director

1 of hydrologic data in Nebraska. Normally my report  
2 -- I guess this is my first time. It's in the form  
3 of PowerPoint, so you're all spared today. This is  
4 better anyway.

5 MR. BARFIELD: Actually there's a way to  
6 accommodate that. If you need, they can actually  
7 move these screens.

8 MR. LAMBRECHT: That's just fine. It looks  
9 like a lot of the previous year since there are  
10 pictures and stuff in it. No cartoons or anything.  
11 I'll just highlight some of the activities from the  
12 past year. What I will be reporting on is the water  
13 2011 river flows. We haven't analyzed 2012, or  
14 completed that analyzation yet. Those numbers  
15 should be coming out in -- around Christmas 2012  
16 should be finalized.

17 Of note we have 16 river sites that we  
18 operate or work to record or both in conjunction  
19 with the DNR, the Nebraska DNR. These are all  
20 Nebraska stream gauges by the way. Ten of those  
21 stream gauges are supported by the NSIP Program,  
22 which is the National Streamflow Information  
23 Program. That's money directly allotted from  
24 Congress to operate stream gauges. In those ten  
25 there are two sites of note.



1           First of all, all the sites that I will be  
2 talking about have roughly 50 to 79 years of record.  
3 And of note, that the first ten that are -- like I  
4 said, were funded by the NSIP Program. All of them  
5 are within -- they all showed a very dry year in  
6 2011, except for one. All of them were in -- 50 to  
7 80 years of record, they all showed they were in the  
8 -- probably the lowest of the 16 years in 2011,  
9 except for the -- with the exception of Red Willow  
10 Creek near Red Willow, Nebraska, which actually was  
11 188 percent above the annual -- or the average mean  
12 flow -- average annual mean flow. I believe this  
13 was due to some draining of Hugh Butler Lake -- I  
14 don't recall -- during the water year. The lowest  
15 site, that was actually the lowest in 71 years of  
16 record, was Rock Creek near Park. And I believe in  
17 2012 they will actually be a little bit lower yet.

18           The next three sites are supported by the  
19 USGS and other state agencies, such as -- well, and  
20 also by the Army Corps. Again, they're within the  
21 top 5 to 15 in the low list of those in water year  
22 2011. That's kind of a highlight overall. And then  
23 looking at the final three as well, which are sites  
24 that are actually operated by the Nebraska DNR and  
25 by the U.S.G.S., is responsible for web display,

1 review, and publishing of the record. Those sites  
2 as well are the top 15 of the lowest lows of average  
3 annual low flows.

4 I don't have a record for the Republican  
5 River in Guide Rock, Nebraska. I believe that the  
6 site itself, according to spreadsheets, was  
7 discontinued in 2008. And the DNR may have moved --  
8 moved to that site in the past year. I'm not aware.  
9 So -- and I'll be speaking with the DNR later on.

10 That concludes my report, except for I just  
11 want to bring up that the U.S. Geological Survey has  
12 a product called WaterWatch. And this particular  
13 product highlights a host of things. Mostly it is a  
14 passive way of acquiring statistics for all of the  
15 stream gauges across the United States.

16 Of note for the drought portion of the  
17 WaterWatch -- there's flood portions, drought  
18 portions. The drought portion, you can come up with  
19 drought tables, which will provide rankings, which  
20 can be used as to how they rank in comparison to  
21 other years. You can compare 7-day or 28-day or  
22 annual. It also -- another neat product is the  
23 duration under drought, which will -- it's brief  
24 pictorial stuff anyway to the presentations and so  
25 forth. Any of your U.S. Geological survey offices

1 in your respective states can answer questions about  
2 WaterWatch. And that concludes my report.

3 MR. BARFIELD: Are there any questions for  
4 Jason?

5 (Pause.)

6 MR. BARFIELD: Okay. I just note for the  
7 record he provided us some handouts of a PowerPoint  
8 he might have presented, if we had our technology  
9 ready to go. It provides graphs for the various  
10 areas that he referenced and long-term annual  
11 quantities. It shows the trends in those gauges  
12 over time typically down. So -- and I think this  
13 will be a part of the record of this year's annual  
14 meeting. So appreciate that report, Jason.

15 That concludes our federal reports. Next  
16 we'll go to committee reports. And first, the  
17 engineering committee. And I will turn to Scott  
18 Ross as the chair of this year's engineering  
19 committee. And lead us through your report.

20 MR. ROSS: Chairman, if you could let me  
21 borrow your work copy. I seem to have had my  
22 revised copy taken. There we go. Thank you. This  
23 year's engineering committee met a number of times  
24 this late summer and fall. We were able to go  
25 through and work on the assignments that were given

1 to us at the last Compact meeting.

2 The information that -- the data exchange was  
3 made. Colorado -- excuse me -- Kansas/Nebraska  
4 completed their exchange of information on April  
5 15th, 2012. We were able to finalize information  
6 from Colorado in late September. And the final data  
7 exchanges were completed and the model runs were  
8 made October 4th, 2012. These data sets include  
9 stream flow, pump data, diversion records, reservoir  
10 evaporation records from all three states.

11 Continuing efforts to resolve concerns over varying  
12 estimates of groundwater surface recharge. We've  
13 discussed those -- that assignment of trying to  
14 standardize that. And we have a recommendation if  
15 we continue that in the future.

16 We retained Principia Mathematica to perform  
17 2012 -- maintain the model and run the model. Each  
18 state separately contracts with Principia  
19 Mathematica for 2012, and we will continue that  
20 discussion for next year. Continued development of  
21 the five-year Kansas spreadsheet. Nebraska provided  
22 the initial spreadsheets. Kansas reviewed that  
23 document and offered some discussions. But we have  
24 not made any further progress on that matter this  
25 year. We will ask that that remain one of our

1 assignments. Continue to review Colorado's  
2 augmentation proposal. This wasn't really an  
3 engineering committee assignment. It was a separate  
4 negotiation committee. We're working on that. So  
5 that wasn't part of the normal EC responsibility.  
6 Continue to work to finalize the 2006 and 2010  
7 accounting. Issues preventing the states from  
8 agreeing on the accounting have you discussed, and  
9 the primary issue is pending before the Supreme  
10 Court at present.

