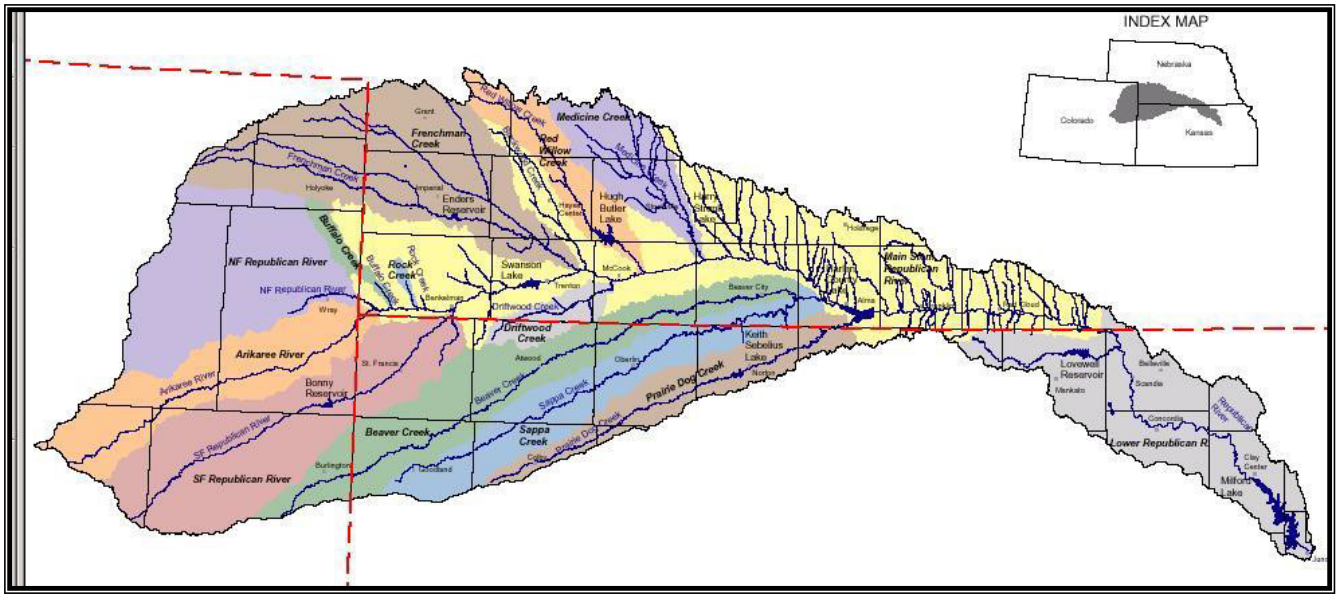
REPUBLICAN RIVER COMPACT ADMINISTRATION

61ST ANNUAL REPORT

FOR THE YEAR 2021



BURLINGTON, COLORADO

AND VIRTUAL VIA ZOOM

AUGUST 31, 2022

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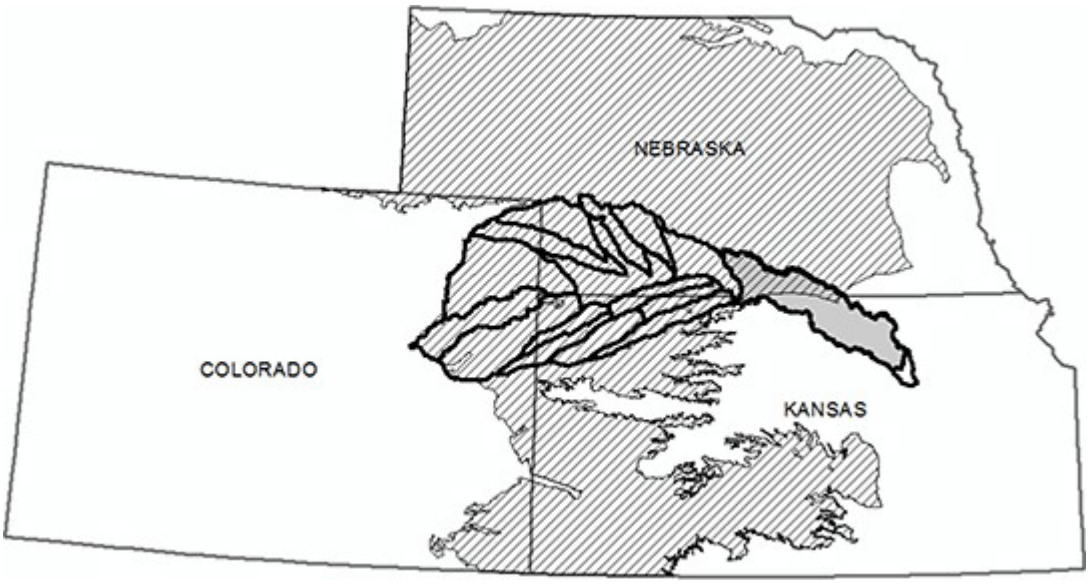
REPUBLICAN RIVER COMPACT ADMINISTRATION

Annual Meeting

August 31, 2022

Burlington, Colorado

and virtual via Zoom



SUMMARY AND MINUTES OF THE 2021 ANNUAL MEETING OF THE
REPUBLICAN RIVER COMPACT ADMINISTRATION

AUGUST 31, 2022
BURLINGTON, COLORADO, AND VIRTUAL VIA ZOOM

Summary & Minutes

A transcript of this meeting was prepared by Wilson and Associates LLC (Exhibit A). This summary and minutes were based on the transcript of the meeting. The summary and minutes were reviewed by each of the states, and upon final approval by the Republican River Compact Administration (RRCA) will serve as the official minutes of this Annual Meeting of the RRCA.

Agenda Item 1: Introductions

The annual meeting of the Republican River Compact Administration was called to order by Colorado Commissioner and Chairman Kevin Rein at 10:02 a.m., August 31, 2022. Commissioner Rein asked for each commissioner to introduce attendees from their states. A typed list of all attendees is attached as Exhibit B, which also includes the original signed attendance sheets (for those attending in person). Notable attendees include:

Name	Representing
Chris Beightel	Kansas Engineering Committee Member
Kari Burgert	Nebraska Engineering Committee Member
Ivan Franco	Colorado Engineering Committee Member and EC Chair
Justin Lavene	Nebraska Attorney General's Office
Earl Lewis	Kansas Commissioner
Kevin Rein	Colorado Commissioner and Chair
Thomas Riley	Nebraska Commissioner
Jesse Bradley	Nebraska Department of Natural Resources
Dan Steuer	Colorado Attorney General's Office
Mike Sullivan	Colorado Deputy State Engineer
Kurtis Wiard	Kansas Attorney General's Office
Chelsea Erickson	Kansas Division of Water Resources

Agenda Item 2: Adoption of the Agenda

Commissioner Rein introduced the proposed draft agenda and asked if there were any changes to the draft agenda. Hearing no requests for changes, Commissioner Riley moved that the draft agenda be adopted as proposed. Commissioner Lewis seconded the motion. The commissioners unanimously approved the agenda. A copy of the final agenda is attached as Exhibit C.

Agenda Item 3: Status of the Annual Report for the year 2020 and possible action by the RRCA

Commissioner Rein called for action on the completed RRCA Annual Report for the year 2020. Commissioner Lewis moved that the RRCA accept the Annual Report for the year 2020. Commissioner Riley seconded the motion. The commissioners unanimously accepted the report.

Agenda Item 4: Commissioners' Reports

a. Kansas:
   i. Commissioner Lewis noted that one of the most pressing issues facing Kansas was the ongoing drought, particularly in the western third of the state. The drought had resulted in many parts of the state coming under minimum desirable streamflow (MDS) conditions. (The meeting was briefly interrupted by online participants.) Upon resuming, Commissioner Lewis explained that when MDS conditions are met, junior water users will be curtailed.
   ii. Commissioner Lewis reported that Kansas had to curtail 241 water rights in the Lower Republican River basin, from the state line to about Milford, from April through July, due to MDS conditions brought on by drought.
   iii. Commissioner Lewis noted that the Kansas Legislature had been fairly active during the past year. Notably, the Kansas House of Representatives formed a new Water Committee. This new committee proposed a bill that would reorganize state agencies moving water-related duties into a new agency for water and environment. The proposed bill also included approximately $12 million in annual funding and made changes to the ways that groundwater management district (GMD) boards are elected.
   iv. Commissioner Lewis noted that the proposed bill was fairly controversial and might include dedicating 10 percent of existing sales tax to water issues, creating approximately $50 million of annual funding for water-related projects. Commissioner Lewis noted that a joint interim committee had been formed to continue the work of the House Water Committee between legislative sessions and he was curious to see what would come of this proposal in the next session.
   v. Commissioner Lewis reported that the Kansas Legislature also initiated a legislative post audit to investigate the GMDs: what they have accomplished, how their programs work, and how they are funded. The findings were expected to be presented during the next legislative session.
   vi. Commissioner Lewis noted that funding had been pretty good during the past year and that Kansas had been paying down debt. This resulted in a debt reduction of approximately $81 million to the US Army Corps of Engineers, which was good news from a water planning and funding standpoint.
   vii. Commissioner Lewis reported that the Kansas Water Office (KWO) had updated the Kansas Water Plan at their last meeting. This action is supposed to occur about every five years. However, the last Water Plan was adopted in 2009, with the subsequent adoption of the Governor's 50-year Water Vision occurring in 2015. Therefore, the recent update was an important step in guiding Kansas water policy.
   viii. Commissioner Lewis noted that 2022 marked the 10th year of the Sheridan 6 Local Enhanced Management Area (LEMA) and the 5th year of the Northwest Kansas GMD

No. 4 (GMD4) LEMA. LEMAs must be reviewed for potential renewal before their term expires (every five years, for these two LEMAs). Therefore, in July, Kansas held hearings in Hoxie and Colby regarding the proposed renewal of both LEMAs (which would be the second renewal of the Sheridan 6 LEMA). A decision was expected soon regarding whether those LEMAs would be continuing for additional five-year terms.

ix. Commissioner Lewis reported in a prior meeting, he had noted that following the establishment of the Wichita County LEMA, the Western Kansas GMD No. 1 (GMD1) had submitted a proposed LEMA plan for the remaining four counties in its area. In July, a plan for the 4 county LEMA was submitted with an initial-hearing to be held to consider establishing a five-year LEMA in the proposed area.

x. Commissioner Lewis noted that the monies received from Colorado had been targeted towards cost-sharing irrigation technology along the South Fork Republican River. Kansas still had a little over $1 million that had not yet been spent, which could continue to improve efficiency and assist water users in the area.

xi. Commissioner Lewis reported that there had been significant activity along the Courtland Canal, from Guide Rock to Lovewell, related to gate automation funded by a WaterSMART grant. There was also an additional grant which would allow the Kansas Bostwick Irrigation District (KBID) to automate four main laterals and improve efficiency. KBID reported efficiency improvements of approximately 10% from these actions and that more water was reaching the fields.

xii. Commissioner Lewis noted that GMD4 was developing a Certified Irrigator Program similar to the Master Irrigator Program that exists in Colorado and Texas. There was discussion at the KWO of taking the program statewide in the future.

xiii. Commissioner Lewis noted that the Kansas Department of Health and Environment had been sampling wells, primarily domestic wells, in northwest Kansas, primarily from Prairie Dog Creek in the past year, for uranium and sulfates, which are known issues along the Arkansas River both in Kansas and Colorado. They also sampled for nitrates and other contaminants that can cause problems for groundwater users. Wells in Beaver and Sappa Creek are to be sampled next year.

xiv. Commissioner Lewis reported that Amber Wave, a private company, was developing a wheat-processing plant in Phillipsburg that would be one of the largest wheat processing plants in the nation. This was expected to result in about $250 million invested in the Phillipsburg area and to be positive for the surrounding region.

xv. Commissioner Lewis noted that that the Kansas Governor had formed a subcabinet called the Infrastructure Hub to coordinate obtaining federal funding for infrastructure projects.

xvi. Commissioner Lewis concluded by noting difficulties in recruiting and retaining good staff in the current competitive job market and that this was a topic of discussion within the agency. He hoped the Legislature would take note as well. Commissioner Lewis then called on Danielle Holzwarth, so that she might provide an update on Regional Conservation Partnership Program (RCPP) funding.

xvii. Danielle Holzwarth introduced herself as the Cheyenne County Conservation District (District) manager. She informed the RRCA that her District had submitted a RCPP application to the Natural Resources Conservation Service (NRCS). RCPP is intended for situations in which a conservation or natural resource concern is present in the area and needs are not being met. This application resulted in the District receiving $500,000

of the Colorado settlement monies from the KWO. In partnership with the Kansas Department of Wildlife and Parks; Ducks Unlimited; the Kansas Department of Agriculture, Division of Conservation; and the Western Prairie Resource Conservation and Development Council (Western Prairie RC&D), they raised a total of $2.76 million. This funding will be used for activities such as clearing red cedars, salt cedars, and Russian olives out of the basin. Monies will also be used to convert windmills to solar pumps and upgrade equipment. The District hoped to attract applicants for the monies next spring.

b. Colorado:
   i. Commissioner Rein began his report by touching on the drought conditions present throughout the state of Colorado.
   ii. Commissioner Rein reported that the Colorado River was once again in the news and that Colorado was in negotiations with the Federal Government regarding the Colorado River Compact. The seven states were working hard to manage lake levels in Lake Powell and Lake Mead. The upper basin states were in compliance with the Compact and were underusing their allocations. Nevertheless, Colorado was seeing releases from Colorado River Storage Project reservoirs per the Drought Response Operations Agreement.
   iii. Commissioner Rein reported that last year's releases from Blue Mesa Reservoir totaled about 36,000 acre-feet, along with additional releases from Flaming Gorge Reservoir. This year, about 500,000 acre-feet of releases were sourced entirely from Flaming Gorge Reservoir. In the same effort, about 480,000 acre-feet from Lake Powell that would have been released per the 2007 guidelines would not be released.
   iv. Commissioner Rein gave an update regarding the Yampa River basin in Colorado, where measurement rules are being finalized which would require measuring devices for surface water and ground water diversions. Those rules are expected to be filed with the water court in the coming months. Sustainability continues to be a concern in the basin and is a work in progress.
   v. Commissioner Rein reported that, in the Rio Grande basin in Colorado, there were seven sub-districts that were in full compliance with the rules through their annual replacement plans.
   vi. Commissioner Rein noted that Colorado was also dealing with the same workforce difficulties as every other state and that there were several vacancies throughout the Division of Water Resources that his staff were working to fill. The Colorado General Assembly had approved three new positions for the Division of Water Resources, effective July 1st.
   vii. Commissioner Rein reported that on about July 8th a notice was released that the Arkansas River Compact Administration had approved a resolution allowing the pilot operation of a multipurpose account in John Martin Reservoir. The multipurpose account allows Colorado water users to store water in John Martin for more efficient and effective use of the water resource.
   viii. Commissioner Rein gave a couple of updates regarding the Republican River basin. In February, Colorado approved the compact administration rules for the Republican River Basin. This has been a long process that started in January of 2019 and will accomplish two main goals with other smaller ones. First, they affirmed the use of the

compact compliance pipeline. Second, they allowed an alternative mechanism for augmentation for compact compliance for anyone who does not want to use the compact compliance pipeline.

ix. Commissioner Rein concluded by touching on the amended 2016 resolution that requires the retirement of 10,000 acres in the South Fork Republican River basin by 2024. He stated that he expected this requirement would be reached due to all the hard work of staff in the basin.

c. Nebraska:

i. Commissioner Riley began his report by recapping that Nebraska staff had been out of the office for a couple of years due to Covid. He noted the Department had been working remotely up until April of 2022, as a new office space was being constructed.

ii. Commissioner Riley reported that several water initiatives were moving through the Nebraska Legislature this year and provided updates on a few of the most notable bills. The first was a surface water infrastructure bill that would provide $50 million in the form of a grant for about 60 irrigation districts across Nebraska. The grant program provides $9 for every $1 that the districts put towards critical surface water infrastructure projects.

iii. Commissioner Riley reported that Nebraska had received a large amount of money for a program supporting economic development and infrastructure across the state at a number of locations, including Lake McConaughy, northeast Nebraska, and a potential lake structure between Lincoln and Omaha.

iv. Commissioner Riley reported that Nebraska was also looking at the potential for Perkins County Canal on the South Platte River.

v. Commissioner Riley noted staffing issues were also affecting Nebraska and that he felt positive about their ability to fill current staff openings, although it would be a challenge.

vi. Commissioner Riley gave an update on the current drought that was affecting large portions of the state. There was an extensive amount of fire activity early in the irrigation season that caused damage to a number of facilities and infrastructure throughout the Republican River basin, noting that damage was mostly concentrated in the central part of the basin.

vii. Commissioner Riley reported that precipitation received across the basin was about 80 percent of normal. Although this was not ideal, the good news was that Harlan County Lake had good starting and ending supplies, which helped in 2022.

viii. Commissioner Riley noted that Water Short Year Administration was not required for 2021 and that it was not a Compact Call Year. Nebraska continued to be in compliance with the Compact in 2021. 2022 was also not a Compact Call Year.

ix. Commissioner Riley stated that in Nebraska, local Natural Resources Districts (NRDs) manage groundwater and the state Department of Natural Resources (NeDNR), of which he is the director, manages surface water. This is done on a conjunctive management basis using Integrated Management Plans (IMP). Most recently, NeDNR and Tri-Basin NRD have been working on updating the NRDs IMP.

x. Commissioner Riley reported NeDNR and NRD's had been working closely with various stakeholders on a drought-resilience planning exercise to find ways to prepare for and mitigate drought impacts in the state.

xi. Commissioner Riley touched on canal automation work that had been done on Frenchman Cambridge Irrigation District's (FCID) canals using WaterSMART grant monies. Bostwick Irrigation District in Nebraska (NBID) is also looking at delivery efficiency improvement projects for Superior Canal. $12.6 million have been spent in the Middle, Lower, and Upper Republican NRDs on irrigation decertifications and to install telemetry meters and soil moisture probes.

xii. Commissioner Riley reported that there might be interest in the RRCA regarding the proposed Platte-Republican Diversion project. This proposed project was going through an administrative procedure for standing, which NeDNR continues to work through the process.

xiii. Commissioner Riley reported that NeDNR was also discussing working with the Lower Republican NRD on their Thompson and Turkey Creek projects. These projects would potentially provide augmentation and offsets for the NRD.

xiv. Commissioner Riley concluded by reporting that Nebraska was fortunate to have $10 to $12 million a year in the Water Sustainability Fund that can fund projects throughout the basin. Approximately 12 projects costing an estimated $8 million have been invested in so far.