11 Continue the discussion of the procedure to  
12 account for the stream flow segment between Guide  
13 Rock and the diversion dam at Guide Rock. We've  
14 noted that Willow Creek provides some info between  
15 the diversion dam and Guide Rock. We've had some  
16 discussion, and Nebraska has provided us with some  
17 information on the cost of measurement. The  
18 committee yesterday recommended that we continue  
19 that discussion and provide them with a  
20 recommendation at the next meeting.

21 We discussed the Bonny area -- Bonny  
22 Reservoir capacity tables. Kansas proposed to adopt  
23 those -- provide capacity tables for the 2011 data  
24 onward. Colorado would like us to consider applying  
25 those retroactively for 2007 -- or from 2007.

1 Commissioner directed us to continue that discussion  
2 and attempt to provide them with recommendations at  
3 the next meeting.

4 Continued to discuss accounting changes that  
5 may be needed for surface water diversions for the  
6 purpose of recharging groundwater. That assignment  
7 was given to the engineering committee pursuant to  
8 thoughts that the Frenchman-Cambridge Irrigation  
9 District and perhaps others would use their  
10 accounting systems to recharge the project. That  
11 hasn't occurred yet. So we will continue working on  
12 that -- or recommend that the commission give us  
13 that assignment.

14 Discussed the framework for the application  
15 of approval of future augmentation plans. Kansas  
16 initiated a list of questions that are under  
17 discussion at the moment. We would recommend that  
18 assignment be continued. We worked through the --  
19 what's known as the attachment to the Engineering  
20 Committee Report as Exhibit A. It's procedures for  
21 filling in the missing precipitation data needed for  
22 the model. We have a 2011 report that's been signed  
23 by our modeling people recommending methodology for  
24 adopting that, with some changes in the data set for  
25 2011. We expected to produce an addendum to that

1 Exhibit A report at the next meeting.

2 We need to continue to have a discussion on  
3 archiving the data materials from the Conservation  
4 Committee. The committee finished their work -- or  
5 has finished it with some minor cleanup and has  
6 asked that we consider opportunities to store and  
7 archive the data. We've been instructed to continue  
8 that discussion at the next meeting.

9 We have an amendment to the RRCA rules.  
10 There were some discrepancies yesterday that were  
11 located, some typographical errors. We need to have  
12 those corrected and have those approved for next  
13 meeting as an attachment to this report.

14 So the recommended assignments we have for  
15 next year are to exchange data by April 15th as per  
16 the FSS; evaluate standardized estimate --  
17 standardized estimates of groundwater and surface  
18 water irrigation; continue to review Principia  
19 Mathematica's contract and provide a recommendation  
20 to the committee -- to the commission; continue our  
21 efforts to finalize 2006 to 2010 accounting;  
22 continue discussion of the issues preventing  
23 agreement on a final accounting; development of  
24 recommendation of whether or not to account for  
25 inflows from Willow Creek between the Guide Rock

1 Diversion Dam and the newly relocated gauge; discuss  
2 any accounting changes that may be needed for  
3 surface water diversions and for the purpose of  
4 recharging groundwater; discuss developing an  
5 application approval process for future augmentation  
6 plans; finalize the procedure for -- as described in  
7 Exhibit A of this report and adopt the item that we  
8 need; finalize work on users manual for the RRCA  
9 accounting principles and provide a recommendation  
10 to the administration for adoption; and continue  
11 work on a five-year accounting spreadsheet.

12 And that concludes my report. We will not be  
13 asking the -- for the adoption of this report as one  
14 of our members is not with us, and like an  
15 opportunity to do that.

16 MR. BARFIELD: Comments or questions by the  
17 other states?

18 (Pause.)

19 MR. BARFIELD: I've got a couple. Scott, on  
20 the items, you mentioned finalizing accounting 2006  
21 to 2010. Should we make that 2011 now?

22 MR. ROSS: Yes.

23 MR. BARFIELD: So we should sort of adjust  
24 the assignments to reflect another year added to the  
25 list. And the second, maybe, question is just to



1       make sure I heard you right. Or maybe Mr. Dunnigan  
2       can answer this. On number -- related to surface  
3       diversions for recharging groundwater, I think you  
4       mentioned the state's working on that potential  
5       proposal of doing that. I wasn't clear from Scott's  
6       report if that had not occurred or the assignment to  
7       the engineering committee had not occurred. Have  
8       you done any recharge of that nature that you  
9       discussed a year ago?

10           MR. SCHNEIDER: We did have a project with  
11       the Frenchman Valley Irrigation District in the  
12       spring of 2012. It lasted about a month.

13           MR. BARFIELD: So they did do some recharge?  
14       They diverted into the canal, but -- essentially let  
15       it recharge through the canal?

16           MR. SCHNEIDER: Right.

17           MR. BARFIELD: What kind of quantities were  
18       involved in that operation?

19           MR. SCHNEIDER: I don't have that information  
20       available right now.

21           MR. BARFIELD: So that was an operation that  
22       was done, but no particular accounting will be done  
23       in terms of the Compact's accounting? Or is that  
24       what this assignment is about, to figure out how to  
25       do that?

1 MR. SCHNEIDER: I believe that's what the  
2 assignment is about.

3 MR. BARFIELD: All right. Thank you. So  
4 obviously we need some more work on the report. The  
5 report is usually the vehicle by which we make our  
6 assignments to you all. So I guess we'll discuss  
7 that issue when we come to Agenda Item 9-A. Okay.  
8 So is that all we have on the engineering committee?

9 (Pause.)

10 MR. BARFIELD: Apparently so. So with that  
11 we'll move to Agenda Item 7-B, the report of the  
12 conservation committee, Scott Guenthner. I presume  
13 you will be providing that report?

14 MR. GUENTHNER: Good morning. I'm Scott  
15 Guenthner. I'm with the Bureau of Reclamation.  
16 today I'm presenting the report on behalf of the  
17 conservation committee. Each of the states have a  
18 representative on the conservation committee, so  
19 most of this -- or all of this information I will be  
20 presenting today had input from your staffs.

21 As you recall, the conservation study is an  
22 element of the final settlement stipulation. And  
23 the conservation committee developed a plan of study  
24 in 2004, and you approved that study plan.  
25 Subsequent to that, each year we provided annual

1 status reports. We've provided so far five annual  
2 status reports. And last year we provided a report  
3 of preliminary findings.

4 We haven't done any additional modeling.  
5 Most of the study has to do with water balance  
6 modeling for these small non-federal reservoirs and  
7 land terraces. We haven't done any modeling in the  
8 last year, except to clean up and to verify the  
9 stuff we have provided to you last year.

10 What we've done in this past year, we've  
11 provided -- we've developed a final report. Right  
12 now we would consider this report still a draft  
13 version. The substance of the report will not  
14 change, but there's some cleanup, editorial type of  
15 work that needs to happen.

16 We provided you a copy of the -- of the final  
17 report yesterday at the work session. The report  
18 isn't available to the public yet, pending some of  
19 the cleanup stuff I just mentioned. What we have  
20 also developed is a fact sheet. It's a one-page  
21 sheet that really tells why the study was done, what  
22 we looked at. It sort of is the summary of the  
23 final report in layman's terms. The final report is  
24 pretty detailed. This is pretty generic.

25 I might just mention a couple things that we

1 learned. Really what we learned, some of the stuff  
2 was suspected. Some of the information is new.  
3 When it comes to the nonfederal reservoirs in the  
4 eastern part of the basin, they really retain about  
5 70 percent of the runoff that occurs in those  
6 watersheds above the reservoir. In the western part  
7 of the basin they generally retain all of the runoff  
8 into them. About 70 percent of that runoff then  
9 goes to seepage, which eventually ends up as a  
10 recharge to the aquifer.

11 For the land terraces, about 80 to 90 percent  
12 of the runoff above the drainage area into these  
13 terraces is captured by the terrace. About  
14 60 percent goes to recharge. About 40 percent of  
15 that retained runoff goes to increase  
16 evapotranspiration. So when you look at all of the  
17 nonfederal reservoirs and all of the terraces in the  
18 basin and roll that up into one number, all of the  
19 sub basins that go into the Republican, about --  
20 there's an additional 36,000 acre-foot of  
21 evapotranspiration occurs as a result of those  
22 conservation measures. About 88,000 acre-foot ends  
23 up as a recharge under those facilities. So that  
24 recharge occurs higher up in the basin than it would  
25 have had those facilities not been in place.

1           So when you roll that up, this increased  
2           evapotranspiration and increased recharge is about  
3           125,000 acre-foot for all of these nonfederal  
4           reservoirs and terraces in the basin. That's about  
5           equivalent to -- or excuse me -- the same magnitude  
6           as the inflow to Harlan County Lake. We have some  
7           additional fact sheets available for the audience if  
8           they would like some. I have set out back in the  
9           entryway. And if you would like a copy, you could  
10          pick one up.

11           One last thing I would mention is that we'll  
12          attempt to finalize this report within the next  
13          month. And it will be available on some websites.  
14          And those are identified on this fact sheet. That  
15          concludes my report.

16           MR. BARFIELD: All right. Any questions for  
17          Scott?

18   (Pause.)

19           MR. BARFIELD: We appreciate the Bureau and  
20          the committee's report. It's been quite a project  
21          to do. I think it's -- appreciate your filling that  
22          requirement and commitment in the FSS. And your  
23          study results are quite interesting. There's a  
24          significant recharge occurs from those projects. So  
25          thank you very much.

1 MR. GUENTHNER: Thank you.

2 MR. BARFIELD: Okay. We're moving along very  
3 well then. This is sort of a point where we  
4 traditionally take a break, and I'm going to go  
5 ahead ask that we do that. We have quite a bit of  
6 donuts and cinnamon rolls and such that we need your  
7 help with. So I think a 15-minute break now, it  
8 that's okay. And then we'll come back and push  
9 through the rest of our agenda.

10 (A recess was taken from 9:04 a.m. until  
11 9:26 a.m., after which the following proceedings  
12 were had.)

13 MR. BARFIELD: Okay. Well, thank you very  
14 much. I trust you provided -- that you all did your  
15 parts. If not, you can take one on the way out. So  
16 we'll go ahead and reconvene the meeting of the  
17 Administration and continue with our -- on our  
18 agenda. We had completed Agenda Item 7-B.

19 The next item is Agenda Item 8, which is old  
20 business. 8-A is status of unapproved previous  
21 accounting. And I think this is just a carry-over  
22 for previous agendas. And we've discussed this to a  
23 certain extent, I believe, in discussing the  
24 engineering committee reports and assignments. And  
25 I believe the status is we're still working through

1 the issues related to those accountings and have it  
2 on the engineering committee assignments to continue  
3 that work.

4 Is that a good enough summary of where we're  
5 at there? Some of the issues are pending;  
6 additional time to review, data exchange. Some of  
7 them are pending outcomes of the litigation. That  
8 was also an issue that goes back to '06, I believe.  
9 So that's -- I think that's all we need to say about  
10 that. Is that correct?

11 MR. DUNNIGAN: Yeah.

12 MR. BARFIELD: Okay. With that we'll go  
13 ahead and go to new business. Agenda Item 9 and  
14 assignments. And the first one is discussion of the  
15 engineering committee report and assignments. I  
16 guess in view of the fact that we're not going to --  
17 we don't have a final engineering committee report  
18 today, we do plan to hold a special meeting in the  
19 coming relatively short period of time, as soon as  
20 we are ready for action on some of these other  
21 items. And so hopefully the engineering committee  
22 report can be finalized at that time and the  
23 assignments cleared. But I think the engineering  
24 committee has plenty on its plate and knows what it  
25 should be doing. I think you mentioned there may be

1 something that was...