Agenda Item 5: Federal Reports

a. U.S. Bureau of Reclamation:

i. Craig Scott introduced himself as the representative for the U.S. Bureau of Reclamation (USBR) Nebraska-Kansas Area office. He noted that he prepared and electronically submitted a report to be entered into the record and went on to provide a brief summary of said report.

ii. Mr. Scott noted that, in 2021, precipitation varied throughout BOR USBR projects in the Republican River basin. Precipitation was below average in the western part of the basin and a bit better in the eastern part of the basin. Precipitation at Swanson Lake averaged 67 percent for the year, while Harlan County Lake reached roughly 121 percent for 2021.

iii. Mr. Scott went on to report that storage in Harlan County Lake reached flood pool in April of last year and that various flood releases were made through June. At that time, irrigation demands dictated releases.

iv. The storage in the flood pool was split between NBID and KBID and releases began towards the end of June.

v. Mr. Scott reported that, at the beginning of the season, irrigation supply in Harlan County Lake was approximately 141,000 acre-feet, meaning that 2021 was not a water short year.

vi. Mr. Scott reported that Enders Reservoir was currently at 16 percent of maximum capacity and that no releases for irrigation from Enders Reservoir had occurred since 2003. Enders Reservoir was currently at dead pool and water could not be released through the outlet works.

vii. Mr. Scott reported that Swanson Lake was currently at 25 percent capacity. Hugh Butler Lake was currently at 29 percent capacity. Harry Strunk Lake was currently at 44 percent capacity. Keith Sebelius Lake in Kansas was currently at 39 percent capacity. Harlan County Lake was currently at 78 percent capacity and Lovewell

Reservoir was currently at 44 percent capacity. These levels reflected generally limited water supplies for 2021 and 2022.

viii. Mr. Scott reported irrigation supplies from Harlan County Lake were approximately 131,000 acre-feet at the beginning of the 2022 irrigation season, which means 2022 will not require Water-Short Year Administration. Mr. Scott noted that this was the fourth year in a row in which water short administration was not in effect. Mr. Scott noted that it is too early to predict irrigation supply for 2023, but with the current supplies, the trend of no Water-Short Year Administration could change.

ix. Mr. Scott made several comments regarding the Bostwick Memorandum of Agreement (MOA). The MOA identified the procedures for sharing water supplies in Harlan County Lake between NBID and KBID. It was a three-year agreement developed and signed in 2018, making 2021 the last year of the agreement. Mr. Scott stated that the parties agreed to sign a long-term agreement to continue the current procedures of the 2018 MOA which were in place to facilitate the RRCA's 2016 resolution.

b. U.S. Army Corps of Engineers: No report was presented.

c. U.S. Geological Survey:

i. John Miller discussed the U.S. Geological Survey (USGS) report for 2021 (Exhibit E). He thanked the commissioners for the opportunity to present the work done by the USGS in the Republican River Basin over the past year. The report was shared on the computer screen.

ii. Mr. Miller reported that, in 2021, the basin continued to fall deeper into drought, especially in the western part of the basin in Nebraska.

iii. Mr. Miller noted that, in 2021, there were two significant runoff events at the Republican River gage near Orleans but no runoff events above baseflow at the Republican River gage at McCook. He noted that the two runoff events at Orleans provided significant bank storage water and buffering capacity within the basin.

iv. Mr. Miller reported that, as dry and hot conditions persisted, streams were going dry quickly in 2022 as a result of the reduced runoff. These effects had been seen as early as June, where normally they would occur in July or August.

v. Mr. Miller highlighted that the Republican River gage at McCook and the Rock Creek gage at Parks reported the lowest mean discharge values for 83 years of record during the 2021 water year.

vi. Mr. Miller reported that ten out of the twelve RRCA gage sites reported lower mean discharge values in 2021 than in 2020. At present, there are 10 gage sites reporting dry or near dry channels.

vii. Mr. Miller reported that the USGS makes a considerable effort to monitor low flows, which can often be harder to accurately measure than flooding conditions. This year, the USGS developed numerous new low flow ratings, given the drought conditions in the basin.

viii. Mr. Miller concluded his report by stating that about six years ago, an effort was made to update and finalize discharge data earlier in the year. Currently, all the Republican River gage sites had final data through June or July of the current water year.

ix. Commissioner Riley asked if the USGS had found that, after applying the corrected gage ratings, discharge values were lower than expected. Mr. Miller informed the

RRCA that the results went both ways, resulting in either higher or lower measured discharge values.

x. Commissioner Lewis asked if the USGS was doing any work to investigate future streamflow conditions, considering that lower flows seemed to be the new normal. Commissioner Lewis noted that in the Arkansas River basin, there had been a recent change to what is considered normal precipitation, lowering it by about 10 percent.

xi. Mr. Miller informed the group he was unable to comment on such matters.

Agenda Item 6: Committee Reports

a. Engineering Committee: Chair Ivan Franco reviewed the Engineering Committee (EC) report (Exhibit F). Before beginning, he thanked the other members of the Engineering Committee for all their work.

i. Assignments from the 2021 Annual Meeting

- The EC met four times since the last annual meeting and completed the following assignments: (1) hold quarterly meetings, (2) exchange information listed in the Accounting Procedures and Reporting Requirements, (3) finalize the 2021 accounting, (4) continue work on documenting historical changes to the RRCA Accounting Procedures, (5) provide updates on the progress of new and ongoing management strategies for maintaining Compact compliance, (6) continue development and maintenance of the RRCA administrative website that serves as an informal page for the public and provide regular updates to the Engineering Committee, (7) continue work and provide updates on improving accounting tools developed by the Engineering Committee, (8) prepare the 2021 RRCA annual meeting report, and (9) retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

ii. Committee Recommendations to the RRCA

- Data exchange and modeling results for 2021: The EC recommended the proposed 2021 accounting presented in Attachment 2 of the EC report and a spreadsheet titled "RRCA Accounting 2021 Final.xlsx" for approval by the RRCA. Upon approval of the accounting, the spreadsheet will be placed on the RRCA public website.
- Modeling and data tasks: The EC recommended that Principia Mathematica continue in 2022 to maintain the web-based accounting tool and perform periodic modeling and accounting updates, at the same level of service as in 2021.
- Document summarizing historical changes to the RRCA Accounting Procedures: The EC noted that the document summarizing historical changes to the RRCA accounting procedures had been brought up to the current date and was being actively maintained by the EC. The EC recommended that this document continue to be actively maintained by the EC as an ongoing assignment.
- The EC recommended that they continue to evaluate the usefulness of the Kansas climate-based pumping estimator in potentially improving early groundwater modeling forecasts as part of assignment 7, which will be discussed shortly.
- The EC requests discussion on the recommended assignments and agreement on final EC assignments for next year.

iii. Recommended Assignments for Engineering Committee: Chair Franco covered the list of recommended assignments and referred commissioners to the EC report for details

of the assignments.

- Meet quarterly to review tasks assigned to the committee;
- Exchange the information listed in the Accounting Procedures and Reporting requirements by the deadlines listed;
- Finalize the 2022 accounting and recommend it for approval by the RRCA;
- Maintain and publish updates to the Accounting Procedures tracking document;
- Provide updates on the progress of new and ongoing management strategies for maintaining Compact compliance;
- Continue development and maintenance of the website;
- Continue work and provide future updates on improving accounting tools (including evaluation of Kansas's climate-based pumping estimator);
- Prepare the 2022 Annual Meeting Report for approval at the 2023 Annual Meeting.

iv. Discussion of Engineering Committee Report and Assignments

- There were no questions or discussion.

Agenda Item 7: New Business and Assignments to Compact Committees

a. Action on Engineering Committee Report and assignments
   i. Commissioner Riley moved that the EC Report and associated assignments be accepted. Commissioner Rein seconded the motion.
   ii. The commissioners voted, and the motion passed unanimously.

b. Action on 2021 Accounting
   i. Commissioner Lewis moved that the 2021 accounting results be approved and adopted. Commissioner Riley seconded the motion.
   ii. The commissioners voted, and the motion passed unanimously.

Agenda Item 8: Other Business

a. There was no other business introduced by the commissioners.

Agenda Item 9: Remarks from the Public

a. Mr. Will Bledsoe from the Republican River Water Conservation District (RRWCD) began by discussing the important work of the District in the task of retiring 25,000 acres in the South Fork Republican River Basin. He noted that having sufficient funds would be key to reaching this goal and that Senate Bill 28 secured approximately $30 million to help leverage US Department of Agriculture Environmental Quality Incentive Program (EQIP), Conservation Reserve Enhancement Program (CREP), and Risk Avoidance and Mitigation Program (RAMP). Mr. Bledsoe reported progress toward the 10,000-acre retirement milestone. The District was focusing most of their resources on retiring the 25,000 acres, and they were seeing good progress. There were no questions for Mr. Bledsoe.

b. Ms. Brandi Baquera introduced herself as the coordinator of the Colorado Master Irrigator

Program. She noted that Kansas had shown interest in the program earlier in the meeting and that she would be happy to help in any way that she could to get a similar program started in Kansas. She noted that the Colorado Master Irrigator program had begun in 2018 and 2019 with the help of the Republican River Water Conservation District and others. The program operated in 2020 and 2022, with an interruption in 2021 due to Covid. There had been 44 graduates over those two programs, representing 50,000 irrigated acres in the Republican River basin. The program was working on efficiency improvements and conservation, along with data collection. She noted that Senator Simpson had advocated to expand the program to the Rio Grande basin this year, resulting in another 50,000 acres of coverage. The program hoped to continue expanding into the Four Corners region and the South Platte River Basin soon. There were no questions for Ms. Baquera.

c. Mr. Kenny Helling, representing Yuma County on the Republican River Water Conservation District (RRWCD) Board, spoke next. He started by sharing information pertaining to the South Fork Republican River Restoration Coalition. Their efforts had been focused on restoring the channel through Bonny Reservoir, where there are many trees and shrubs, the removal of which was expected to improve flows crossing the Kansas state line. Mr. Helling went on to note that the RRWCD was working hard to retire the required 25,000 acres along the South Fork Republican River. There were no questions for Mr. Helling.

d. Mr. Kevin Penny introduced himself as an irrigator, dryland farmer, and small feedlot operator located southeast of town [Burlington, CO]. He mentioned the numbers of people who learned how to water ski on Bonny Reservoir. He noted the difficulty in coming to terms with the reservoir's loss but that he understood the need for it. He spoke of his family's roots in the region and wished everyone good luck in making good decisions for the people of the Republican River basin.

e. Ms. Deb Daniel, general manager of the Republican River Water Conservation District (RRWCD), began by noting the importance of holding these meetings in the basin and thanked all participants for their attendance. She spoke of the 2016 Resolution and all the work the RRWCD had done to meet this goal, specifically the retirement of 10,000 acre-feet by 2024. Ms. Daniel highlighted the RRWCD staff and board members who had done the hard work required to meet the target goals. The water use fee had been more than doubled to assist with ongoing compliance and conservation efforts within the basin. Ms. Daniel noted that a grant for $99,000 had been received from the Colorado Water Conservation Board (CWCD) and another for $120,000 from The Nature Conservancy. These funds were put towards an initial design to restore streamflow and fish habitat in the basin. Commissioner Rein asked for the exact number of acres currently set for retirement. Ms. Daniel informed the RRCA that that was 3,723 acres.

f. Mr. Rod Lenz, Republican River Water Conservation District Board member, expressed appreciation for everyone's attendance. He noted that the attitudes of all involved surrounding water had changed in the last five years. There was now much more involvement and interest in finding solutions. He noted the overall better relationship between the three states and highlighted this as a positive change.

g. Mr. Brad Edgerton, general manager of the Frenchman Cambridge Irrigation District (FCID), thanked Colorado for their efforts to comply with the Compact. He discussed the contract FCID has with the USBR to receive water from Swanson Reservoir, serving 18,000 acres directly and another 6,000 through another canal. FCID had invested $3.5 million in canal automation and other conservation efforts. He noted the difficulties caused by the current drought, which had left them with a seven-inch allocation. They were charging $52.20 per acre-foot to producers. There were no questions for Mr. Edgerton.

Agenda Item 10: Future Meeting Arrangements

Commissioner Rein noted that Colorado will host the next RRCA meeting. The commissioners agreed that there was no need for additional discussion of meeting arrangements at that time.

Commissioner Lewis took the opportunity to acknowledge the public comments and second the importance of the 2016 resolution and the overall change in attitude towards water in the basin.

Agenda Item 11: Adjournment

The meeting was adjourned at 11:52 a.m. on August 31, 2022.

The August 31, 2022, Annual Meeting report is hereby approved by unanimous vote of the RRCA on this 31st day of August 2023.

As indicated by their signature and date below, the RRCA Commissioners agree that the report was approved by RRCA on the date indicated above.

Kevin D. Rein DATE SIGNED: 8-31-2023
Kevin Rein, Chair and Colorado Commissioner

Earl D Lewis Jr DATE SIGNED: 8/31/2023
Earl Lewis, Kansas Commissioner

Thomas Riley DATE SIGNED: 5 SEP 2023
Thomas Riley, Nebraska Commissioner

Exhibits

Exhibit A:	Transcript of the 2022 Annual Meeting
Exhibit B:	Annual Meeting Attendance with Signature Pages
Exhibit C:	Agenda of the 2022 Annual Meeting
Exhibit D:	Bureau of Reclamation Report 2021
Exhibit E:	U.S. Geological Survey Report 2021
Exhibit F:	Engineering Committee Report 2021

Exhibit A: Transcript

2022 ANNUAL MEETING OF THE
REPUBLICAN RIVER COMPACT ADMINISTRATION

TRANSCRIPT OF PROCEEDINGS
August 31, 2022

The 2022 Annual Meeting began Wednesday, August 31, 2022, at Burlington Community Center, 340 South 14th Street, Burlington, Colorado 80807, commencing at the hour of 10:02 a.m. Mountain Time, with attendees appearing in person and via Zoom videoconferencing.

A P P E A R A N C E S

Colorado:	Kevin G. Rein (Commissioner and Chair) Ivan Franco Daniel Steuer Mike Sullivan Willem Schreuder
Nebraska:	Tom Riley (Commissioner) Kari Burgert Justin Lavene Jesse Bradley
Kansas:	Earl Lewis (Commissioner) Chris Beightel Chelsea Erickson Stephanie Kramer (Staff Attorney)
Also Present:	Curtis Wiard Sam Capps Members of the Public Representatives from Government Agencies

P R O C E E D I N G S

KEVIN REIN: Good morning, everyone. Thank you for your attendance today. My name is Kevin Rein. I'm a state engineer, State of Colorado and Division of Water Resources, and I will call this meeting to order.

This is the 2002 Annual Meeting of the Republican River Compact Administration. Today is August 31st, 2022. I am going to begin with introductions, and then I will hand it over to my counterparts from Kansas and Nebraska.

And then, just so you can prepare, I'm going to ask everyone in the audience to quickly go down the line and introduce yourselves so we all know who's here today. And I'll begin. Again, I'm Kevin Rein, State Engineer of Record in the Division of Water Resources. This is Ivan Franco from our office in the chair next to me, and Dan Steuer from the Attorney General's office, the Colorado Attorney General's office.

I want to point out, on the side, we've got Mike Sullivan, Deputy Director of the Division of Water Resources. In the back, Chris Kucera, Devin Ridnour, and Brandi Baquera from the Division of Water Resources, some of our staff out here. And I believe that's who we have from the Division of Water Resources.

So I want to point out that, also in the back -- I can't quite see -- but we have Kelly Romero-Heaney, the Executive Director's Office at the Division of Water Resources, and Nate Pearson. Are you also from the Executive Director's Office? I think I said Division of Water Resources; Department of Natural Resources. Sorry; Department of Natural Resources.

With that, Tom, would you like to introduce your team?

TOM RILEY: Hi there. Good morning. I'm Tom Riley. I'm the Director of Department of Natural Resources for Nebraska. With me at the table today is Justin Lavene, from the Attorney General's Office in Nebraska, and Kari Burgert, one of our teammates in the department.

And keeping with Kevin's process here, Jesse Bradley, my assistant director, is in the front row from the department, and we also have Sam Capps, one of our teammates as well. She is in the back. I didn't see you back there. Thanks for hosting us today, and thank you.

KEVIN REIN: Thank you. Tom and Earl?

EARL LEWIS: Thank you, Mr. Chairman. Earl Lewis. I'm the chief engineer at the Division of Water Resources. Appreciate it. Happy to be here, and thank

you for hosting. I want to thank the Republican River Water Conservation District director for hosting last night, and an evening with folks from other states. We appreciate the hospitality.

At the table with me today is Chris Beightel, who's our head of the Water Management Program; Stephanie Kramer, attorney with the Department of Agriculture; Kurtis Waird, with our Attorney General's Office in the state of Kansas. Also here today, Chelsea Erickson with our water resources, out of Stockton; and Keadron Pearson for Kansas Water Office. So I appreciate all of their help and support today.

KEVIN REIN: Thank you. And, with that, can we begin with the introductions of the audience.

SPENCER SCHLEPP: Spencer Schlepp, Cheyenne County, Kansas, member of the Conservation District Board. And, in general, just watching out what's going on with the water.

DONNA GIBSON: Donna Gibson, from the Yuma County area, and I just want to know what's happening.

DON BLANKENAU: Hi. My name is Donald Blankenau. And I'm from (unintelligible) Nebraska.

THE REPORTER: Say your name again, please.

DON BLANKENAU: Don Blankenau.

KEVIN REIN: Pardon me. I just want to say,

be sure and enunciate well. These mics have a lot of reverb, and it's hard to hear for our court reporter. Just really enunciate when you say your names.

DAVID HERSCHEL: David Herschel, representing Casey Electric Association. We serve all the irrigation wells in Kit Carson County.

WILL BLEDSOE: Yeah. Will Bledsoe, South Flagler, Colorado, with the RRWC. Just a irrigator in the district.

DAVID ROBBINS: I'm David Robbins. I'm counsel to the Republican River Water Conservation District.

TIM PAUTLER: Tim Pautler. I represent the Colorado Groundwater Commission for the -- for Republican River Conservation District.

DEB DANIEL: Good morning, everyone. My name is Deb Daniel. I'm general manager of Republican River District, and I'm so glad that you all are here.

PEYTON LIMING: Good morning. My name's Peyton Liming, and I represent the RRWCD.

KEADRON PEARSON: Keadron Pearson, and I'm from Kansas Water Office.

DANIELLE HOLZWARTEN: Danielle Holzwarten. I am the Cheyenne County Operations District Manager in St. Francis.

CHELSEA ERICKSON: Chelsea Erickson, DWR for Stockton.

DALE CRAMER: Dale Cramer, Director of Frenchman Cambridge Irrigation District at Cambridge, Nebraska.

KEVIN PENNY: Kevin Penny, farmer and irrigator here in Burlington, and a director of RRWCD.

BRAD EDGERTON: Brad Edgerton, general manager for Frenchman Cambridge Irrigation District.

AARON THOMPSON: Aaron Thompson, area manager for the Bureau of Reclamation's Nebraska/Kansas office.

PETE WILSON: I'm Pete Wilson. I'm the District Manager for (unintelligible).

ROD LENZ: Rod Lenz, for the RRWCD.

TOM WILMOTH: I'm Tom Wilmoth. I'm outside counsel for the State of Nebraska.

KENNY HELLING: Kenny Helling, representing Yuma County in the RRWCD.

ROBERT SAKATA: Robert Sakata, Sakata Farms in Brighton, Colorado, and Governor Appointee to the Colorado Water Conservation Board.

CAROLYN TALBERT: Carol Talbert, Cheyenne Groundwater Management District Manager.

LORI MARINTZER: I'm Lori Marintzer, and I'm with the USGS in Kansas.

CRAIG SCOTT: Craig Scott, Bureau of Reclamation. I'm from McCook, Nebraska.

DON BROWN: Don Brown, farmer and rancher from Yuma, Colorado, here with RRWCD and former Colorado Commissioner of Agriculture.

JOHN MILLER: John Miller with the U.S. Geological Survey in North Platte, Nebraska.

NICK SIMONSON: Nick Simonson with the Lower Republican Natural Resources District in Nebraska.

JOSH LECHMAN: Josh Lechman. I'm the (unintelligible).

THE REPORTER: Louder, please.

JOSH LECHMAN: I'm Josh Lechman. I'm the Sedgwick County representative for the Republican River Water Conservation District.

JOHN CURE: John Cure, landowner between (unintelligible) and -- on the river between the Bonny Dam and the state of Kansas.

COREY PELTON: Corey Pelton, District Director of the Colorado Farm Service Agency.

IVY REYNOLDS: Ivy Reynolds, conservation specialist for the Farm Service Agency.

WOODY WOODS: And I'm Woody Woods with the Farm Service Agency, District Director.

MATT BLECHA: Matt Blecha, Division of Water

Resources. I snuck in after Kevin was announcing us.

BOB HASTINGS: Bob Hastings, Colorado River Water.

NATE PEARSON: Nate Pearson, Colorado Department of Natural Resources.

ELIZABETH SCHODER: Elizabeth Schoder, Colorado Water Conservation Board.

ROD MASON: Rod Mason, manager of the Republican River Water Conservation District Arikaree Water District, and I'm also a director on the Republican River Board.

DARLENE CARPIO: Good morning. I am Darlene Carpio, Regional Director for Congressman Kenneth Buck.

WILLEM SCHREUDER: Willem Schreuder, chief hot washer for the River Committee.

KEVIN REIN: Thank you, everyone. We've got everyone covered there. It's the last -- I'm sorry? Oh, okay. Online.

SAM CAPPS: So our virtual attendees, Alex Boyse from the MRNRD in Nebraska; Alexa Davis, with Nebraska DNR; Amelia Nills with KWO; Amy Zoler with Nebraska DNR; Brian Flynn, Nebraska DNR; Brian Lengel; David Brewster, the U.S. Bureau; Elizabeth Essecks, Nebraska DNR; Miles Morgan, U.S. Bureau; and Pete Gile.

KEVIN REIN: Thank you. Now, as the last

matter of acknowledgement, I do want to, as a group, collectively recognize the Republican River Water Conservation District board members that are here and say thanks for hosting us. And thank you to Deb Daniel for hosting us at the reception last evening. Thank you very much for that. That was very worthwhile. Good time spent.

With that, I will move into next item on the agenda, and that is, the draft agenda, and I'll ask my commissioners from Kansas and Nebraska, have you had a chance to look at the agenda, and do you have any comments or changes to that?

TOM RILEY: I move to adopt the agenda.

EARL LEWIS: I second that.

KEVIN REIN: Motion to adopt the agenda. All in favor.

THE PANEL: Aye.

KEVIN REIN: Next, I'd like to mention the status of the annual report for the year 2020 and ask, for the commissioners today, and have you had a chance to look at the report to your satisfaction? Do you have any questions for us, or are you willing to accept that annual report?

EARL LEWIS: I would move to accept 2020.

TOM RILEY: Second that.

KEVIN REIN: There's a motion and a second to accept the annual report. All in favor.

THE PANEL: Aye.

KEVIN REIN: That report is adopted. And next, we're going to move to commissioner's reports. And we'll start with Kansas.

EARL LEWIS: Thank you, Mr. Chairman, appreciate the opportunity here.

(Interruption in the proceedings from online participant.)

EARL LEWIS: That concludes my report.

THE AUDIENCE: (Laughter.)

SAM CAPPS: For the people that are online, if you do not have an affiliation, I'm actually just going to review for you, so if do you have an affiliation, please send us a message.

EARL LEWIS: All right. Thank you, Mr. Chairman.

(Interruption in the proceedings from online participant.)

IVAN FRANCO: Sorry, guys. Technology. The link is available on the website.

EARL LEWIS: It's not going to be that bad, I promise. So I'd like to thank our sister states here. Part of the biggest issue we're facing is continued

basin drought, and especially in the western third of our state.

Drought certainly has had a lot of challenges/impacts we don't like. Really challenging a lot of our users, especially in southwest Kansas, and, really, everywhere/statewide. That affects our users. But report on past our (unintelligible).

THE REPORTER: I'm having trouble hearing you. Could you speak real slow and enunciate your words.

EARL LEWIS: I'll try.

KEVIN REIN: Let's try this microphone. Is my voice a little clearer?

THE REPORTER: That's better, yes.

EARL LEWIS: We'll go and see if we can slow down. And that's a little clearer as well. So in addition to affecting our users, our state has been under minimum desirable stream pulsators, and --

(Interruption in the proceedings from online participant.)

KEVIN REIN: Can we pause the meeting until you resolve this?

(Discussion off the record.)

(Break from 10:16 a.m. to 10:26 a.m.)

KEVIN REIN: This is the first I know of

being Zoom boomed in a meeting. I'll call the meeting back to order. And, Mr. Lewis, please continue at the best spot before you were interpreted.

EARL LEWIS: Thank you. Appreciate that. It's a first for us as well. Pretty interesting. So anyway, we were talking about the minimum desirable stream flows, and what that really means is the water gets to a certain level, just junior water rights get shut off.

That affected about 241 water rights in the Lower Republican, from state line down to about Milford, starting in April and going through July. We've also had a couple of other areas in south-central Kansas that had the same action we had to take, based on those stream closures being caused by the drought.

Legislature has been fairly active the last couple of years. In fact, the Kansas House had a House Water Committee, which is not a typical thing, for the last few years. And, actually, this year had a bill they considered that would -- brought some pretty significant changes, including reorganizing the state agencies and creating a water environment agency, providing some additional funding, about another $12 million a year, give or take, and then changing some of the way that the groundwater management

district boards were elected.

That was fairly controversial and (unintelligible). Hopefully, they will make that a committee. There wasn't a substitute (unintelligible) committee that would have dedicated a -- 10 percent of the existing sales tax to water. And that would be 50 to $55 million per year.

(Unintelligible) actually House board, or the Senate, but it certainly got a lot of people's attention. In fact, there was an interim -- a joint interim committee considered in (unintelligible) and the last couple of days to talk about these issues, and we'll see what they come forward with in the next session.

In addition to the discussions going on, there's also a division of the legislature (unintelligible) tied to our state legislature called Colorado Legislative Post Audit in Colorado and Nebraska.

THE REPORTER: It was called what?

EARL LEWIS: Legislative Post Audit. And so, Post Audit, is my guess, when there's questions that the legislature has about an agency or a program, the last sort of questions and the staff about -- in trying to find answers to those questions.

And so they've got an audit this year related to the groundwater maintenance districts, looking at what they have accomplished, what their programs are, how they're funded, what they spend the money on. And so I expect we'll see the report back from that near the beginning of next legislative session. And so that may generate some discussions, actually, in the legislature as well.

I think, like maybe some other states, funding has been pretty good. Our revenues have been good in the state general fund for the last few years. And the state overall took an approach of trying to pay down debt, including water as well.

So our debt to Corps of Engineers related to purchase of reservoir storage, totaling about $81 million, paying off some bonds (unintelligible) water (unintelligible) employee fund to help water fund transfer.

So, in total, it was a pretty good year from planning funding for water statewide. So we'll see whether that carries forward.

We mentioned Keadron's here. In Keadron's water office, the water authority and the water office, created an update of the Kansas Water Plan at their last meeting. So that's supposed to be done about

every five years. The last water plan was adopted in 2009, and then, of course, we had the Governor's 50-year water vision, which was kind of similar in 2015. So that's a big step, really helping guide a lot of what goes on in the state of Kansas, water policy-wise.

We talked in the past about local enhanced management areas, or LEMAs. 2022 marks the 10th year of the Sheridan 6 LEMA. So they're typically five years. So it's been renewed once. It also marks the fifth year of the GMD4-wide LEMA, and so, in July, we had hearings at Hoxie and Colby on renewal of both of those LEMAs.

We'll have -- looking at record now in -- and making a decision in the next couple of months about continuing those LEMAs on for another five-year period.

I think we reported a couple of years ago, we had the same process for Wichita County, which is west-central Kansas, around Leoti. GMD1, which covers that area, has also submitted a LEMA Plan for the remaining four counties in GMD1. And July 1, we will have a hearing on that August 17th, with their goal of hopefully having a LEMA in place for those four counties starting next year, again, for a five-year period.

South Fork Republican, we've got some activity, of course, going on related to the funding that we received from Colorado. And a lot of that has been targeted towards cost-sharing primarily for irrigation technology. I know Dani Holzwarth and Spencer from Cheyenne County, here in a minute, might give us a little bit of update on the RCCP.

The conservation district is focusing on with some of that funding as well. There's still about a little over a million dollars that is to be spent in the South Fork Region, again, hoping to improve our use of the water efficiency and helping folks out there.

Downstream, from the Kansas Bostwick, there's been quite a bit of activity related to automation of gates, particularly along the Courtland Canal from Guide Rock down to Lovewell, partially funded by a WaterSMART Grant.

And there's another grant that's been -- Kansas Bostwick has gotten to automate the four main laterals; again, about another $700,000 project to improve the efficiency, and what, I think, the Bostwick District there is seeing is that their efficiency of delivery is now in the 65 percent range. For this time of year, it's typically about 55 percent.

So that means we're getting more water to the

fields than we have in the past, based on that automation of and burial of those laterals.

Just a couple of other items of interest. GMD4, Northwest Kansas, is working on a Certified Irrigator Program, much like the Master Irrigator Program that exists in Colorado and Texas. And so, been working not only that area, but in the Kansas Water Office to talk about taking that program statewide. They are hoping to launch that here in the near future.

Our Department of Health and Environment has been sampling some wells, primarily domestic wells in northwest Kansas, along with Fort Hays State University, primarily this last year from Prairie Dog Creek.

I think, in the past, we talked about some of our issues on the Ark with uranium and sulfates. We have some of the same geology in that part of the state that Colorado has in southeast Colorado, and seeing some hits on some uranium.

We got more issues with nitrates in that area that we'll be sampling, similar domestic wells and other things to get ahold of in Beaver and Sappa Creek next year, and we'll be able to come back with some results on that. But I think that's something we all

face is water quality becoming a bigger issue for us all as well.

Couple of good things maybe are happening. Just in August, the Governor joined with Amber Wave, which is a company -- a private company developing a wheat processing plant in Phillipsburg that will be one of the largest wheat processing plants in the nation.

So they're going to have a $250 million investment in Phillipsburg, and obviously, that will help draw and help the economy in that part of not only Kansas, but Nebraska, and probably reaching into eastern Colorado as well. It's providing a new demand place to market wheat going forward.

Infrastructure. With the federal infrastructure laws, a big issue for Kansas is trying to figure out what all fits into that bucket and how we leverage as much of that money as we can, and so, again, the Governor has created a subcabinet, which is called the Infrastructure Hub, to try and coordinate activities across the agencies.

And certainly, a lot of the things that we see in Bureau of Reclamation is water things. Water opportunities would fit under that coordination as well. We're looking to leverage those.

And then, finally, probably, you are as well,

and we're facing difficulty just with recruiting and retaining good staff. As the job market has driven salaries up, that's certainly challenged us of being able to compete with the private sector and federal government to retain our staff.

And so that's a discussion we're going to have, not only within the agency and other agencies, but hopefully with the legislature as well.

So that's my report. I don't know, Dani, if you or Spencer have anything you want to add about what's going on with the RCPP.

DANIELLE HOLZWARTH: My name is Danielle Holzwarth. I'm the Cheyenne County Conservation District Manager at St. Francis. The last -- or, because it's been a couple of years ago, I submitted an RCPP proposal to the State of Kansas.

Those of you that may not be familiar with RCPP, it's basically telling NRCS that we have a conservation or a natural resource concern in our area that has needs that are not being met with traditional NRCS programs.

So, with that, the Kansas Water Office gave the conservation district $500,000 out of the $2 million settlement money, and I used that as leveraging to get more partners involved. I wrote them

all down here.

I have Kansas Wildlife and Parks, Ducks Unlimited, the Division of Conservation, with the Kansas Department of Ag, and then a Western Prairie RCMD out of western Kansas. They are all partnering, either financial assistance or technical assistance. And it came out for a total of $2.76 million.

With that, I put in RCPP practices such as continuing clearing the eastern -- or the red cedars and salt cedars and Russian olives away from the basin. We also included converting windmills to solar pumps, and then any tanks for livestock use that are failing, just need repair, and then also re-drilling of livestock wells to upgrade to NRCS standards.

I wrote all that in there. Basically, in EQIP, anytime you have outside help or a contract that you're -- or advocation that you're trying to get, it is ranked out against everybody in the state. So, in Kansas, the eastern side, it's way more invasive. The trees there, they're going to come first besides our little means out here in western Kansas, so by telling NRCS that we have this need, you're able to just focus on a priority area. So that was approved in April of '21.

And then, last summer, I did the next step,

which is called PPA, which is a partnership agreement. Gets a little more technical. And that's where it's at. So we're looking at just over a year now of negotiations back and forth.

But I'm hoping to get something started in the spring, whether that's outreach or just getting people in the door to apply. But that's where it's at right now. So I did not realize that that was going to be a three-year process. But we're working on it.

EARL LEWIS: All right. Thanks, Dani. Chairman, that would conclude our report, unless there's any questions you might have.

KEVIN REIN: Mr. Riley, any questions?

TOM RILEY: No. Thank you.

EARL LEWIS: Thank you.

KEVIN REIN: Thank you, Commissioner Lewis. I will present the report for Colorado now. And I'd like to start by thanking all the people that made this work today and last night. Once again, thank you for that, and recognize our Colorado staff that's here.

Of course, we all need to touch on drought, and I will make mention of drought for Colorado. Right now, we continue to be in drought, but it's not quite the way it has seemed recent months. In the extreme northeast and southwest corners of the state, we are in

extreme drought.

But as we move closer toward the middle in a the diagonal way, we get to more in severe drought and abnormally dry, and even the central mountains, it's showing no drought.

And we really owe that, to a large degree, on some early and unexpected monsoon rains throughout a lot of western Colorado, where we have seen more rain than we would expect, especially beginning in June and continuing on until now.

Ironically, a little bit of a problematic way for people that are trying to hay and get dry hay to take. So it's always good news and bad news, I guess. But that's where we are in drought. And we've been very fortunate, we haven't had the fires we've had in recent years to that same degree. That's been very helpful for Colorado.

Couple of other items around the state that I'd like to mention. First of all, the Colorado River. It's always in the news. You all are hearing about it. At this time, for the Division of Water Resources in the State Engineer's office, we are not closely involved in all of the negotiations and discussions you hear about between the federal government and the states that are part of the Colorado River compact.

My counterpart with the Colorado Water Conservation Board, Rebecca Mitchell, is our commissioner on the compact and the commissioner with the Upper Colorado River Commission, and she manages those discussions. However, it is -- it's a very important role, still, for Mike Sullivan, Deputy Director, and for me, as we do manage these expectations from our water users all around the state, who all rely on the Colorado River, what might the future hold as far as compact and compliance?

So there's always discussions to be had there. But our current status is that, yes, seven states are working hard to manage the lake levels at Lake Powell and Lake Meda. Colorado and the other upper basin states, we're underusing our allocation.

We are in compliance with the compact, and we're doing everything we should do in Colorado as far as water administration to comply with the compact and to comply with our interstate administration.