2 MR. WOLFE: Yes, if I could, Chairman. Thank  
3 you. I apologize for not bringing this up earlier  
4 when we were talking about it. Even though it's  
5 included in agenda item -- or the committee report,  
6 Item 10-C, I think the -- that item should also be  
7 reflected in the recommended assignments by the  
8 engineering committee. It's -- maybe we can make a  
9 list of 12 items instead of 11. If we could just  
10 have that reflected in that list as well.

11 MR. BARFIELD: Okay. So you're saying that  
12 the -- dealing with the revised of the Bonny  
13 Reservoir area capacity table is not reflected in  
14 our list of the recommended assignments?

15 MR. WOLFE: Correct. I think he notes what's  
16 in 10-C. I think he recognize they probably  
17 wouldn't accomplish that. I think just for clarity,  
18 if it was just an item in the itemized list under  
19 recommended assignments, I think just for  
20 completeness we would ask that that be also  
21 reflected in that itemized list.

22 MR. BARFIELD: Okay. Is that good with  
23 Nebraska?

24 MR. DUNNIGAN: Yes.

25 MR. BARFIELD: So the final work order to the



1 committee will reflect that additional assignment.  
2 Hopefully there will be a day when we start checking  
3 things off so the list doesn't just continually get  
4 larger and larger. Okay. Excuse me. That would  
5 bring us into new business, Item 9-B, Nebraska's  
6 proposed plan for reduction of computed beneficial  
7 consumptive uses. I guess, Mr. Dunnigan, I'll let  
8 you lead us through this.

9 MR. DUNNIGAN: Thank you, Chairman Barfield.  
10 On July 30th of this year we submitted an  
11 alternative water-short year plan for consideration  
12 and approval by the Republican River Compact  
13 Administration. We certainly feel that the plan  
14 that we submitted conforms with the requirements of  
15 Appendix M. We certainly took a bit of time  
16 yesterday to discuss those requirements and had some  
17 discussion on Appendix M. I would also note for the  
18 record that on October 4th we did receive a letter  
19 from Commissioner Barfield commenting on our  
20 water-short year plan and -- with the conclusion  
21 that Kansas could not approve this plan.

22 In our discussion of Appendix M it seems like  
23 there is some confusion or some interpretation  
24 differences with the language of Appendix M. And  
25 specifically we did talk about Item 2 in Appendix M,

1       which states that, "Each plan shall indicate the  
2       actions which Nebraska would undertake to reduce  
3       it's computed beneficial consumptive uses from the  
4       base condition and the amount of reduction expected  
5       from those actions."

6               Again, we feel that we have addressed that in  
7       our plan and we are going to offer a resolution for  
8       consideration of the RRCA. And I will have Jim  
9       Schneider read that resolution into the record.

10              MR. SCHNEIDER: "Resolution of the Republican  
11       River Compact Administration. Nebraska's  
12       Alternative Water-Short Year Administration Plan.  
13       Whereas, the states of Kansas and Nebraska and  
14       Colorado entered into a Final Settlement Stipulation  
15       or FSS as of December 15, 2002, to resolve pending  
16       litigation in the United States Supreme Court  
17       regarding the Republican River Compact, or Compact,  
18       in Nebraska -- in Kansas v. Nebraska and Colorado,  
19       No. 126 Original;

20              "Whereas the FSS was approved by the United  
21       States Supreme Court on May 19th, 2003;

22              "Whereas, by letter dated July 30, 2012, the  
23       State of Nebraska submitted to the State of Kansas  
24       and the State of Colorado a copy of the "State of  
25       Nebraska's Plan for Reduction of Computed Beneficial

1 Consumptive Uses under Alternative Water-Short Year  
2 Administration Plan," or Water-Short Year  
3 Administration Plan;

4 "Whereas Nebraska has previously provided the  
5 State of Kansas and the State of Colorado RRCA  
6 Groundwater Modeling results indicating expected  
7 CBCU reductions resulting from Nebraska's actions  
8 during Compact Call years;

9 "Whereas, Nebraska's Water-Short Year  
10 Administration Plan has been properly presented and  
11 submitted to the Republican River Compact  
12 Administration pursuant to Appendix M of the FSS;

13 "Whereas, on September 14th, 2012, the State  
14 of Nebraska provided the State of Kansas and the  
15 State of Colorado notice that if its Water-Short  
16 Year Administration Plan were not approved by the  
17 RRCA that Nebraska may --"

18 (Microphone malfunction.)

19 MR. SCHNEIDER: I'll start that one over.

20 "Whereas on September 14, 2012, the State of  
21 Nebraska provided the State of Kansas and the State  
22 of Colorado notice that if its Water-Short Year  
23 Administration Plan were not approved by the RRCA,  
24 that Nebraska may pursue fast-track resolution of  
25 the issue;

1           "Whereas, on October 3rd, 2012, the State of  
2 Nebraska was provided notice by the United States  
3 Bureau of Reclamation that the potential for  
4 Water-Short Year Administration exists in 2013;

5           "Whereas, no methodology exists in the RRCA  
6 Accounting Procedures and Reporting Requirements to  
7 determine necessary reductions in Computed  
8 Beneficial Consumptive Use or CBCU for the upcoming  
9 year, and (defined as the current year in Table 5D  
10 of the RRCA Accounting Procedures and Reporting  
11 Requirements) prior to August 1 of the current year,  
12 (defined as year equals -1 in Table 5D of the RRCA  
13 Accounting Procedures and Reporting Requirements);

14           "Whereas, Nebraska has developed a  
15 methodology to determine the necessary reductions in  
16 CBCU by December 31st for the upcoming year  
17 (provided with Nebraska's Water-Short Year  
18 Administration Plan), following the determination of  
19 the necessary reductions, Nebraska will then  
20 determine the actions from those indicated within  
21 the Water-Short Year Administration Plan that it  
22 will utilize to produce such reductions, and these  
23 actions and their respective reductions in CBCU will  
24 be provided to the RRCA prior to April 1 of the year  
25 in which the Water-Short Year Administration Plan is