Nonetheless, we are seeing again this year releases from what we call the CRSP reservoirs as part of the Drought Response Operations Agreement. And while we saw releases last year from Blue Mason Reservoir to the tune of about 36,000 acre-feet and other releases from Flaming Gorge, this year we're

seeing entirely releases from Flaming Gorge at about 500,000 acre-feet, and similarly, or in the same effort, 480,000 acre-feet from Lake Powell that would have been released as part of the '07 guidelines will not be released.

That's the work that's being done immediately to manage the lake levels in Lake Powell. And that's a fair amount of information for us all to process.

In a different corner of the state, or another corner of the state, I want to mention Division 6, our Yampa River Basin. We continue to work on developing measurement rules. So they would have rules that describe effectuate the authority to require measuring devices for surface water and groundwater diversions. That's going very well. We hope to file these rules with the water court in the next few months.

In the Rio Grande Basin, something I always talk about, we have seven subdistricts that are subject to the relatively recently approved rules. We have seven districts that are in full compliance with the rules through their annual replacement plans right now.

And sustainability in the Rio Grande Basin continues to be a difficult issue. Sustainability of the aquifer, the subdistricts -- the relevant

subdistricts are working toward that. We're looking at proposed plans of water management in those subdistricts and we hope to set them on a path where they can achieve sustainability. That's a work in progress right now.

Around the state -- also, Commissioner Lewis, you mentioned your team and people leaving and how it's difficult to sustain the workforce. And in Colorado, we are still dealing with what I would call the standing wave of vacancies created during Covid, and the same time, people being attracted to outside employment.

And we're doing a great job filling those vacancies, but we still have vacancies to fill. I will mention that our general assembly did approve three new positions, brand-new positions, for the Division of Water Resources that became effective July 1st.

And that allows our South Platte Basin, Arkansas Basin, and Rio Grande Basin to hire each of them an accounting coordinator to deal with the just hundreds of spreadsheets that we get every month related to augmentation plans, changes of water rights, and other water issues.

As I mentioned, the Arkansas, moving down, continue to enjoy a good working relationship with

Kansas on the compact and administration. And I also want to highlight that, back in July -- July 8th, we released a notice that the Arkansas River Compact Administration had approved a resolution allowing the pilot operation of the multipurpose account in John Martin Reservoir.

And that multipurpose account allows Colorado water users to store water in John Martin for more efficient and effective use of that fully consumable water for other needs in Colorado. And I just want to thank Commissioner Lewis and Kansas again for working with us on that and getting to a point where we now have to have an account that we can operate on a pilot basis. Thank you for that.

Lastly, on Republican River, I wanted to recognize that we do have final approved compact administration rules for the Republican River Basin. And those were approved back in February by the district court judge.

We filed these rules with the Water Court in January of 2019. We had a trial in January and went into February of 2022 earlier this year. We had one protest, one opposer in that case, and we managed to get past that and get the judge to approve our rules, and we now have operating rules.

Just, again, to recap, they are necessary for good, equitable treatment of all the water users, including surface water users in the basin, and, in essence, the rules do two main things, along with other smaller things.

But they affirm the use of the compact compliance pipeline for compact compliance --- compact compliance purposes for Colorado water users. And it does provide -- sorry -- it does allow an alternative mechanism for augmentation for compact compliance for anyone that doesn't want to use the compact compliance, as allowed by the Republican River Water Conservation Districts.

I also want to mention two other things for the Republican River Basin. I know that the people in the basin are hard at work addressing conservation efforts and trying to advance conservation in the basin. And I just really want to recognize everyone for their hard work on that.

And, at the same time, as we know -- and Commissioner Lewis, Commissioner Riley are well aware that we have a 2016 resolution that requires the retirement of acres in the South Fork, and that number is 10,000 acres for -- by 2024.

And that's the first goal. Working very

hard -- district is working very hard. We're working with them to achieve that number. But I want to mention Senate Bill 28, that was passed by the legislature during this 2022 session, and the people that worked hard to make that happen.

It's too numerous to mention. But a lot of people worked hard to help that bill pass. And it allows $60 million total, $30 million for the use of the Republican River Basin toward the efforts of retiring acres that achieve that goal.

We are -- Mike Sullivan and I are working closely with our Colorado Water Conservation Board, the people of our district, our executive director's office, Nate and Kelly, to make sure we have the mechanism and process in place to implement that money through the American Rescue Plan Act of 2021 and achieve that goal.

So that's just a congratulations. Good work. And let's keep rolling up our sleeves and working on that for everyone in the room. And, with that, Commissioner Lewis, Commissioner Riley, that is my report, unless there are any questions.

(No response.)

KEVIN REIN: Thank you very much. Commissioner Riley.

TOM RILEY: Thank you, Chairman. And thanks again to our gracious hosts last night for -- and the board for having us. That was a great opportunity to get together and talk with people.

I'm just going to summarize our annual report, which we'll submit as part of the papers for today's meeting. I might start out by letting folks know here that DNR just came off a couple -- couple of years with the Covid, where we were out of our office for sometime.

We spent a year out of our office, up until April, I think -- April of this year, where we didn't have a space because our space was being constructed. So we had to work and continue to work remotely.

So happy to have a fantastic new office building with some of our sister agencies, Department of Agriculture, our commodity boards, our Department of Energy and Environment, and Department of Economic Development. So we're happy to have a new home and enjoying that.

We've also had a lot of work in our legislature this year. The department's coming to a number of water initiatives. And I'll just touch on a couple of them here.

One of them is -- we're really excited about

is our surface water infrastructure, and out of the general fund, the legislature provided $50 million that the department's putting together in the form of a grant for about 60 districts across the state that are going to be eligible for this.

That grant program provides $9 for every one dollar that the district would put in for critical surface water infrastructure. And we all know that a lot of our infrastructure is aging and moving to the time where it's 100 years old or more.

So that's a great program for us to be able to initiate, and we're getting started with a few projects that will actually begin and get shovel-ready yet this year.

We also received a large amount of money for a program that's called, affectionally, STAR WARS and JEDI. It doesn't have anything to do with the series. But it has its own acronym, but I can never remember what it is.

But those monies are available for adding economic development and infrastructure across the state in a number of locations, including Lake McConaughy. So you're welcome, Coloradans. They will be adding some additional components to that reservoir.

Also, in northeast Nebraska, and then

potentially looking at a lake structure between Lincoln and Omaha. So the department's been charged with primarily looking at this lake opportunity between Lincoln and Omaha, which we'll be conducting a feasibility study for that.

And we also are doing a project to look at the potential for Perkins County Canal, which is on the South Platte River. And we're aligning that project on that compact, which is about a hundred years old now.

So a lot of activities and projects that the department's working on and keeping us busy. Just to echo what I heard from both Commissioner Lewis and Rein about staffing. We in Nebraska have some of the same struggles about keeping staff engaged in the board.

But we've recently had very good luck with bringing some of our positions in the fold, and really exited about that, and hopefully we continue to take care of some of these positions that we have outstanding in the department. But, certainly, that's going to be a difficult thing for state governments, local governments moving forward.

Like all, the conditions in Nebraska are pretty dry, and specifically portions of the Republican River Basin. And we continue to deal with those conditions. And I'll hit on that just a little bit

more in a moment.

One thing of note that would happen in the basin that some of you might have seen -- and I think Kansas suffered a little bit of this as well -- we did have an extensive amount of fire activity early in the irrigation season that caused damage to a number of facilities and infrastructure throughout the basin, mostly in the central part of the Republican River Basin.

And that was really hard to see. We had other fires in the state as well in the panhandle that we've had to deal with on a basis going forward.

So just a few things to review for 2021. We had about 80 percent precipitation across the basin, so not looking good. The good thing this was we had a good supply in Harlan County to start out with and end with, and that certainly helped us into 2022, which we continue to see the drought conditions really tighten around us, in particular, again, in the Republican River Basin.

Back in 2021, we had our kind of normal water administration activities within the basin. It was a Non-Compact Call year. Nebraska was in compliance during that year. 2020 -- '22 is also a Non-Compact Call year, and we'll see what happens going forward

with that.

Just a note about some of our partners in the basin. We work with our natural resources districts to manage our groundwater in Nebraska, and the department takes care of surface water. We do that on a conjunctive management basis with integrated management plans, and our Tri-Basin NRD is one that we're working closely with to update their plan and reflect some of the accounting methods that have been improved over time to implement some of their particular tools as well.

One thing of note, we've been working across the state with various stakeholders on drought planning. And we're doing a drought-resilient planning activity in the Republican River Basin. I want you to know that we had a really good May discussion about that.

What I didn't plan on doing was having kind of a live action. We didn't ask for the drought to have our drought planning meeting be that relevant, but in this case, it was. But working with those stakeholders to really find ways to do something about the drought and to get through it.

And this is something that others have heard me say: Nobody cares about floods when it's flooding.

Nobody cares about droughts when it's dry. But we really do have to plan for both all the time. And so that's something the department's really working with stakeholders across the state to be able to do.

Just some of our water management investments, across the basin in particular, Frenchman-Cambridge irrigation district's done some great work in working with WaterSMART grants and monies for canal -- continued canal automation.

Nebraska Bostwick Irrigation District has done some headgate automation, some of that in conjunction with the Kansas Bostwick Irrigation District, who's done some similar things. And certainly, those put the districts in a better water management position.

Nebraska Bostwick is also looking at Superior Canal delivery improvement projects that will help them by adding some high efficiency diversion for their Superior Canal and continued investments across that region, some of them including those with our natural resources districts, some pretty good programs that include retirement of lands across both -- from all three of the main districts -- Upper, Middle, and Lower Republican.

$3.3 million for Middle Republican,

$3.3 million for Lower Republican, $6 million for Upper Republican NRD for retirements and establishing telemetry and soil moisture probes throughout the district. So continued investments with those working partners as we move forward.

One item of note, Commissioner Lewis will be asking these questions, so I'd like to head it off at the pass. We have the Platte/Republican Diversion Project that's been proposed that would bring water across form the Platte River into the -- into the Republican River. That's being sponsored by the Lower Republican Natural Resources District and Tri-Basin Natural Resources District.

That's going through an administrative procedure right now for standing, and the department continues to work through that process. We'll probably see that come to a conclusion later this year, and then we take the next steps about evaluating actual merits of the project.

The department is also working with the Lower Republican NRD in discussing the Thompson and Turkey Creek projects. These are additional projects that provides for augmentation and offsets for the district.

Nebraska is also blessed with a fund -- we called it the Water Sustainability Fund -- that gets

about 10- to $12 million a year for water sustainability projects that folks can put in for. And some of those projects continue, and there's been about 12 of them in the Republican River Basin, including about $8 million in investments for that.

That submittal process just closed out, and the -- I'm not sure if there's been some additional requests from the Republican River Basin, but our commissioners will be looking over those grant applications soon, and we'll be providing those funds moving forward.

So, with that, again, we'll submit our final full report to the record, Mr. Chairman. And that concludes my admin report, unless you have some questions.

KEVIN REIN: Commissioner Lewis, any questions?

EARL LEWIS: No questions. Thank you.

KEVIN REIN: None for me. Thanks.

TOM RILEY: Thank you.

KEVIN REIN: I will move on to Agenda Item 5 now, federal reports, beginning with the U.S. Bureau of Reclamation.

CRAIG SCOTT: Hi. Thank you for allowing us to report to you today. My name is Craig Scott, and

I'm representing Reclamation's Nebraska-Kansas area office in Nebraska. And I submitted a Reclamation report electronically to the State of Colorado for the record and meeting today. I've also provided copies for each state.

So I won't go into a lot of detail on the report. We would like to touch -- just a few highlights to some of the data that's being included in the report.

And I'll start with 2021. And as Mr. Riley had mentioned, precip varied throughout our projects in the Republican River Basin, it's well below average in the western part of the basin, but quite a bit better in the eastern part of the basin.

So overall precipitation at Swanson Lake averaged 67 percent for the year, while precipitation at Harlan County reached roughly 121 percent for 2021.

Storage in Harlan County reached the flood pool last year in April. The Corps of Engineers made various flooding basins through June. And at that time, irrigation demands dictated releases.

We were able to split the storage within the flood pool between Nebraska Bostwick and Kansas Bostwick Irrigation Districts and began releases there towards the end of June.

The irrigation supplies last year at the start of irrigation season from Harlan County was approximately 141,000 acre-feet. So, therefore, water shortage administration was not affected in 2021.

Currently -- just to touch on storage capacity, we are currently -- in Enders Reservoir, storage capacity is approximately 16 percent of our maximum capacity. And, as you know, we've not made irrigation releases from Enders since 2003.

But the recent years, inflows or evaporation has exceeded inflows, and the reservoir continues to decline. And in July, just last month, the reservoir elevation has now reached deadpool, where we cannot physically release water through our outlet structure there.

Moving over to Swanson Lake. Current capacity is 25 percent. Hugh Butler Lake is currently at 29 percent. Harry Strunk Lake is currently at 44 percent. Keith Sebelius Lake in Kansas, Norton Dam is currently at 39 percent. Harlan County, currently at 78 percent. And Lovewell Reservoir, currently at 44 percent.

So I guess it's fairly obvious from those numbers that, you know, all of our project areas, with the exception of Harlan County, the lands served by

Harlan County, experienced limited water supplies for 2022 and 2021.

Irrigation supplies from Harlan County, at the beginning of this irrigation season in 2022, was approximately 131,000 acre-feet. So this is the fourth consecutive year where water shortage administration was not in effect. I think it's too early to predict next year what that might be, but the trend is, that could change as we get closer to the end of the year.

And last thing I'd just like to note is an update to the status on Bostwick MOA. As you recall, the Bostwick MOA identifies the procedures for splitting or sharing water supply between Nebraska Bostwick and Kansas Bostwick. That water supply from Harlan County Lake, and also, in terms of the accounting procedures, as we move through the irrigation season and accounting those waters.

That agreement was originally signed at the end of 2018 and was only a three-year agreement. So it expired at the end 2021 with the districts and the Bureau working on that here at the beginning of 2022, and they did agree to sign a long-term agreement and continue those current procedures that they had in place that were really put in place to facilitate the Administration's 2016 resolution. So that -- that

agreement has now become a permanent agreement.

So, with that, that concludes my report. So if you have any questions.

KEVIN REIN: Commissioners, any questions for the U.S. Bureau of Reclamation?

(No response.)

KEVIN REIN: Thank you, Mr. Scott, for your report. I'll move on next to Item 5B, U.S. Army Corps of Engineers. Do we have anyone from the Corps?

(No response.)

KEVIN REIN: We have no one from the Corps. We'll move on to Item 5C, U.S. Geological Survey.

JOHN MILLER: Good morning. I'd like to thank the three states for this opportunity to speak briefly on the USGS operations in the Republican River Corridor. For those that aren't part of the --

KEVIN REIN: Pardon me. Could you please identify yourself.

JOHN MILLER: Oh, I'm sorry. John Miller with the U.S. Geological Survey. For those that are not aware, we operate directly 16 stream gauges within the Republican Basin within Nebraska and cooperate with Nebraska DNR on two other sites.

There's a summary report I provided. The mean flows for 2021 compared to a period of record

flows. There's also -- I believe there's handouts of that summary sheet on the table. If the folks here didn't get one as they came in today, there's still plenty back here.

I guess I just -- I'll be brief as I can. I like to talk about water. So comparatively, we see a trend -- this began from 2020 to the current water year, where, as has been mentioned, we're seeing deepening into drought conditions, specifically in the western part of the Republican Basin in Nebraska.

In 2021, there was two runoff -- two runoff -- significant runoff events above Republican River at Orleans, with no runoff events above base flow, above Republican River at -- above the Republican River at McCook. Those runoff events were pretty significant in providing bank storage water and buffering capacity within the basin.

And as dry, hot conditions developed, we see streams go dry quickly, as we did this year, kind of flip-flopping in between 2021 a little bit and 2022. And we're seeing the effects of those lack of runoff events this year significantly, as we've seen sites go dry or nearly dry by the end of June. Typically, we don't see that condition until late July or even into later part of August.

The two -- two things that I'll just highlight on the summary sheet. The Republican River at McCook and Rock Creek at Parks Gauge reported the lowest mean discharge for 83 years of record with the 2021 water year.

The remainder of 10 out of the 12 compact sites reported lower main discharges than 2020 year, for the 2021 water year. And a little bit into 2022, we currently have 10 sites out of the 18 sites that are reporting dry channels or near dry channels.

A little bit into the -- well, we'll make a comment that the USGS makes significant efforts in monitoring those low flows. A lot of times, there's not a lot of emphasis on those, and -- but we often comment that monitoring stream flows in low-flow conditions is harder than flooding conditions, with having to move orifices down and move them to different parts of the channel and determining what we call GHZF, gauge height zero flow. We put a huge emphasis on that.

Also, we get a significant opportunity to define those lower -- lower-end parts of our ratings. We've had to develop this year numerous new ratings because of those extreme low flow conditions we're seeing throughout the basin.

A little bit on the -- for those that use the data significantly, probably a half a dozen years ago or so, we began an effort to maintain the approval at a current basis as best as we can. The -- currently, all of the Republican River Compact sites have been approved up to June of -- June and July of this water year already.

And I know that helps you folks with different situations throughout the year of having approved data rather than provisional data.

And -- let's see. I believe -- I believe that's all I have written down to mention. So that would conclude my report for the 2020 -- 2021 water year. Unless there's questions.

KEVIN REIN: Commissioner, are there any questions for the USGS?

TOM RILEY: So there's a -- corrections on gauges on the shifts. When you're doing these on these low flows, are you saying that the correction is for, then, a lower discharge?

JOHN MILLER: Say that again.

TOM RILEY: So when you have to make your shift correction, is it a lower discharge than you would have otherwise predicted?

JOHN MILLER: At times, we see that. You

know, it can go both ways when we make those low-flow measurements. There could be a little bit more water. There could be a little bit -- a little bit less. I have to say, it goes both ways on the shifting at that end.

We're always hoping when we arrive that there's still water, but sometimes you don't get there quick enough.

TOM RILEY: Thanks.

KEVIN REIN: Any other questions? Mr. Lewis.

EARL LEWIS: Thank you, Mr. Chairman. Thank you, John, for your report. I'm not sure if you're the right person to ask this of or not, but are you -- are your -- USGS doing any work to look at what future stream flow conditions, compared to what we might be seeing -- consider being normal now?

With the -- I bring this up because, (unintelligible) remember as we talked about the Ark Basin, there was a recent change in what's considered the normal precip, bringing it down by about 10 percent. And, obviously, that has a pretty significant impact on stream flow and what our business is.

And I'm wondering if there's anything similar being done anywhere in the Republican -- as we think

about, again, what does the future hold for our future water supply compared to how we've operated for the past decades?

JOHN MILLER: Yeah. I wouldn't be able to comment on that. That would be above me. So . . .

EARL LEWIS: Thank you.

KEVIN REIN: Thank you, Commissioners. Thank you, John, for that report. I will move to Item 6A on the agenda, and that's the Engineering Committee Report. And I will turn that over to Ivan Franco, Colorado's representative on the Engineering Committee.

IVAN FRANCO: Thank you, Commissioner. As he said, my name is Ivan Franco. I'm the Engineering Committee Chair for the State of Colorado this year. I'm going to go ahead and read into the record parts of the Engineering Committee Report to the Republican River Compact Administration for this year.

I'd like to just start by thanking my co-members, Kari from Nebraska and Chris from Kansas, for helping put this report together and working so hard to get this done. I'd also like give a special thanks to Sam Capps. She's running the computer back here and the web functions -- I think we all know why -- in the room.

So, the Executive Summary to the Engineering

Committee Report. The Engineering Committee met four times since August 25th, 2021, Republican River Compact Administration Meeting. Over the past year, the Engineering Committee completed these assignments.

One: Hold quarterly meetings. Two: Exchange information listed in Section 5 of the RRCA accounting procedures and reporting requirements, submitting all required data and documentation. Three: Finalize the 2021 accounting.

Four: Continue work on documenting historical changes to the RRCA accounting procedures. Five: Update on the progress of new and ongoing management strategies for maintaining compact compliance. Six: Continue development and maintenance of the RRCA administrative website that serves as an informal page for the public and provides regular updates to the Engineering Committee.

Continue work and provide updates on improving accounting tools developed by the Engineering Committee. Eight: Prepare the 2021 RRCA annual meeting report. And nine: Maintain -- or retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

At this point, I will move on to items for RRCA discussion and action. One: Data exchange and

modeling results for 2021. The Engineering Committee recommends the proposal -- the proposed 2021 accounting presented in Attachment 2 in the spreadsheet titled, "RRCA Accounting 2021 Final," period, "XLSX" for approval by the RRCA.

Upon approval of the accounting, the above-mentioned spreadsheet file will be placed on the public website.

Modeling and data tasks is Number 2. These are to be assigned to Principia Mathematica for 2021. The Engineering Committee recommends that Principia Mathematica continue to maintain the web-based accounting tool and perform periodic model and accounting updates at the same level of service as in 2021.

Number 3: The document summarizing historical changes to the RRCA Accounting Procedures is current and being maintained by the Engineering Committee. The Engineering Committee recommends that this document continue to be maintained by the Engineering Committee as an ongoing assignment.

Kansas -- Number 4: Kansas's climate-based pumping estimator is showing potential to be useful in improving early groundwater modeling forecasts. The Engineering Committee recommends that it be assigned to

continue evaluating the climate-based pumping estimator as a forecasting tool as part of Assignment 7, which I'll list off in a moment.

Number 5: Discussion of the recommended Engineering Committee assignments and other potential assignments for the next year and agreement on a final set of assignments for the Engineering Committee.

The Engineering Committee presents the following lists of recommended assignments to report on at the 2022 Annual Meeting of the RRCA. That's -- recommended assignments for the coming year.

The Engineering Committee recommends to the commission that the Republican River Compact Administration assign the following tasks. One: Continue to meet quarterly to review the tasks assigned to the committee.

Exchange by April 15th, 2023, the information listed in Section 5 of the RRCA Accounting Procedures and Reporting Requirements and other data required by the document, including all necessary documentation. By July 15th, 2023, the states will exchange any updates to this data.

Number 3: Finalize the 2022 accounting and recommend it for approval by the RRCA. Maintain and publish updates to the summary of historical changes to

the RRCA Accounting Procedures and Reporting Requirements, as necessary, is Number 4.

Number 5: Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance. Continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provides regular updates to the EC is Number 6.

And Number 7: Continue work and provide future updates on improving accounting tools developed by the Engineering Committee. That climate-based pumping estimator is -- would be nested under Assignment 7.

Number 8: Prepare the 2022 RRCA Annual Meeting Report for approval by the RRCA at the 2023 annual meeting.

Commissioners, that concludes the summary of the Engineering Committee Report to the Compact Administration. We'll have a full version that we will sign and submit into the record on completion of the meeting. Is there any discussion on the committee report and assignments?

(No response.)

IVAN FRANCO: Hearing none, I'll hand this back to you, Mr. Rein, for further action.

KEVIN REIN: Thank you, Mr. Franco. I'll move to Item 7. And I'll possibly just hand this back to you. Would you and the rest of your -- and your committee members like to present these recommendations/actions as a group for the commission's approval, or would you like them to be done as items?

IVAN FRANCO: I think that's something you guys can make a motion for.

KEVIN REIN: Then I'll ask that question of Commissioner Lewis and Commissioner Riley.

TOM RILEY: Chairman, I make a motion to accept the recommendations provided by Mr. Franco from the Engineering Committee.

KEVIN REIN: I'll second that. All in favor of adopting this?

THE PANEL: Aye.

KEVIN REIN: That motion passes. And you do have the information on the accounting associated with that. So can I have a motion related to the accounting?

EARL LEWIS: Mr. Chairman, I move for the approval of the 2021 accounting.

TOM RILEY: I second that.

KEVIN REIN: All in favor, say "aye."

THE PANEL: Aye.

KEVIN REIN: That motion passes. And I believe we're ne wit Item 7. I'll move on to Item 8. Commissioner Riley, Commissioner Lewis, is there any other business that you have?

EARL LEWIS: I have no new business.

TOM RILEY: Nebraska has no new business.

KEVIN REIN: Thank you. Item 9, remarks from the public. Do we have a public comment today? Mr. Bledsoe.

WILL BLEDSOE: Yes. Good morning. As I mentioned earlier, I am Will Bledsoe with the Republican River Water Conservation District. I've been working with the Legislative Committee.

As everyone knows, the last few years, Kansas has charged us with a tall task of retiring 25,000 acres. It's nothing new in this drought.

But, anyways, Kevin touched on it, and I think he can accomplish most anything with money. And two or three years ago, we were wondering where we are get (unintelligible) that money as much.

As the last year has been very huge for our district, Senator Simpson -- I believe Simpson -- he was in the Rio Grande. And just to touch on Senate Bill 28, as Kevin touched on, that was a huge windfall for our district.

We've -- were able to get -- we were hoping for 50 million, but we were able to get 30 million to help leverage EQIP, CREP, and RAMP programs.

THE REPORTER: Wait. What programs?

WILL BLEDSOE: Excuse me. EQIP, CREP, and RAMP. And so, obviously, we've done some adjustments on our fees -- usage fees coming up 'cause, like I said, money helps solve everything, but were definitely encouraged going forward; you know, we're making huge progress on getting to our 10,000-acre milestone. So I just want to give an update on that.

We're taking it very seriously. Unfortunately, most -- all if not most of our energy in the district is going to retiring that 25,000 acres, and we're distracted from what I prefer to be working on, a lot of, you know, retiring -- or conservation across the district.

But we are -- huge energy focused on this area. And we're trying to leverage the money as best we can. And I think we're seeing good progress. So I just wanted to give update on that.

Also, I was going to say, home field advantage is usually a good thing. But I was discouraged from getting carried away here because it sounds like there is as many Kansas and Nebraska people

in the crowd as there is Colorado. So I appreciate everyone being civil even though we are in our home field advantage.

But we're working tirelessly to put some miles on our side of the state line to get this issue resolved, and I think we're on the right track. Thank you for all for your time, energy, and coming to beautiful Colorado. So thank you.

KEVIN REIN: Thank you, Mr. Bledsoe, for your comments. Do we have other public comment? Please step forward.

BRANDI BAQUERA: Hello. Kevin introduced me earlier, but I'm going to reintroduce myself with a new hat. My name is Brandi Baquera, and despite the label I'm wearing on my shirt today, I'm actually going to introduce myself as the coordinator for Colorado Master Irrigator.

So I am our local coordinator for the Republican River Basin but also our statewide coordinator. And, Mr. Lewis, you mentioned the fact that Kansas is looking into starting their own Master Irrigator Program. So I wanted to offer my help and any service we can do in helping you get that established, but I also wanted to give an update on our program.

So, Colorado Master Irrigator was born, I will say, throughout 2018 and 2019 with the help of RRWCD local water management districts and so many others. We were able to put together a program in 2020. Unfortunately, we did not get to have them in 2021 due to Covid, and then, most recently, again in 2022.

We have had representatives -- we've had -- I'm sorry -- 44 graduates over those two programs, representing over 50,000 irrigated acres here in the Republican River Basin.

So, as Will mentioned, with all the efforts with RRWCD working on retirement, Colorado Master Irrigator is working on efficiency and conservation and collecting the data to show what practices and tools can be used to help assist with water usage.

Also, Senator Simpson was a big advocate to help us expand our program over to the Rio Grande Basin this year and host two separate cohorts with the 2022 program in the San Luis Valley, also representing over 50,000 irrigated acres.

So that was just a quick update. We will also be working on expanding our program some more, looking into the Four Corners and hopefully into South Platte soon. So I will continue to see you all, as

well as our great partners that are in this room.

And -- yeah. With that, that's just a quick update. If you have any questions, I'm happy to answer them.

EARL LEWIS: Thank you.

KEVIN REIN: Any other questions?

(No response.)

BRANDI BAQUERA: Thank you.

KEVIN REIN: Thank you, Brandi. Any other public comment? Please, Mr. Helling.

KENNY HELLING: Thank you, Mr. Chairman. Kenny Helling. I represent Yuma County on the RRWCD board. I'd like to share a little information and comment on the South Fork Republican River Restoration Coalition.

And so we've been working pretty hard, putting together some ideas and some things to restore the channel through Bonny Reservoir. And a year ago, at the McCook meeting, I shared with Mr. Lewis what progress and all we're trying to do.

And, again, I would just like to ask for Kansas's support, as well as Nebraska. I know the South Fork affects Kansas more immediately. And I hope sometime you people can drive over Bonny Dam and look back to the west and see the mess that we're facing, a

lot of growth in all the trees.

And as I came down today, I had a little extra time, so I drove through Hale, Colorado, which is right east of the dam. And there was some water flowing at the Hale Bridge. So you can imagine that that water that's hitting the Hale Bridge is coming through the toe drains of Bonny Reservoir.

So we all know there is some underflow there. So can you imagine if we had a channel through Bonny Reservoir, and we had all the trees cleaned up, the amount of water that would be flowing down the South Fork of the Republican to help your constituents, Mr. Lewis, in northwest Kansas.

So, again, as we talk and we work very hard to retire 25,000 acres in the South Fork Drainage, which everybody hopes we can accomplish that, the amount of water, then, that would be getting to Kansas and on down to the Benkelman Gauge to flow through Nebraska and back to Kansas.

So I'm here to ask for your help to try to get more flow through Bonny Reservoir. That's a Bureau of Reclamation dam, and so we need help from the Bureau of Reclamation and the federal government because that's a federal flood control dam.

So, with that, I just ask for your help and

understanding to try and get where we need to be, and that is more water flowing down the South Fork of the Republican. Thank you.

KEVIN REIN: Any questions for Mr. Helling?

(No response.)

KEVIN REIN: Thank you for your comments. Mr. Penny.

KEVIN PENNY: My name is Kevin Penny, farm right southeast of town. Irrigator and a lot of dryland, a small feedlot. And Kenny, he was talking about trying to get the water through, but I'm going to go back to the days of being a water skiing family. Oh, my gosh. We had such a wonderful time at the Bonny Reservoir, and we taught so many kids to ski. It was just a real blast.

And so this is one of those deals when we talk about that, and oh, my goodness, that was -- that was so awesome as a recreational facility for us. And, yeah, I understand how things work.

And, even as a community, we're going, I don't like it, but it -- we've got to drain it so that evapotranspiration numbers are -- and, you know, I think, as farmers, as people in our community, we're trying to do the best we can to do our -- to do our part as well.

I'm the fourth -- my son is the fourth-generation farmer from our family. And my grandfather, he came down from Nebraska in 1917, I think. And, gosh, he -- trying to -- and he's -- it's amazing how people, the things they do to make this work.

It's a hardware store and a motor dealership. He owned a International dealership and he was a mortician. And so, as I think about the property that he bought, that is really the main -- the -- where our main operation is right now, how amazing that was what he did.

And so we're just trying as a family to continue to do our best. And this morning, as my son was finishing getting the side-chopper serviced, and I told him that I was going to be going to town to listen to the Republican River Water Compact Administration meeting this morning. My son tells me, "Good luck."

And -- and I would like to say good luck to us, as we need that. And whatever we can do, and being part of the -- you know, just recently, part of the RRWCD legacy and learning what they're doing and trying to do my part with them. And I thank you for your service. Thank you for coming down, and that we'd all remember, at the end of the day, that the decisions we

make affects so many people. But thank you so much.

KEVIN REIN: Any questions for Mr. Penny?

(No response.)

KEVIN REIN: Thank you. Further public comment? Ms. Daniel.

DEB DANIEL: Good morning. My name is Deb Daniel. I'm the general manager of Republican River Water Conservation District. And, first of all, I want to thank all of you for taking the time to come here to recognize the importance of it, and especially Commissioner Riley for having it in the basin, where we can participate, those of us that are affected by the decisions that all of you make.

So thank you, Commissioner Riley and Commissioner Lewis, and your staff members for coming. We very much appreciate it.

As you have heard from some of my board members and the public, we're working hard in our area, and we just want you to know that we are laser-focused on the 2016 Resolution, where all three states agreed that if Colorado would retire acres, we could continue to receive 100 percent credit for the water --

THE REPORTER: Slow down, please. I can't understand you.

DEB DANIEL: So we appreciate that all of you

approved, although we don't like the idea, but, anyway, the 2016 Resolution, and we are laser-focused on reaching those deadlines of 10,000 acres retired by the end of 2024, and an additional 15,000 acres retired by the year 2029.

Currently, we have over almost 4,000 acres retired in a contract. We are working with our state, and, as you heard from my legislature chairman, we're able to see through legislature $30 million of the ARPA funds.

We are almost to being able to access those funds. Once we do, we're going to have another over 4,000 acres to add to our total. So we are well on our way. And we know that we have to have our 10,000 acres retired at the end of '24.

I feel very confident in that at this time. And we know that we still have to be looking off to the future and an additional 15,000. As you can see by the board members that have been participating today, a lot of people are working very hard throughout our basin.

I have 17 members on the board, nine very active committees. And I want all of you to be assured that we are doing our very best. And we appreciate all of the assistance that we've received from Colorado Division of Water Sources.

In fact, my board recognized that it was such a heavy workload that, at the beginning of this year, they added some additional employees for me to help with that workload. And so if you haven't had a chance to meet Peyton, she's wonderful. And she is working very hard for me.

She's -- started in January of this year, and so much appreciate having her. We've had public meetings, and we've had meetings with groundwater districts and county commissioners, talking about the need to retire the acres in the South Fork Zone, but also encouraging conservation throughout our basin.

My board had a very difficult decision to make last year because we can see we needed additional funding for these conservation programs. So they decided to more than double the water use fee in this basin to assist us with those efforts.

So people who irrigate within our basin are now paying twice as much as they did previously. From 2008 to 2021, the rate was the same, and we more than doubled it in 2022. So we are all trying to work hard towards getting those acres retired through our programs.

You've heard from Brandi Baquera. I strongly encourage that you reach out to her. She is awesome in

her position. And you've heard from my representative from my board, Kenny Helling, about all the work that we're doing on the South Fork Republican River.

Initially, we received a grant for $99,000 from CWCB and another $120,000 from Nature Conservancy. And we used those funds to try to start a initial design of what we need to do to restore stream flow and fish habitat, hopefully to bring back some recreation.

Now, what my board member Mr. Penny told you about waterskiing, I also did that and loved it. Lots of family outings there. I'm looking forward to the future with other kinds of recreation. We know that the reservoir will never be what it was, but there are a lot of other opportunities there.

So, with that, I think I'll close because I know I have one more that would like to speak.

KEVIN REIN: Thank you, Ms. Daniel. I do have one question for you. You mentioned -- I believe the number was about 4,000 acres that you have queued up, so to speak, for retirement once the funds become available. Is that --

DEB DANIEL: Yes.

KEVIN REIN: Can you tell me, as we stand now, the amount of acreage retired?

DEB DANIEL: Well, the number of acres we

have already under contract, 3,723.

KEVIN REIN: Okay. Thank you.

DEB DANIEL: Yes. Yes.

KEVIN REIN: Any other questions, Commissioners?

(No response.)

KEVIN REIN: Okay. Thank you. We have one more speaker. Okay. Mr. Lenz.

ROD LENZ: Thank you. Rod Lenz, the Sandhills representative to the Republican River Water Conservation District, also a member of the board. Well, first of all, I'd like to acknowledge everybody here. I love the turnout. That means the interest is really, really keen.

I want to thank the RRWCD board members that came up and spoke because I have nothing left to add to this, except for one thing, and it's the fact that I think it's important -- I don't know how it is in your states, Kansas and Nebraska, but the attitude about water is different; the approach to water is different than it was five years ago.

Five years ago, a large percentage of constituents and irrigators here really were just, solve the problem; leave me out of it. Very few people have that attitude anymore. They all say, hey, what is

happening? What is that? I don't want your job. You know, what are you doing? What can you do for us today? That dirty, rotten Kansas, Nebraska --

THE REPORTER: Wait. Stop. Stop. I'm not understanding you. Please slow down.