1 implemented;

2           Whereas, the states agree that the expected  
3 reductions in CBCU implemented through Nebraska's  
4 Water-Short Year Administration Plan shall be  
5 evaluated by the Republican River Compact  
6 Administration using methods consistent with the  
7 RRCA Accounting Procedures and the RRCA Groundwater  
8 Model;

9           "Whereas, the states agree that Nebraska's  
10 proposed Water-Short Year Plan Administration  
11 performs the requirements set forth in Appendix M of  
12 the FSS and that the RRCA should adopt Nebraska's  
13 proposed Water-Short Year Administration Plan;

14           "Now, therefore, it is hereby resolved that  
15 the RRCA approves and adopts the 'State of  
16 Nebraska's Plan for Reduction of Computed Beneficial  
17 Consumptive Uses under Alternative Water-Short Year  
18 Administration.'"

19           MR. DUNNIGAN: At this time I would make a  
20 motion for the RRCA to approve and adopt the State  
21 of Nebraska's Plan for the Reduction of Computed  
22 Beneficial Consumptive Uses under Alternative  
23 Water-Short Year Administration.

24           MR. WOLFE: Second.

25           MR. BARFIELD: Okay. Via this resolution,

1 right? We're approving the plan via this  
2 resolution?

3 MR. DUNNIGAN: Yes.

4 MR. BARFIELD: All right. So we have a  
5 motion and a second. Is there any discussion? Go  
6 ahead.

7 MR. WOLFE: I'd maybe just like to comment on  
8 -- just in a broader perspective in regards to the  
9 efforts of this commission. And I know we had some  
10 discussion about this yesterday. And I appreciate  
11 Nebraska's efforts for Compact compliance, because  
12 we certainly appreciate the efforts it takes to get  
13 into Compact compliance and fully understand and  
14 appreciate their desire to get this approved.

15 And being an administrator and in business  
16 for over 20 years I know it's difficult. We have a  
17 very active administration in Colorado and recognize  
18 that there's no perfect plan. But I don't think  
19 perfection should be the enemy of good. I think we  
20 need to move from an area of this litigation we've  
21 been in to an area of cooperation. And I think this  
22 is an effort that Nebraska is trying to push  
23 forward. And I encourage this body to really  
24 embrace trying to move forward in a cooperative  
25 manner and working cooperatively on these type of

1 issues and not trying to automatically default in a  
2 litigation mode or in a dispute-resolution-type  
3 mode.

4 I think Nebraska has earnestly put forward a  
5 good faith effort in the spirit of Appendix M to get  
6 this approved, and we support them their efforts to  
7 do that. And I encourage Kansas and all three  
8 states to really put effort forward in the next  
9 short period of time here to try to move these type  
10 of things forward. I think it's in the best  
11 interest of all the states to do that. Thank you.

12 MR. BARFIELD: Okay. Well, obviously I will  
13 have some comments as well; and certainly recognize  
14 Nebraska's efforts, as you reported, to reduce it's  
15 use and to get itself in a position where it can --  
16 can, you know, be in compliance in all periods. But  
17 with respect to this specific action that you've  
18 requested we take -- and let me back up.

19 Certainly Kansas wishes to cooperate and --  
20 with the states in terms of the Administration  
21 Compact in these matters. But obviously we have a  
22 specific plan that has been put forward pursuant to  
23 a specific piece of the Final Settlement Stipulation  
24 that has -- that prescribes basically how the  
25 process is to work through and describes what the

1 plan should include and so forth. And so that's --  
2 this was the first time that this Appendix M  
3 provision has been brought forward and even  
4 discussed by the RRCA.

5 Nebraska chose to submit this on July 30th,  
6 just as the states were going to trial. And the  
7 State of Kansas has, you know, taken -- taken  
8 significant time from our heavy demands in  
9 litigation to look at this appendix and seek out  
10 it's meaning and to review Nebraska's plan in terms  
11 of how it fits with those requirements. Again, our  
12 finding in reviewing this is that it does not  
13 conform to the requirements set forth in Appendix M.

14 And as Commissioner Dunnigan noted, my  
15 October 4 letter provided sort of a -- the details  
16 in terms of why and how we believe it does not  
17 conform to those requirements. So obviously that  
18 letter in here -- I would state that the Kansas is  
19 certainly interested and willing to continue to work  
20 with the State of Nebraska as it desires to have an  
21 Alternative Water-Short Year Plan that can be  
22 approved pursuant to Appendix M and -- and the --  
23 the proactive action on the part of the State of  
24 Nebraska that that would entail and the -- the  
25 alternative way of measuring water-short year



1 compliance that is also part of Appendix M.

2 So, you know, I believe we can and should  
3 work cooperatively. And there's a way that a plan,  
4 if it could be put forward, to provide Nebraska and  
5 really Kansas with a -- with the benefits that  
6 Appendix M provides; again, a proactive plan for  
7 reducing its use in exchange for a modified  
8 alternative water-short year test. So I received  
9 this resolution just this morning before we got on  
10 stage. And I'm -- I'm still prepared, despite that  
11 I think, to act -- act on it this morning, if the  
12 state wishes -- State of Nebraska wishes us to have  
13 that vote. So I guess those are my comments. Any  
14 additional comments? Commissioner Dunnigan.

15 MR. DUNNIGAN: Mr. Schneider.

16 MR. SCHNEIDER: Thank you. Unfortunately  
17 we've -- you're pledging your cooperation in working  
18 with us, but we've heard that before, Mr. Barfield.  
19 And your actions have shown otherwise; just like  
20 your action to reject this plan before we even had a  
21 chance to discuss it. So pledges of cooperation are  
22 -- are fairly hollow in light of those actions.