ROD LENZ: I was getting going.

THE REPORTER: Yes, well, I didn't get any of that last 30 seconds.

ROD LENZ: I got my message across to the people that I wanted to. So the attitude is different than it was five years ago. The relationship with Kansas and Nebraska in Colorado is better because your guys's -- your approach to the problem. It's a common problem we all have.

And I appreciate that more than you know. I think my opinion altered clear back when we had the summit in Garden City in probably 2015 or '16, when I realized that the Republican River -- the overall aquifer really didn't care where -- what state was above it.

And so I think, at that point, we started seeing everything change. So the point I wanted to make is that, besides all the practical stuff that my board's brought up, is that, really, we're in a really health place to solve a very different problem. And

I'm confident that we're going to continue to cooperate with you to move forward. Thank you.

KEVIN REIN: Any questions for Mr. Lenz?

(No response.)

KEVIN REIN: Okay. More public comment?

BRAD EDGERTON: Thank you. My name is Brad Edgerton. I'm the general manager for Frenchman Cambridge Irrigation District. I would like to thank Colorado for their efforts in complying with the compact.

Frenchman Cambridge is a benefactor of your efforts. We have a contract with the Bureau of Reclamation to take irrigation water from Swanson Reservoir. We serve about 18,000 acres out of that reservoir and then supplement another 6,000 acres on another canal.

We have used $2 million of Colorado settlement funds and put that with another $1.5 million from WaterSMART with the U.S. Bureau of Reclamation, and we have invested in canal automation so we can be more conservative with our water. And we only did that because we knew that Colorado was going to comply with the compact.

You know, this year is going to be really difficult with the drought. We have a 7-inch

allocation out of that reservoir. We're making it work. A lot of center pivots have been installed. So that's -- that's helping producers be more efficient on the farm.

So, in addition, we also charge to deliver the water. We charge $52.20 acre-foot to our producers. So it's not cheap water. But they know the value of having water that -- again, I'd like to thank Colorado for your efforts, and, you know, helping us with our -- our water situation. So, with that, any questions?

KEVIN REIN: Any questions?

(No response.)

KEVIN REIN: Thank you for your comment. Do we have anyone else that would like to offer public comment?

(No response.)

KEVIN REIN: Okay. Thank you all for the very robust public comment. I appreciate that. The last item on your agenda today is just to discuss future meeting arrangements and set them today.

And I'll just remind the group that, for the annual meeting, that last year, you all accommodated the concern of mine to stagger our meeting out by a week because we have a Colorado Water Congress in about

the same time period.

So I appreciate that, and that's something that if we can be mindful of once again, I'd appreciate that. But I'll entertain any suggestions or discussions from the commissioners on a future meeting.

(No response.)

KEVIN REIN: Perhaps we'll set that date as we go through the coming year. At the appropriate time. But it is, of course, Colorado's second year to host. So we'll be hosting that annual meeting.

Anything else from the commissioners today before I adjourn?

EARL LEWIS: One quick comment. Thank you, Mr. Chairman. And, just real quick, I wanted to let everybody that provided public comment, I can get through (sic), I just wanted to express my and our appreciation for the leadership that -- and all of your boards.

They are very active (unintelligible) in talking about and having a passion for trying to not only meet the 2016, you know, deadlines, but also just a broader focus on conservation and being more mindful of how we use water.

And I agree with the president; I think that we also see an overall change in attitude and approach

to how we go about dealing with water across the board. It's a cultural change and a societal change, so it takes time. (Unintelligible) happens today.

That's not helping (unintelligible). Other than that, I want to say thanks for all your wonderful leadership to stay on task, and we're looking forward to your success.

KEVIN REIN: Thank you, Commissioner Lewis. I'll take a motion to adjourn the meeting.

EARL LEWIS: So moved.

TOM RILEY: Second.

KEVIN REIN: All in favor, say "aye."

THE PANEL: Aye.

KEVIN REIN: Meeting is adjourned. Thank you for attending.

(The proceedings were concluded at 11:52 a.m. on Wednesday, August 31, 2022.)

REPORTER'S CERTIFICATE

I, Wendy McCaffrey, Registered Professional Reporter and Notary Public in and for the State of Colorado, do hereby certify that said proceedings were taken in shorthand by me at the time and place hereinabove set forth and were thereafter reduced to typewritten form under my supervision, as per the foregoing transcript; that the same is a complete, true, and correct transcription of my shorthand notes then and there taken.

I further certify that I am not related to, employed by, nor of counsel for any of the parties or attorneys herein, nor otherwise interested in the event of the within action.

My commission expires January 31, 2024; and I have hereunto set my hand this September 14, 2022.

_____
Registered Professional Reporter
and
Notary Public

Exhibit B: Attendance

ANNUAL MEETING OF THE
REPUBLICAN RIVER COMPACT ADMINISTRATION
August 31, 2022
Attendance by Location

Name	Representing
Burlington, CO	
Kevin G. Rein	Colorado Commissioner and Chairperson
Daniel Steuer	Colorado Attorney General's Office
Ivan Franco	Colorado Division of Water Resources
Mike Sullivan	Colorado Deputy State Engineer
Jesse Bradley	Nebraska Department of Natural Resources
Justin Lavene	Nebraska Attorney General's Office
Tom Riley	Nebraska Department of Natural Resources and Commissioner
Kari Burgert	Nebraska Department of Natural Resources
Samantha Capps	Nebraska Department of Natural Resources
Chris Beightel	Kansas Division of Water Resources
Kurtis Wiard	Kansas Attorney Generals Office
Earl Lewis	Kansas Division of Water Resources and Commissioner
Chelsea Erickson	Kansas Division of Water Resources
Stephanie Kramer	Kansas Attorney General's Office
Keadron Pearson	Kansas Division of Water Resources
Spencer Schlepp	Republican River Water Conservation District Member
Donna Gibson	Yuma County Resident
Don Blankenau	Attorney State of Nebraska
David Herschel	Casey Electric Association
Will Bledsoe	Republican River Water Conservation District
David Robbins	Attorney – Republican River Water Conservation District
Tim Pautler	Colorado Groundwater Commission
Deb Daniel	Republican River Water Conservation District
Peyton Liming	Republican River Water Conservation District
Danielle Holzwarth	Cheyenne County Operations District Manager
Dale Cramer	Frenchman Cambridge Irrigation District
Kevin Penny	Republican River Water Conservation District
Brad Edgerton	Frenchman Cambridge Irrigation District
Aaron Thompson	U.S. Bureau of Reclamation
Pete Wilson	District Manager for Wray State Bank
Rod Lenz	Republican River Water Conservation District
Tom Wilmoth	Attorney State of Nebraska
Kenny Helling	Republican River Water Conservation District
Robert Sakata	Sakata Farms – Appointee Colorado Water Conservation Board

Attendance by Location

Name	Representing
Carolyn Talbert	Cheyenne Groundwater Management District Manager
Lori Marintzer	U.S. Geologic Survey
Craig Scott	U.S. Bureau of Reclamation
Don Brown	Former Colorado Commissioner of Agriculture
John Miller	U.S. Geologic Survey
Nick Simonson	Lower Republican Natural Resources District Nebraska
Josh Lechman	Republican River Water Conservation District
John Cure	Yuma County Resident
Corey Pelton	Colorado Farm Service Agency
Ivy Reynolds	Farm Service agency
Woody Woods	Farm Service Agency
Matt Blecha	Colorado Division of Water Resources
Bob Hastings	Colorado River Water
Nate Pearson	Colorado Department of Natural Resources
Elizabeth Schoder	Colorado Water Conservation Board
Rod Mason	Republican River Water Conservation District
Darlene Carpio	Regional Director for Congressman Kenneth Buck
Willem Schreuder	Principia Mathematica
Chris Kucera	Colorado Division of Water Resources
Devin Ridnour	Colorado Division of Water Resources
Brandi Baquera	Colorado Division of Water Resources
Kelly Romera-Heaney	Colorado Executive Directors Office

Remote Location Zoom

Alex Boyce	MRNRD Nebraska
Alexa Davis	Nebraska Department of Natural Resources
Amelia Nills	KWO
Amy Zoller	Nebraska Department of Natural Resources
Brian Flynn	Nebraska Department of Natural Resources
Brian Lengel	N/A
David Brewster	U.S. Bureau of Reclamation
Elizabeth Esseks	Nebraska Department of Natural Resources
Miles Morgan	U.S. Bureau of Reclamation
Pete Gile	Kansas Bostwick Irrigation District

Republican River Compact Administration – Annual Meeting Attendance Sheet

August 31, 2022

Location: Burlington, CO

Name – Please Print Legibly	Affiliation/Group
Mike Sullivan	CDWR
Nick Simonsen	Lower Republican NRD
Robert T. Sakata	CWCB
Jesse Bradley	NeDNR
Kurtis Wiard	KS AG
Stephanie Kramer	KDA-DWR
Chris Beightel	KDA-DWR
Earl Lewis	KDA-DWR
Chris Beightel	CO-DWR
Devin Ridnour	CO-DWR
Tom Wilmarth	BWS / NEBRASKA
Brandi Baquera	CO-DWR
Craig Scott	USBR
Don Blankenau	Neb.
Josh Lechman	RRWCD
Kari Burgert	NEDNR
Kradon Pearson	Kansas Water Office (KWO)
Brad Edgerton	FCID

Republican River Compact Administration – Annual Meeting Attendance Sheet

August 31, 2022

Location: Burlington, CO

Name – Please Print Legibly	Affiliation/Group
Danielle Holzwarth	CN CO. Conservation Dist - KS
Tim Pantier	RRWCD
Lori Marintzer	USGS, KSWSC
Woody Woods, Corey Peston, Ivy Reynolds	USDA-FSA
John Cain	
Rod Mason	AG-WMD
John Miller	USGS
DAN STEUER	COLORADO ATTY GEN'L
MATT BLECHA	DWR
Jesse Bradley	NeDNR

Republican River Compact Administration – Annual Meeting Attendance Sheet

August 31, 2022

Location: Burlington, CO

Name – Please Print Legibly	Affiliation/Group
Sean Capps	NeDNR
Aaron Thompson	USBR
Chelsea Erickson	KS-DWR Stockton Field Office
Dale Cramer	FCID Cambridge NE
Spencer Schlepp	CDCOCP
Don Brown	RRWCD
Carolyn Talbert	ECGWMD
David W Robbins	RRWCD
Payton Liming + Deb Daniel	RRWCD
Kurt Rinn	RRWCD
DONNA GIBSON	Yuma Cty / Joes Area
Rod Lenz	RRWCD
Nate Pearson	Colorado DNR
Elizabeth Schoder	CWCB
Kenny Kelling	RRWCD
Pete Wilson	WSB
William Schneider	Principia
Darlene Capps	Rep Ken Brock

Exhibit C: Agenda

AGENDA FOR

2022 ANNUAL MEETING OF THE REPUBLICAN RIVER COMPACT ADMINISTRATION

August 31, 2022

10:00 a.m. Mountain Time/11:00 a.m. Central Time

Burlington Community Center, 340 S 14th St, Burlington, CO 80807

and virtual meeting via Zoom

Zoom link:

https://us02web.zoom.us/j/89294647022?pwd=b2RBenRXN29SS1g1T0RhNTFsWWNHdz09

Meeting ID: 892 9464 7022

1. Introductions
2. Adoption of the Agenda
3. Status of annual report for the year 2020 and possible action by the RRCA
4. Commissioners' Reports
    a. Kansas
    b. Colorado
    c. Nebraska
5. Federal Reports
    a. U.S. Bureau of Reclamation
    b. U.S. Army Corps of Engineers
    c. U.S. Geological Survey
6. Committee Reports
    a. Engineering Committee
        i. Assignments from 2021 Annual Meeting
        ii. Committee recommendations to the RRCA
        iii. Recommended assignments for Engineering Committee
        iv. Discussion of Engineering Committee Report and assignments
7. New Business and Assignments to Compact Committees
    a. Action on Engineering Committee Report and assignments
    b. Action on 2021 Accounting
8. Other Business
9. Remarks from the Public
10. Future Meeting Arrangements
11. Adjournment

Exhibit D: U.S. Bureau of Reclamation

RECLAMATION

Managing Water in the West

Nebraska-Kansas Area Office

Report

To The

Republican River

Compact Administration

Burlington, Colorado

BUREAU OF RECLAMATION

U.S. Department of the Interior
Bureau of Reclamation
Missouri Basin Region
Nebraska-Kansas Area Office

August 31, 2022

REPUBLICAN RIVER COMPACT MEETING

August 31, 2022
Burlington, Colorado

2021 Operations

As shown on the attached Table 1, precipitation in the Republican River Basin varied from 121 percent of normal at Harlan County Dam to 67 percent of normal at Trenton Dam. Total precipitation at Reclamation project dams ranged from 13.68 inches at Trenton Dam to 28.22 inches at Harlan County Dam.

Inflows varied from 34 percent of the most probable forecast at Bonny Reservoir to 125 percent of the most probable forecast at Harlan County Reservoir. Inflows into Bonny Reservoir totaled 2,295 AF while inflows at Harlan County Reservoir totaled 130,998 AF.

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

District	Farm Delivery
Frenchman Valley	0.2 inches
H&RW	0.0 inches
Frenchman-Cambridge	6.0 inches
Almena	2.3 inches
Bostwick in NE	4.6 inches
Kansas-Bostwick	10 inches

2021 Operation Notes

Bonny Reservoir – Remained empty at elevation 3638.00 feet, 34.0 feet below the top of conservation. The annual computed inflow totaled 2,295 AF, the lowest on record. Reservoir inflows were bypassed the entire year as ordered by the State of Colorado. No water was bypassed into Hale Ditch in 2021.

Enders Reservoir – The reservoir level began the year at a level of 3,081.93 feet (30.4 feet below the top of conservation). This was the second lowest level ever recorded on the first of January since initial filling. The reservoir level increased gradually during the spring to a peak elevation of 3,083.65 feet on June 2nd. Evaporation decreased the reservoir level from June through mid-November reaching elevation 3,080.69 feet on November 18th. This was the lowest elevation observed since 67 days after initial closure. Due to the extremely low water supply available, no water was released from Enders Reservoir during the irrigation season. The end of the year reservoir level was 3,080.81 feet (31.5 feet below the top of conservation). This was the lowest end of year level recorded since initial filling. The Frenchman Valley Irrigation District diverted 5,988 AF of natural flow from Frenchman Creek between April 22nd and October 15th. The H&RW Irrigation District did not divert

water into Culbertson Extension Canal in 2021. This was the nineteenth consecutive year that the district did not deliver water.

Swanson Lake – The lake level began the year at elevation 2,738.60 feet (13.4 feet below the top of conservation) and gradually increased throughout the late winter and spring. The peak elevation on June 11th was 2,743.30 feet (8.7 feet below the top of conservation). The reservoir level decreased throughout the irrigation season and reached an elevation of 2,735.65 feet on December 19th. The district diverted 18,654 AF into Meeker-Driftwood Canal from June 21st through September 3rd. At the end of the year, the reservoir level was at 2,735.70 feet (16.4 feet below the top of conservation).

Hugh Butler Lake – The reservoir level at the first of the year was 2,568.67 feet, 13.1 feet below the top of conservation. Late winter, spring and summer inflows gradually increased the lake level to a summer peak of 2,572.03 feet on June 3rd. The district diverted 5,161 AF into Red Willow Canal from May 1st through September 3rd. Late summer evaporation exceeded inflows, decreasing the lake level to 2,565.4 feet on September 29th. The end of year elevation was 2,566.13 feet (15.7 feet below the top of conservation).

Harry Strunk Lake – The reservoir level at the beginning the year was 2,359.72 feet (6.4 feet below the top of conservation). The reservoir filled to top of conservation on April 16th. Irrigation releases started May 10th. The reservoir level peaked at elevation 2,367.58 feet on May 28th. The district diverted 25,971 AF into Cambridge Canal from April 2nd through September 10th. The end of year elevation was 2,361.83 feet at the end of the year (4.3 feet below the top of conservation).

Keith Sebelius Lake – The reservoir elevation was 2,297.19 feet (7.1 feet below the top of conservation pool) at the first of the year. Late winter, spring and summer inflows gradually increased the lake level to a summer peak of 2,298.77 feet on May 31st. Irrigation releases began July 13th and finished for the season on July 30th. Approximately 2,815 AF was released from Norton Dam for irrigation of which 2,154 AF was diverted into the Almena Canal from July 15th through July 30th. Inflows in December exceeded evaporation gradually increasing the elevation to the end of year elevation of 2,294.90 feet (9.4 feet below the top of conservation).

Harlan County Lake –Harlan County Lake began 2021 at 1,943.05 feet (approximately 2.7 feet below the top of conservation pool). The Corps of Engineers made varying flood releases between April and June to keep the pool elevation near the top of conservation. Approximately 44,600 AF was released during that period. The conservation pool as well as the accumulated flood pool was split June 14th as irrigation releases began. The projected irrigation supply at the end of June was 141,404 AF. It was determined that Water Short Year Administration would not be in effect in 2021. Both NBID and KBID were able to utilize some of the flood release for irrigation. Bostwick in Nebraska Irrigation District diverted 33,723 AF in 2021. Kansas-Bostwick Irrigation District diverted 54,926 AF in 2021. A ten-year summary of Harlan County Lake operations is shown on Table 3.

Lovewell Reservoir – The reservoir elevation at the beginning of 2021 was 1,581.03 feet (1.6 feet below the top of conservation). Lovewell dam recorded 5.66 inches of precipitation in 10

days during mid to late March. This increased the lake elevation 2.3 feet to a yearly peak of 1584.34 (1.7 feet above top of conservation. Flood releases were staged up to 250 cfs. Flood waters were evacuated by April 12th. Lovewell dam recorded 4.47 inches of precipitation throughout mid to late May again raising the reservoir elevation into the flood pool. Flood releases of 250 cfs started June 1st and were maintained for about a week until irrigation releases into the canal increased. Flood releases ceased June 7th. Irrigation releases for canal seasoning/flushing began May 25th with releases in earnest beginning starting early-June and continued until September 10th. Irrigation releases lowered the lake to a yearly low of 1576.38 (6.2 feet below conservation) before a timely rain at the end of August allowed the lake to recover significantly by both reducing demand and increasing diversions into the Courtland Canal. Republican River flow was diverted via the Courtland Canal into Lovewell Reservoir after the irrigation season. The pool level at the end of the year was 1,580.92 feet (1.7 foot below top of conservation). KBID diverted a total of 54,926 AF in 2021.