23 I would also note that this plan does contain  
24 a specific action, the curtailment of groundwater  
25 uses as necessary. And that's exactly what the

1 litigation was about. So we don't see how this all  
2 fits together with what you're saying in terms of  
3 wanting to work with us, but simply rejecting out of  
4 hand; and in particular, when we're dealing with a  
5 potential action that you yourself have been  
6 advocating.

7 MR. BARFIELD: All right. Thank you. Again,  
8 the letter provided our -- an opportunity for us to  
9 sort of explain our view of what -- what's necessary  
10 in this. I believe that the State of Nebraska's  
11 plan, as we said, does not conform to the  
12 requirements of Appendix M. And I believe a plan  
13 could be put forward that would.

14 Again, as we said, we believe that there  
15 needs to be a -- you know, that "indicate" means we  
16 need to know here are the specific actions that are  
17 going to be taken under the plan and this is the  
18 specific yield that will come from that plan and,  
19 you know, the corresponding documentation, so that  
20 the RRCA can do, apparent to the Appendix, it's  
21 review and agree with Nebraska's plan in the  
22 projected savings. And then -- then in the  
23 subsequent year, that Nebraska can implement what we  
24 all know it committed to do.

25 So again, all of that is in the letter. I

1 believe Appendix M is clear and workable, and we'll  
2 -- I guess I would just reiterate we're willing to  
3 continue to work with you to figure out how to use  
4 this tool.

5 MR. DUNNIGAN: And I would add just one more  
6 comment. I, too, believe that Appendix M is clear.  
7 And we would not have put forth a plan that we did  
8 not feel conformed with the intent and letter of  
9 Appendix M.

10 MR. BARFIELD: All right. Other discussion?

11 (Pause.)

12 MR. BARFIELD: Okay. There's been a motion  
13 and a second to adopt the resolution, and in doing  
14 so to approve Nebraska's plan. I guess I would ask  
15 for a vote. Mr. Wolfe?

16 MR. WOLFE: Yes.

17 MR. BARFIELD: Mr. Dunnigan?

18 MR. DUNNIGAN: Yes.

19 MR. BARFIELD: Kansas votes no for the  
20 reasons that we've discussed this morning that are  
21 in my letter of October 4. But again, I hope with  
22 continued dialogue we can find a way to move  
23 forward.

24 MR. DUNNIGAN: Chairman Barfield?

25 MR. BARFIELD: Yes.

1 MR. DUNNIGAN: I would ask that the  
2 resolution be attached to the transcript of the RRCA  
3 report, if that's okay.

4 MR. BARFIELD: Certainly.

5 MR. DUNNIGAN: Thank you.

6 MR. BARFIELD: As well as the October 4th  
7 letter on this as well.

8 MR. DUNNIGAN: Thank you.

9 MR. BARFIELD: Okay. Okay. If there's  
10 nothing more there we will move on to Agenda Item  
11 9-C. And if you want to take them individually, you  
12 can. Or if you want to combine 9-C and 9-D, it's up  
13 -- as you wish.

14 MR. WOLFE: Thank you, Chairman. And I will  
15 be brief on this, and I hope to take those in  
16 combination. We did have some discussion yesterday  
17 at the workshop in regard to these items. Widely  
18 represented, I guess, is two separate items there in  
19 terms of resolutions; kind of stems out of the  
20 history of this when we first brought forward to the  
21 RRCA back in 2009 a proposed resolution for the  
22 Compact Compliance Pipeline and was acted upon a  
23 couple of times in 2009.

24 And what was also drafted up and not acted  
25 upon at that time was components regarding the South

1 Fork and the Bonny Reservoir operations, which we  
2 talked about in detail yesterday. And since there  
3 was no formal action specific to that resolution  
4 before, we've been just -- for I guess discussion  
5 purposes, just kind of carrying along two types of  
6 -- or two separate resolutions just to represent the  
7 various components of Colorado's overall  
8 augmentation plan proposal.

9 Our goal is certainly to have a complete  
10 basin-wide resolution that deals with our  
11 augmentation proposal and planned operations into  
12 the future. And we'll continue to move forward with  
13 that goal and hope to move towards a special meeting  
14 by the RRCA here in the very near future as we  
15 complete our discussions with Nebraska and Kansas on  
16 these specific resolutions and their -- their  
17 components. And we're going to continue working  
18 with the water users in the basin in the Republican  
19 River Water Conservation District.

20 As they know, we've been working in earnest  
21 in discussions with -- particularly with Kansas on  
22 these particular issues. And we have our -- they  
23 have our full commitment -- Colorado's commitment to  
24 go -- once we feel like we're at a point of a  
25 proposed resolution that meets the requirements of

1 both -- or all three states, we will seek approval  
2 by the district or -- and the water users in the  
3 basin out there prior to bringing that final  
4 approval by the RRCA. And that's all I have to  
5 present, unless there's any questions on that.

6 MR. BARFIELD: Any questions?

7 (Pause.)

8 MR. BARFIELD: Okay. Thank you for that  
9 report. And as noted, the states will continue to  
10 work with the State of Colorado on both their  
11 augmentation plan proposal and all the various  
12 elements, as well as seeking to determine how to  
13 model Bonny and the South Fork appropriately in  
14 light of the changed operations there at Bonny. So  
15 appreciate that.

16 MR. WOLFE: Thank you.

17 MR. BARFIELD: So that was Agenda Items 9-C  
18 and 9-D. 9-E was sort of a -- put on the agenda as  
19 an opportunity to consider, if necessary, maybe an  
20 alternative to Nebraska's -- or I'm sorry --  
21 Colorado's proposal on account of the Bonny. We put  
22 this together -- this agenda together at a point in  
23 time where we thought certain resolutions might come  
24 to fruition at this meeting, which are not the case.

25 On this particular item, there's nothing that

1 Kansas wishes to put forward at this time. Our  
2 desire is to continue to work with the State of  
3 Colorado on this issue and this issue of --  
4 augmentation plan issues hopefully in a complete  
5 package. So that is all I have on that item.  
6 Agenda Item 9-F, just to provide -- which is the  
7 proposal for a common set of procedures and recharge  
8 values by system type for estimating groundwater  
9 irrigation recharge in the RRCA groundwater model.