Current Operations (As of 7/31/22)

Bonny Reservoir – The reservoir is currently empty. No inflows have been recorded in 2022. No water has been released into Hale Ditch in 2022. Bonny Dam has recorded 9.27 inches of precipitation during the first seven months of the year (78% of average).

Enders Reservoir - The reservoir level is currently 32.3 feet below full and 2.31 feet below last year at this time. Enders Dam recorded 7.90 inches of precipitation during the first seven months of the year (60% of normal). Due to the continuing water supply shortage, H&RW elected to not renew their water service contract in 2022. This is also the nineteenth consecutive year that Frenchman Valley Irrigation District has not received storage water for irrigation. Dead pool was reached on July 25th. The end of July elevation of 3079.99 was the lowest observed elevation since initial filling of the reservoir.

Swanson Lake – The lake level is currently 19.26 feet from full and is 7.07 feet below last year at this time. Precipitation for the year is at 48% of normal (6.56 inches). Irrigation releases began on June 14th.

Hugh Butler Lake – The lake level is currently 18.69 feet below full and is 5.50 feet below last year at this time. Irrigation releases began on June 19th. The precipitation total so far this year is 7.61 inches (58% of normal).

Harry Strunk Lake – The lake level is currently 6.80 feet below the top of conservation. Precipitation at the dam during the first seven months of the year was 13.16 inches (93% of normal). Irrigation releases began on April 21st. The lake level is currently 3.23 feet below last year at this time.

Keith Sebelius Lake – The lake is currently 12.14 feet below full. Lake level is 4.13 feet below last year at this time. Irrigation releases began July 3rd and finished July 19th. Precipitation at the dam during the first seven months of the year was 10.43 inches (65% of normal).

Harlan County Lake – The current water surface level is approximately 2.48 feet below full. The lake level is 0.94 feet below last year at this time. Harlan County Dam has recorded 11.60 inches of precipitation so far this year (77% of normal). Irrigation releases started on June 11th. The available irrigation supply from Harlan County Lake on June 30th was 130,834 AF.

Lovewell Reservoir – The reservoir level is currently 2.5 feet below the top of conservation and approximately 1.80 feet above last year's elevation at this time. Lovewell Dam recorded 15.00 inches of precipitation during the first seven months of the year (86% of average). Canal releases began on May 19th.

A summary of data for the first seven months of 2022 is shown on Table 2.

TABLE 1
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows
CALENDAR YEAR 2021

Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-20 AF	Storage 12-31-21 AF	Gain or Loss AF	Maximum Content AF	Storage Date	Minimum Content AF	Storage Date	Total Inflow AF	Percent Of Most Probable %
Box Butte	12.37	72	14,856	10,681	-4,175	22,601	6/4	7,285	9/1	21,968	146
Merritt	19.21	90	61,100	60,966	-134	65,655	5/17	48,207	8/19	223,085	118
Calamus	19.90	79	96,864	92,689	-4,175	121,202	5/17	62,401	9/19	313,821	117
Davis Creek	23.52	90	12,637	13,024	387	28,074	6/16	12,073	3/11	57,974	119
Bonny	17.93	101	0	0	0	0	#N/A	0	#N/A	2,295	34
Enders	16.09	83	8,638	7,983	-655	9,753	6/2	7,913	11/18	4,001	77
Swanson	13.68	67	55,478	46,186	-9,292	72,408	6/11	46,033	12/19	22,902	89
Hugh Butler	18.98	95	18,430	15,811	-2,619	22,279	6/3	15,106	9/29	8,731	85
Harry Strunk	19.35	91	24,696	27,646	2,950	37,454	5/28	20,575	9/9	31,212	76
Keith Sebelius	20.89	83	21,197	17,753	-3,444	23,792	5/31	17,710	12/5	6,222	94
Harlan County	28.22	121	279,631	280,385	754	326,076	6/1	270,202	8/22	130,998	125
Lovewell	24.55	88	31,163	30,861	-302	41,093	3/26	19,936	8/13	57,851	90
Kirwin	24.03	100	90,582	85,227	-5,355	106,054	6/21	83,978	9/27	36,820	130
Webster	22.39	94	69,098	62,254	-6,844	84,474	6/3	60,697	9/29	37,542	200
Waconda	22.55	88	208,367	220,177	11,810	251,969	5/20	206,057	1/22	248,810	183
Cedar Bluff	17.83	84	106,503	98,996	-7,507	111,370	6/4	98,996	12/30	14,480	121

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

JANUARY - JULY 2022

Reservoir	Precip. Inches	Percent Of Average %	Storage 7/31/2021 AF	Storage 7/31/2022 AF	Gain or Loss AF	Inflow AF	Percent Of Most Probable %
Bonny	9.27	78	0	0	0	885	23
Enders	7.90	60	8,885	7,510	(1,375)	2,421	83
Swanson	6.56	48	59,602	37,523	(22,079)	13,859	69
Hugh Butler	7.61	58	18,701	12,999	(5,702)	4,251	63
Harry Strunk	13.16	93	28,676	24,133	(4,543)	19,538	73
Keith Sebelius	10.43	65	19,799	14,126	(5,673)	3,541	75
Harlan County	11.60	77	294,015	282,145	(11,870)	58,162	78
Lovewell	15.00	86	23,500	26,889	3,389	19,456	102

Inflow at Swanson Lake includes water from augmentation (pumping) projects.

TABLE 3
HARLAN COUNTY LAKE

Year	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Precipitation Harlan County Dam* (% of Average)	Precipitation Rep. Basin Dams (% of Average)	End of Year Content (AF)	**Projected Irrig. Water Supply On June 30th (AF)**
2012	78,581	160,221	50,199	18.14	78%	64%	191,125	**132,900**
2013	48,794	75,355	40,042	17.46	75%	83%	124,522	**81,400**
2014	92,209	35,502	32,387	18.53	80%	105%	148,842	**59,000**
2015	106,728	54,502	33,652	28.85	125%	115%	167,416	**79,600**
2016	126,679	63,972	35,920	27.82	120%	109%	194,203	**103,500**
2017	118,889	52,764	36,081	26.60	115%	104%	224,247	**111,600**
2018	120,146	53,451	35,914	29.61	128%	128%	255,028	**106,600**
2019	402,546	272,471	55,374	30.94	134%	132%	329,729	**139,716**
2020	125,674	130,068	45,704	17.38	75%	74%	279,631	**143,392**
2021	130,998	88,222	42,022	28.22	121%	91%	280,385	**141,404**

NOTE: On June 30, 2022 Projected Irrigation Water Supply was 130,834 AF.
* Average Annual Precipitation at Harlan County Dam is 23.13 inches

Exhibit E: U.S. Geological Survey Report

Republican River Basin streamflow-gaging stations with records published by USGS for water year (WY) 2021

[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^3/s) WY 2021	Mean discharge (ft^3/s) Long-term	WY 2021 as percentage of long-term mean	WY 2021 as rank/years (1 highest)	WYs used for long-term mean	Remarks
USGS Compact stations supported by the Groundwater Streamflow Information Program (GWSIP)							
06821500	Arikaree River at Haigler, Nebr	2.3	15.1	15.1%	71/89	1933 - 2021	
06823000	North Fork Republican River at Colo-Nebr State Line	33.0	40.9	80.7%	69/86	1936 - 2021	
06823500	Buffalo Creek near Haigler, Nebr	2.3	5.7	40.3%	73/81	1937 - 2021	
06824000	Rock Creek at Parks, Nebr	4.4	11.9	36.8%	81/81	1938 - 2021	
06824500	Republican River at Benkelman, Nebr	38.4	77.8	49.4%	54/54	1939 - 2021	
06827500	South Fork Republican River near Benkelman, Nebr	0.4	31.8	1.4%	78/84	1940 - 2021	
06835500	Frenchman Creek at Culbertson, Nebr	24.3	62.2	39.1%	68/71	1941 - 2021	Since Enders Reservoir
06836500	Driftwood Creek near McCook, Nebr	2.9	7.8	37.0%	65/75	1942 - 2021	
06838000	Red Willow Creek near Red Willow, Nebr	5.7	12.6	45.4%	53/60	1943 - 2021	Since Hugh Butler Lake
06847000	Beaver Creek near Beaver City, Nebr	1.1	14.1	7.8%	64/84	1944 - 2021	
06847500	Sappa Creek near Stamford, Nebr (USACE funds DCP)	20.9	36.3	57.6%	31/75	1945 - 2021	
06852500	Courtland Canal at Nebr-Kans State Line (USBR DCP)	79.2	74.6	106.2%	29/67	1946 - 2021	
06853020	Republican River at Guide Rock, Nebr	159.2	254.2	62.6%	38/71	1947 - 2021	Based on record from this and upstream station 06853000
USGS stations supported by USGS and/or other Federal or State agencies							
06828500	Republican River at Stratton, Nebr	31.6	88.0	35.9%	63/71	1951 - 2021	Funded by USACE and GWSIP
06837000	Republican River at McCook, Nebr	28.1	114.2	24.6%	63/67	1955 - 2021	Funded by USBR, NDNR, and GWSIP
06844500	Republican River near Orleans, Nebr	108.1	218.3	49.5%	62/74	1948 - 2021	Funded by USACE and GWSIP
NDNR stations with USGS/USACE support for DCP, Web display, review, and publishing							
06834000	Frenchman Creek at Palisade, Nebr	16.5	55.6	29.7%	69/71	1951 - 2021	
06843500	Republican River at Cambridge, Nebr	69.6	198.2	35.1%	66/72	1952 - 2021	Since Harry Strunk Lake

Online Annual Water Data Reports available at or through:

http://wdr.water.usgs.gov

https://www.usgs.gov/centers/ne-water

USGS North Platte Field Office
John Miller (jdmiller@usgs.gov)
308-532-5323

USGS Lincoln Field Office
Tim Boyle (tboyle@usgs.gov)
402-328-4125

Exhibit F: Engineering Committee Report

Engineering Committee Report Republican River Compact Administration

August 31st, 2022

EXECUTIVE SUMMARY

The Engineering Committee (EC) met four times since the August 25, 2021, Republican River Compact Administration (RRCA) Annual Meeting. Over the past year, the EC completed these assignments: 1) hold quarterly meetings; 2) exchange information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, including all required data and documentation; 3) finalize 2021 accounting; 4) continue work on documenting historical changes to the RRCA Accounting Procedures; 5) provide updates on the progress of new and ongoing management strategies for maintaining compact compliance; 6) continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provide regular updates to the EC; 7) continue work and provide updates on improving accounting tools developed by the Engineering Committee; 8) prepare the 2021 RRCA annual meeting report; and 9) retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

Ongoing assignments include: 1) hold quarterly meetings; 2) continue work on documenting historical changes to the RRCA Accounting Procedures; 3) provide updates on the progress of new and ongoing management strategies for maintaining compact compliance; 4) work on maintaining and enhancing the RRCA public website; 5) continue work and provide future updates on improving accounting tools developed by the Engineering Committee.

The EC recommends discussion by the RRCA on the exchange of data, modeling results, and proposed accounting for 2021; modeling and data tasks to be assigned to Principia Mathematica for 2022; the document summarizing historical changes to the RRCA Accounting Procedures; Kansas's climate-based pumping estimations; and recommended EC assignments and other potential assignments for the next year.

Details of the various EC tasks are described further in the remainder of this report, including:

Attachment 1: Minutes of the quarterly meetings of the EC
Attachment 2: Accounting Inputs and Accounting Tables from the RRCA Accounting for 2021 recommended by the EC for approval by the RRCA (Task 3)

COMMITTEE ASSIGNMENTS AND RELATED WORK ACTIVITIES

1. Meet quarterly to review the tasks assigned to the committee.
    a. The EC met November 4, 2021; January 20, 2022; April 15, 2022; and July 14, 2022. See Attachment 1 for the approved minutes of these meetings.
    b. The EC recommends that this task continue.
2. Exchange by April 15, 2022, the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that

document, including all necessary documentation. By July 15, 2022, the states will exchange any updates to these data.

   a. Nebraska posted its data on April 15, 2022, and provided an update on July 12, 2022.

   b. Kansas posted its data on April 12, 2022, and provided an update to the data on July 12, 2022.

   c. Colorado posted its data on April 5, 2022, and added Crop Irrigation Requirement (CIR) data on June 27, 2022.

3. Finalize the 2021 accounting and recommend it for approval by the RRCA.

   a. Colorado, Kansas, and Nebraska accounting data for 2021 are final and the EC hereby recommends approval of the accounting by the RRCA.

   b. The applicable summary accounting tables are presented in Attachment 2.

4. Continue work on creating a document memorializing when RRCA Accounting Procedures have changed over the years and incorporate it into the Accounting Procedures (AP).

   a. The EC made updates to this document on January 10, 2022, and has posted the document to the RRCA public website "www.republicanriver.org". The EC will continue to maintain the AP tracking document and publish it on the website.

5. Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance.

   a. Nebraska provided updates on efforts by the NRDs to install telemetry on groundwater well meters within their respective districts. There was also discussion on the wildfires, which had struck the state during 2022, and that Tri-Basin NRD had issued exemptions for a period allowing wells to be used for fire suppression without having the pumping counting towards any annual allocation. Nebraska also gave updates on the drought planning exercise with stakeholders in the basin, which was held on May 19, 2022.

   b. Kansas provided updates on water rights in the Lower Republican River, which were curtailed in an effort to protect statutorily defined minimum desirable stream flows. The EC heard several updates on the status of automation efforts on the Courtland Canal along with preliminary information on the status of the Bureau of Reclamation-sponsored Regional Conservation Partnership Program in the Upper Republican River Basin which will focus on phreatophyte removal along the river channel.

   c. The EC discussed the climate-based analyses for evaluating water savings proposal by Kansas. The EC discussed possible use of these methods to predict groundwater pumping to improve prospective compact accounting estimates for planning purposes.

   d. Colorado provided updates on deliveries by the Colorado Compliance Pipeline.

   e. The EC recommends this task as a recurring assignment.

6. Continue efforts to develop and publish an administrative website that would be an informational page for the public.
    a. State staff have maintained and updated the website, which is accessible to the public, and reported back to the EC.
    b. The EC recommends this task as a recurring assignment.
7. Continue work and provide future updates on improving accounting tools developed by the Engineering Committee.
    a. The EC continues to use the website accounting tool to validate the accounting spreadsheet results.
    b. The EC discussed the overlap in the Courtland Canal above Lovewell and Attachment 7 inputs and calculations that when combined with varying data sources were causing inconsistencies in the accounting spreadsheet. The EC will continue to pursue this issue to improve the accounting spreadsheet.
    c. The EC recommends this task as a recurring assignment.
8. Prepare the 2021 RRCA annual meeting report for approval by the RRCA at the 2022 annual meeting.
    a. The report has been finalized and approved by the EC and is hereby recommended for approval by the RRCA.
9. Retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.
    a. Principia Mathematica (Willem Schreüder) informed the EC that contracts had been renewed with both Colorado and Nebraska. Willem noted that Kansas has fulfilled its financial obligation without a formal contract in place and this has not been an issue and can continue.

ITEMS FOR RRCA DISCUSSION & ACTION

1. Data exchange and modeling results for 2021. The EC recommends the proposed 2021 accounting presented in Attachment 2 and in the spreadsheet titled "RRCA Accounting 2021 Final.xlsx" for approval by the RRCA. Upon approval of the accounting, the above-mentioned spreadsheet file will be placed on the public website.
2. Modeling and data tasks to be assigned to Principia Mathematica for 2022. The EC recommends that Principia Mathematica continue to maintain the web-based accounting tool and perform periodic model and accounting updates at the same level of service as in 2021.
3. The document summarizing historical changes to the RRCA Accounting Procedures is current and being maintained by the EC. The EC recommends that the document continue to be maintained by the EC as an ongoing assignment.
4. Kansas' climate-based pumping estimator is showing potential to be useful in improving early groundwater modeling forecasts. The EC recommends that it be

assigned to continue evaluating the climate-based pumping estimator as a forecasting tool as part of Assignment 7 below.

5. Discussion of the recommended EC assignments and other potential assignments for the next year and agreement on a final set of assignments. The EC presents the following list of recommended assignments to report on at the 2022 annual meeting of the RRCA.

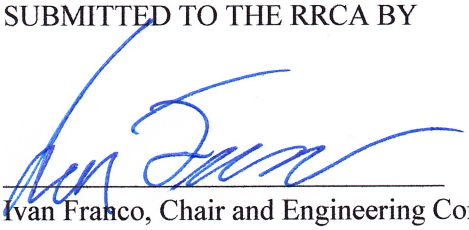
RECOMMENDED ASSIGNMENTS FOR THE COMING YEAR

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

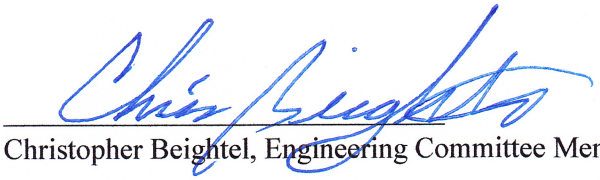
1. Meet quarterly to review the tasks assigned to the committee.
2. Exchange by April 15, 2023, the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document, including all necessary documentation. By July 15, 2023, the states will exchange any updates to these data.
3. Finalize the 2022 accounting and recommend it for approval by the RRCA.
4. Maintain and publish updates to *Summary of Historical Changes to the RRCA's Accounting Procedures and Reporting Requirements* as necessary.
5. Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance.
6. Continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provide regular updates to the EC.
7. Continue work and provide future updates on improving accounting tools developed by the Engineering Committee.
8. Prepare the 2022 RRCA annual meeting report for approval by the RRCA at the 2023 annual meeting.