10 The -- when the states developed the  
11 settlement in 2002 and 2003, a groundwater model was  
12 a piece of that jointly-developed solution. And it  
13 included -- the state's did their best to bring the  
14 best data and methodologies for purposes of building  
15 a groundwater model, and also made commitments to  
16 the board to improve their data moving forward; for  
17 example, meeting more intensively and the like.  
18 There was also a commitment to look at groundwater  
19 irrigation recharge methodologies.

20 The methodologies that were used in  
21 developing the model were not the same between  
22 states. And there was a commitment to try and seek  
23 a -- going forward a common way to determine  
24 groundwater irrigation recharge. Kansas has sort of  
25 brought this subject up in 2004 and since, and we

1 have not been able to make much progress. And so I  
2 was hoping to have a proposal for consideration  
3 here. That has not occurred.

4 I, yesterday at the work session, notified  
5 the other states that we are planning on sort of  
6 developing a scope of work to -- to develop  
7 hopefully a common set of procedures and recharge  
8 values that we can put before the RRCA for it's  
9 consideration. And we'll be notifying the other  
10 states of that plan and seeking to invite them into  
11 that process. So that's, I guess, the status of the  
12 matter on 9-F. Anything?

13 (Pause.)

14 MR. BARFIELD: Okay. Finally -- well,  
15 finally under 9-G -- and it's, again, Kansas'  
16 proposal for accounting and modeling of augmentation  
17 flows. And again, we actually have no specific  
18 proposal at this time. As Scott noted in the  
19 engineering committee report at last year's meeting,  
20 Nebraska requested that the EC discuss developing a  
21 framework for application and approval of processes  
22 for future augmentation plans.

23 Obviously this is timely, as I understand  
24 Nebraska is completing or near completion of an  
25 augmentation project on the Rock Creek Basin in the



1 upper part of the basin in Nebraska. I asked about  
2 that specifically yesterday and was told that's, in  
3 essence, complete. You know, the FSS has an  
4 expectation that augmentation plans will be brought  
5 before the RRCA and approved prior to  
6 implementation. So this is sort of in conjunction  
7 with that, what needs to be in that plan and so  
8 forth.

9 So Kansas, in the context of the engineering  
10 committee, has offered some starting points, I  
11 think, for that discussion and questions on the Rock  
12 Creek Project. And we'll look forward to continuing  
13 to work with Nebraska on that topic as we move  
14 forward. So nothing specific today. It's a work  
15 task that I think we are obligated to continue to  
16 consider moving forward. Okay. I guess that  
17 concludes that item. Is there any other new  
18 business to be considered here?

19 (Pause.)

20 MR. WOLFE: No.

21 MR. BARFIELD: Okay. There's an agenda item  
22 for remarks from the public. We have a microphone  
23 in front. Or if there is anybody here that would  
24 like to make a statement for the RRCA's  
25 consideration, we have some time here this morning.

1 All right.

2 MR. CORYELL: Yes. I'm Dennis Coryell with  
3 the Republican River Water Conservation District in  
4 Colorado. Several things that I would like to  
5 reiterate or emphasize that have been mentioned by  
6 Commissioner Wolfe. I would just urge the Compact  
7 Administration committee to reach agreement on the  
8 accounting for the sub basin of the South Fork in  
9 light of the fact that Bonny Reservoir has been  
10 drained.

11 It -- it appears to me that we need to keep  
12 moving in a positive direction. That was a very  
13 painful thing for folks in not only eastern  
14 Colorado, but southwest Nebraska and northwest  
15 Kansas. But -- and we don't have many tools to work  
16 with in Colorado. And unfortunately that was one of  
17 the components that was absolutely necessary to  
18 solve that sub basin impairment issue.

19 Second thing I wanted to mention was our  
20 pipeline is complete. We're currently in the  
21 process of testing the SCADA system so that we can  
22 monitor the operations of the pipeline. We're ready  
23 to punch the button and deliver water. So I would  
24 likewise urge this Compact Administration to approve  
25 the accounting for the inflows to the North Fork of

1 the Republican River and allow Colorado to get into  
2 compliance with that. We're anxiously waiting the  
3 time that we can say we are in compliance.

4 Thirdly, I would like to mention our district  
5 budget committee recently in a -- as we prepare for  
6 our 2013 budget, has recommended to our board a  
7 allocation of a million dollars each year for  
8 conservation in the form of rebates of our use fees  
9 within our basin. This would be based on actual  
10 decrease of historical consumptive use.

11 We think that that's a -- a very good  
12 incentive. We're going to work with NRCS, as well  
13 as some of the efforts in the other states to  
14 decrease the amount of water that we're using within  
15 the basin, whether that's through use of  
16 low-water-use crops, several other measures.  
17 Anyway, we're committed to also slow the decline of  
18 the Ogallala Aquifer. And that's been the next step  
19 after we got the pipeline built; and hopefully be  
20 able to get into compliance and really work on the  
21 conservation of the aquifer.

22 So my -- my urgency would be this: If -- if  
23 several hundred farmers and water users in our basin  
24 in a matter of four years can put together a \$64  
25 million dollar project, get it completed, then

1       surely the very competent water leaders of the three  
2       states can come to an agreement so that we can  
3       actually comply with what the law says. So I urge  
4       you, please be committed to very soon reaching an  
5       agreement on our issues. Thank you.

6               MR. BARFIELD: All right. Thank you,  
7       Mr. Coryell. Appreciate those comments. I remember  
8       well last year in Burlington and the crowd of people  
9       that were quite -- quite unhappy about their action.  
10       And we do appreciate the actions of the State of  
11       Colorado and its efforts to get in compliance.

12               You know, we invested a lot of time in  
13       looking at the -- sort of the suite of issues that  
14       is there as we went through a comprehensive package  
15       that's not just the North Fork, but also the South  
16       Fork issues as well, certainly because this is -- as  
17       Mr. Wolfe has indicated, the urgency of that. And  
18       we'll give that -- give that some significant  
19       attention in the coming weeks. Any other public  
20       wish to speak?

21                               (Pause.)

22               MR. BARFIELD: Okay. The next agenda item is  
23       future meeting arrangements. We have not actually  
24       -- I don't think we've made any specific  
25       arrangements at this juncture. Mr. Dunnigan?

1 MR. DUNNIGAN: No.

2 MR. BARFIELD: I'm sorry. I would anticipate  
3 that we would go back to our August schedule next  
4 year. This year, for the public's benefit, we had  
5 to move -- normally we meet in August of each summer  
6 to provide us enough opportunity to complete all of  
7 the assignments related to the accounting and  
8 modeling and so forth. This year we were on trial  
9 in August, so the commissioners decided to do this  
10 later date. But I presume we'll go back to the  
11 August 8th for our annual meeting. And we have not  
12 decided on site. Typically Kansas has one meeting  
13 and we host in the lower basin. And we'll go to the  
14 upper basin for the other meetings. So we'll give  
15 that some thought and let you know. Is there a  
16 particular time in August you would like us to aim  
17 for, or should we just maybe propose some dates in  
18 an e-mail?

19 MR. WOLFE: I would suggest maybe circulating  
20 some proposed dates, and we can look at our  
21 respective calendars. And I guess on that note --  
22 refresh my memory on this, because every time we  
23 move into August we have to circulate letters saying  
24 that we can do that.

25 MR. BARFIELD: Right.

1 MR. WOLFE: Because there's a requirement  
2 that we do that prior to the end of June or -- I  
3 think that's -- I can't remember the exact date.  
4 But I'm just wondering. It seems like that we're  
5 kind of in this mode of always having August --  
6 should we as a commission -- commissioners be taking  
7 some action to formalize this and making it  
8 permanent somehow so we're not -- not that it's a  
9 huge issue to circulate these letters every year to  
10 extend that. But I'm just wondering if it's in our  
11 best interest maybe to look at trying to change  
12 whatever it is or approve whatever it is to make  
13 that permanent.

14 MR. BARFIELD: That's a good comment. And  
15 our rules specify -- and I don't have those in front  
16 of me. But we should either amend our practice or  
17 amend our rules.

18 MR. DUNNIGAN: I think it would be Rule 13  
19 that we would be acting under.

20 MR. BARFIELD: And what date does it say?  
21 The end of July or June?

22 MR. DUNNIGAN: I think it's the end of July.

23 MR. BARFIELD: So which do we want to amend?  
24 We can do either. I think -- and maybe it's still  
25 the case -- Colorado had a set of data that it was

1 depending upon to do the accounting that sort of  
2 arrived later. Are you still using that data?

3 (Mr. Wolfe nodded.)

4 MR. BARFIELD: Okay. Yeah. I certainly  
5 wouldn't oppose moving the practice -- again, a  
6 reason to get the accounting of the majority is  
7 possible to provide, you know, the states an  
8 opportunity to sort of know where they're at. But,  
9 you know, the April 15th exchange and preliminary  
10 runs, we sort of already have that. So I'm not sure  
11 that having the -- the meeting in August is a  
12 problem. Certainly isn't in Kansas. Why don't we  
13 ask the engineering committee -- we actually have  
14 the rules that we were talking about anyway. I'm  
15 sorry?

16 MR. DUNNIGAN: I would just want to be clear  
17 that the actual rule with the date in it is Rule 9.  
18 The procedure that we use would be Rule 13.

19 MR. BARFIELD: So can we ask the engineering  
20 committee, because we're assembling some minor  
21 modifications of those rules in any case, maybe pass  
22 them to -- is the end of August maybe a better date?

23 MR. WOLFE: Either into August or provide  
24 some flexibility in the language that, you know,  
25 allows us to have it once a year and whatever

1 conditions are necessary. I'm fine with moving it  
2 to the end of August, but maybe they need to come  
3 back with some proposal of changing the date or some  
4 other options that are suitable to the commission.  
5 In the event that, like we had this year, and can do  
6 it in October; we're going to be back in that same  
7 mode again of circulating letters and doing that.  
8 and just having that in mind, if there's some way we  
9 can draft that language to give us as much  
10 flexibility as possible in setting that meeting  
11 date.

12 MR. BARFIELD: Well, we have the flexibility  
13 to move it to any time we want it by a letter of  
14 consensus. I think the rule is just to provide our  
15 default position. I think August worked well. So  
16 let's -- again, we'll let the engineering committee  
17 provide us some recommendations. But I -- from my  
18 standpoint, just moving the default to the end of  
19 August, and then we can always adjust it further if  
20 we need to for the individual year. So appreciate  
21 that. But again, we'll get you some dates and we'll  
22 pin down a location. But anticipating the second  
23 week in August in Colby or something of that nature.  
24 Okay. If there's nothing else to come before the  
25 administration, I would move adjournment.



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MR. WOLFE: Second.

MR. BARFIELD: All in favor say aye.

MR. WOLFE: Aye.

MR. DUNNIGAN: Aye.

MR. BARFIELD: Aye. Thank you very much.

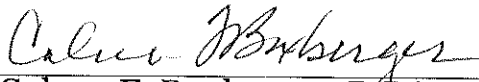
\* \* \* CONCLUSION OF MEETING AT 10:08 A.M. \* \* \*

C E R T I F I C A T E

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I, Coleen F. Boxberger, Registered Professional Reporter, do hereby certify the above and foregoing proceeding was taken at the time and place as specified; that the same was taken before myself in shorthand and later transcribed and extended into typewritten form to the best of my ability, and is a true and correct extension hereof;

That I am not counsel nor relative of any of the parties or otherwise interested in the event or outcome of this matter.

  
\_\_\_\_\_  
Coleen F. Boxberger, R.P.R.  
P.O. Box 184  
Russell, KS 67665-0184