The Engineering Committee Report and the exchanged data will be posted on the web at

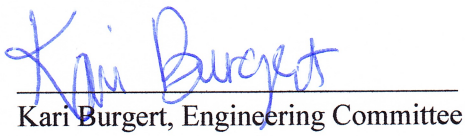
SUBMITTED TO THE RRCA BY



Ivan Franco, Chair and Engineering Committee Member for Colorado



Christopher Beightel, Engineering Committee Member for Kansas



Kari Burgert, Engineering Committee Member for Nebraska

MINUTES for the
QUARTERLY MEETING of the
ENGINEERING COMMITTEE of the
REPUBLICAN RIVER COMPACT ADMINISTRATION
November 4, 2021 10:00 AM Mountain Time

Meeting was held via Google meeting.

Attendees:

Chris Beightel KS
Kari Burgert, NE
Hongsheng Cao, KS
Sam Capps, NE
Alexa Davis, NE
Chelsea Erickson, KS
Willem Schreüder, CO
Elizabeth Esseks, NE
Ivan Franco, CO

1. Introductions
   1.1. The meeting started at approximately 10:00 a.m. MT
2. Review/Modify Agenda
   2.1. No revisions or modifications to the agenda.
3. Review and Update Progress on Engineering Committee Task List
   3.1. Meet quarterly to review the tasks assigned to the committee.
   - The three remaining Engineering Committee meeting have been scheduled and there is no need for modification of the planed dates and times.

   3.2. Exchange by April 15, 2022, the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document, including all necessary documentation. By July 15, 2022, the states will exchange any updates to these data.

   - No substantive comments from any of the three states at this point.
   - Willem sent a preliminary run for the 2021 year on November 2nd to the three states. The run repeats the 2019 data for each state as 2020 was an outlier year. The methodology proposed by Sam Perkins has not been incorporated yet in any form but a preliminary sensitivity analysis does not yield much difference between 2019 and the suggested year. However, Willem still believes it may provide benefit. Willem noted that in updating the Evapotranspiration for November 2021 some data had been updated from August 2021.

   3.3. Finalize the 2021 accounting and recommend it for approval by the RRCA.

   - Courtland Canal Data is in two locations in the accounting.
     - Kari suggested moving this task under "Continue work and provide future updates on improving accounting tools developed by the Engineering Committee". At this point we will leave it here and move it if we do not make the deadline.
     - Kari provided a quick summary of the issue. The Bureau of Reclamation provides Courtland Canal data in the monthly water distributions and in a worksheet called "Court wrk sht" a. Discussion with the Bureau last year indicated that there are differences in the data based on who and when they are filled in. We also have been obtaining data for the stateline flows from the USGS. The Courtland Canal data are input into the RRCA accounting spreadsheets in multiple locations, including Inputs tab, Attachment 7 tab, and a CourtlanAvLove tab. These multiple source spreadsheets and multiple input locations double up on the same data, and this can lead to confusion and discrepancies in the calculations.
     - **Action Item: Kari will draft an email distilling down where we have seen issues with the data reporting in order to get a good sense of the issue and for the EC to be able to**

provide feedback to the USBR.

3.4. Maintain and publish updates to Summary of Historical Changes to the RRCA's Accounting Procedures and Reporting Requirements as necessary.

- Ivan noted that this document had tentative changes that needed to be made upon expected actions at the 2021 RRCA Annual Meeting. These actions were taken as expected (PRISM data change) and the changes should be implemented into the current working version. Kari will provide an updated version of this document to the group.
- **Action Item: Kari will integrate the changes into this document and distribute to the group.**

3.5. Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance.

- Chris provided general information regarding the automation of the diversion gate at the Guide Rock dam. Lovewell Reservoir is full and diversions into the reservoir have ceased. In northwest Kansas staff is working on dispersing settlement funds. One potential project is the construction of several low head dams in the area.
- Chelsea noted that the Kansas Water Office applied for a grant and were awarded monies to clean up Phreatophytes on the South Fork of the Republican River. It seems this will not commence until fall of 2022.
- Sam Capps noted that Nebraska is working on contracts with NBID and Frenchman Valley/Creek on gate automations and well projects. There are also irrigation retirement contracts in the works with multiple NRDs along with well telemetry that is moving forward.
- Willem noted that the CCP should start around November 11th with a total anticipated delivery of about 9,000 acre-feet with about 2,500 and 3,000 acre-feet delivered by the end of the year.

3.6. Continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provide regular updates to the EC.

- Chelsea is interested in adding a gage page to the website but has not made any progress on this yet. There is talk of the USGS restructuring there gage website so she is holding until there is some action on this front.
- Kari noted that Alexa Davis will be the new representative for Nebraska on the website committee.

3.7. Continue work and provide future updates on improving accounting tools developed by the Engineering Committee.

- **Consider/Implement the refinement for pumping estimates proposed by Kansas**
- At this time, there is no discussion on this subject.

3.8. Prepare the 2021 RRCA annual meeting report for approval by the RRCA at the 2021 annual meeting

- Kari has noted that the Transcript has been received and is being reviewed. This will be distributed to the other states in the near future. Kari noted that the nature of the changes would focus on necessary changes versus minor capitalization or grammatical errors.
- **Action item: Nebraska will prepare initial proposed edits and send to the other two states for comment.**

3.9. Retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

- Willem noted that each state is handling their contracts differently and in December of each year he sends each state a bill and has not had an issue with payment (at times with a contract in place or without one).
- Kansas believes they have been paying Willem without a contract.
-

4. Summary of Meeting Actions/Assignments (in bold)
    - **Kari will send out an email with summarizing the Courtland Canal issue.**
    - **Kari will send out an update of the Summary of Historical Changes document.**
    - **Each state will review how they have handled Willems contract for further discussion at the next meeting.**
5. Future Meetings

    5.1. The next meeting is scheduled to be held January 13, 2022 at 10 am MST.
6. Adjourn

    6.1. The meeting adjourned at approximately 10:35 a.m.

MINUTES for the
QUARTERLY MEETING of the
ENGINEERING COMMITTEE of the
REPUBLICAN RIVER COMPACT ADMINISTRATION
January 20, 2022 10:00 AM Mountain Time

Meeting was held via Google meeting.

Attendees:

Chris Beightel KS
Kari Burgert, NE
Hongsheng Cao, KS
Willem Schreüder, CO
Elizabeth Esseks, NE
Ivan Franco, CO

1. Introductions
   1.1. The meeting started at approximately 10:00 a.m. MT
2. Review/Modify Agenda
   2.1. No revisions or modifications to the agenda.
3. Review and Update Progress on Engineering Committee Task List
   3.1. Meet quarterly to review the tasks assigned to the committee.
   - The two remaining Engineering Committee meeting have been scheduled and there is no need for modification of the planed dates and times.

   3.2. Exchange by April 15, 2022, the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document, including all necessary documentation. By July 15, 2022, the states will exchange any updates to these data.

   - Kari let the group know that Nebraska would soon be emailing the Bureau of Reclamation requesting the canal data. In an effort to coordinate, she would copy staff from Kansas and Colorado when that email is sent.

   3.3. Finalize the 2021 accounting and recommend it for approval by the RRCA.

   - Courtland Canal Data is in two locations in the accounting.
     - Willem's most recent model update was done on January 3, 2022, which utilized the best estimate of canal diversion and gage flow data. Willem does not anticipate much of a change in the gage flows. The PRISM data will continue to be updated over the next several months, as there may be some small changes.
     - Kari reported that Nebraska is still working on drafting an email that distills down where we have seen issues with data reporting.
     - **Action Item: Kari will draft an email distilling down where we have seen issues with the data reporting in order to get a good sense of the issue and for the EC to be able to provide feedback to the USBR.**

   3.4. Maintain and publish updates to Summary of Historical Changes to the RRCA's Accounting Procedures and Reporting Requirements as necessary.

   - The document is currently up to date. No additional discussion was needed.

   3.5. Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance.

   - No updates from Kansas
   - Kari noted that Nebraska had published and sent out the Water Supply Forecast for 2022 to each of the states. There were no questions from the group.

- Willem noted that the Compact Compliance Pipeline will likely shut off in around the middle of April. The initial forecast is predicting about 9,000 acre-feet total for 2022 with 6,000 coming in the spring and 3,000 acre-feet in the fall. This may change slightly as the year progresses.

3.6. Continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provide regular updates to the EC.

- Chelsea was not on the call. Ivan noted that there might be the potential additional of a gauge flow page at some point in the future but there has been no progress on this issue.
- There was some discussion from the group concerning the Summary of Historical Changes document and whether or not it was available on the website.
    - **Action item: Kansas will follow-up to see if the Summary of Historical Changes document can be uploaded to the website.**

3.7. Continue work and provide future updates on improving accounting tools developed by the Engineering Committee.

- **Consider/Implement the refinement for pumping estimates proposed by Kansas**
- Chris noted that he did not have anything significant to add at this time. He is waiting to hear back from Willem when he gets more time to look at the estimate methodology.
- Willem pointed out that early on in the year there is no way of knowing what the precipitation will be. As the year progresses additional data becomes available which might make an August/September estimate useful. Willem noted that Sam indicated decent correlation existed by August/September between precipitation and summertime pumping.
- Kari took an opportunity to let the group know that the NRDs are working on telemetry equipment on each well to get pumping data more quickly. Kari noted that it may be around 1/3 of the wells in the NRDs that are currently done and in coming years, the NRDs are planning on having all the wells connected.
- Willem asked why the wells were all getting telemetry considering the cost. Kari thought that Sam Capps, NeDNR, might have more information on this point and suggested that she follow up at the next meeting with more information. Kari pointed out that staff is visiting each well each year and taking readings and not having to do this would save labor.
    - **Action item: Nebraska will prepare to answer questions on the topic at the next EC meeting.**

3.8. Prepare the 2021 RRCA annual meeting report for approval by the RRCA at the 2021 annual meeting

- Elizabeth noted that the court reporter has the edited transcripts and is working on returning a final product.

3.9. Retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

- Willem noted that Colorado and Nebraska have renewed their contracts. Kansas paid the annual amount due but does not have a contract (and has not for some time). However, both Willem and Chris do not see this as an issue and everything will continue in the same manner.

4. Summary of Meeting Actions/Assignments (in bold)
    - **Kari will send out an email with summarizing the Courtland Canal issue.**
    - **Nebraska will be ready to field questions on telemetry at the next meeting.**
    - **Chelsea will investigate getting the Summary of Historical Changes document loaded to the website.**
5. Future Meetings

5.1. The next meeting is scheduled to be held April 15, 2022 at 10 am MST.

6. Adjourn

6.1. The meeting adjourned at approximately 10:33 a.m.

MINUTES for the
QUARTERLY MEETING of the
ENGINEERING COMMITTEE of the
REPUBLICAN RIVER COMPACT ADMINISTRATION
April 15, 2022 10:00 AM Mountain Time

Meeting was held via Google meeting.

Attendees:

Chris Beightel KS	Samantha Capps, NE
Kari Burgert, NE	Elizabeth Esseks, NE
Hongsheng Cao, KS	Ivan Franco, CO
Alexa Davis, NE	Sam Perkins, KS

1. Introductions
   1.1. The meeting started at approximately 10:00 a.m. MT
2. Review/Modify Agenda
   2.1. No revisions or modifications to the agenda.
3. Review and Update Progress on Engineering Committee Task List
   3.1. Meet quarterly to review the tasks assigned to the committee.
   - One remaining Engineering Committee meeting has been scheduled and there is no need for modification of the planed date and time.

   3.2. Exchange by April 15, 2022, the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document, including all necessary documentation. By July 15, 2022, the states will exchange any updates to these data.

   - Nebraska is in the process of sending out data. Kansas and Colorado have disseminated their data.

   3.3. Finalize the 2021 accounting and recommend it for approval by the RRCA.

   - Courtland Canal Data is in two locations in the accounting.
     - Nebraska is still working on the email summarizing their concerns. No update at this time.
     - Kansas noted that there will be a slight update to their data in July as is usually the case.
     - **Action Item: Kari will draft an email distilling down where we have seen issues with the data reporting in order to get a good sense of the issue and for the EC to be able to provide feedback to the USBR.**

   3.4. Maintain and publish updates to Summary of Historical Changes to the RRCA's Accounting Procedures and Reporting Requirements as necessary.

   - The document is currently up to date. Chelsea used the most current version (January 10th 2022) of this document and posted this document to the website. Chelsea asked if should include a date noting the current version in the header/footer. The group had no issue including this in the header/footer.

   3.5. Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance.

   - Kansas noted that orders had gone out to some 200 water rights in the lower Republican River curtailing them for minimum desirable stream flows. The was caused by a flow trigger at the Clay Center gage. Chris was not able to speak with Kansas Bostwick Irrigation district to get an update on automating the Courtland Canal. Chris felt the District was getting close to having the Guide Rock diversion automated and when complete, the river would be swept to start filling Lovewell Reservoir. Chris had no update on the RCPP project in the Upper Republican.
   - Nebraska had an update on fires throughout the Republican Basin. Sam noted that a larger fire

recently burned thru the Tri-Basin NRD and the Lower Republican NRD. Frenchman Cambridge reported losses to canal infrastructure and pivots in the area. Tribasin NRD has issued an exemption thru June 1st to allow pumping for fire suppression without having this pumping count against annual allocations. Sam noted that a drought planning exercise is scheduled to be held on May 19th .

- Colorado gave an update on the CCP confirming that the pumping would match the most recent projections of approximately 9,500 acre-feet, with 2/3rd of the water being pumped in the spring 2022.
- Nebraska gave an update on the telemetry work in the state. The NRDs own the meters and provide service to the meters. The funding is mixed between the NRDs, state, BOR providing the bulk of the funding. The NRD's are pushing this forward for better real time data for irrigator water use. The Middle Republican is working towards producing a dashboard for irrigators to make better management decisions. Kansas noted that they are also interested in implementing a telemetry program. Nebraska encouraged Kansas to reach out to the Upper and Middle Republican NRDs if they wanted to discuss specifics. Nebraska noted that BOR, thru a WaterSmart Grant, pays for 50 percent of the total cost and DNR/NRD split the rest 60/40.
    - **Action item: Colorado will follow-up to see if they can provide any additional information on the Bonny Reservoir Rehabilitation project.**

3.6. Continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provide regular updates to the EC.

- Chelsea gave on update on update plans for the website. Chelsea proposed including a link to the USGS gage data to make this available on the site with minimal effort/duplication. Nebraska also noted that a couple of the gages are serviced by Nebraska and links could also be included.

3.7. Continue work and provide future updates on improving accounting tools developed by the Engineering Committee.

- Consider/Implement the refinement for pumping estimates proposed by Kansas
- No discussion. Differed to next meeting.

3.8. Prepare the 2021 RRCA annual meeting report for approval by the RRCA at the 2021 annual meeting

- Elizabeth noted that the transcript is 99% done and a draft report would be disseminated soon.

3.9. Retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

- No discussion needed

4. Summary of Meeting Actions/Assignments (in bold)
    - **Kari will send out an email summarizing the Courtland Canal data issue.**
    - **Colorado will see if more information is available regarding the Bonny Rehabilitation Project.**
    - **Colorado will set a date and location for the Annual Meeting.**
5. Future Meetings

    5.1. The next meeting is scheduled to be held July 14, 2022 at 10 am MST.
6. Adjourn

    6.1. The meeting adjourned at approximately 10:39 a.m.

MINUTES for the
QUARTERLY MEETING of the
ENGINEERING COMMITTEE of the
REPUBLICAN RIVER COMPACT ADMINISTRATION
July 14, 2022 10:00 AM Mountain Time

Meeting was held via Google meeting.

Attendees:

Chris Beightel, KS
Kari Burgert, NE
Hongsheng Cao, KS
Jesse Bradley, NE
Chelsea Erickson, KS
Samantha Capps, NE
Brian Flynn, NE
Ivan Franco, CO
Sam Perkins, KS

1. Introductions
   1.1. The meeting started at approximately 10:00 a.m. MT
2. Review/Modify Agenda
   2.1. No revisions or modifications to the agenda.
3. Review and Update Progress on Engineering Committee Task List
   3.1. Meet quarterly to review the tasks assigned to the committee.
   - No remaining Engineering Committee meetings. Annual Meeting scheduled for August 31st.

   3.2. Exchange by April 15, 2022, the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document, including all necessary documentation. By July 15, 2022, the states will exchange any updates to these data.

   - Willem had sent an email earlier in the week noting that Table 3C in the proposed 2021 accounting referenced GM_output tab row 32 and should likely be changed to reference GM_output row 31. Nebraska agreed to this change and will send out revised accounting.

   3.3. Finalize the 2021 accounting and recommend it for approval by the RRCA.

   - Courtland Canal Data is in two locations in the accounting.
     - Nebraska informed the group that they continue to work on an email detailing Courtland Canal Data improvements. They noted that the EC had agreed to use the Stateline flows from the USGS rather than USBR, but this results in differences from calculated values on the "Court wrk sht" that USBR provides which are inputs to the accounting. Nebraska will use the calculated values from the USBR in the revised accounting spreadsheet for 2021; the discrepancy is small but it would be good to find a way to avoid this.
     - **Action Item: Kari will draft an email distilling down where we have seen issues with the data reporting in order to get a good sense of the issue and for the EC to be able to provide feedback to the USBR.**

   3.4. Maintain and publish updates to Summary of Historical Changes to the RRCA's Accounting Procedures and Reporting Requirements as necessary.

   - No discussion necessary

   3.5. Provide updates on the progress of new and ongoing management strategies for maintaining compact compliance.

   - Nebraska noted that they held a Republican River drought exercise on May 19th with stakeholders in the basin. Sam noted that the NRDs came away with a good sense of how the state would handle future drought situations.
   - Kansas noted that they received a communication from Pete Gile at Kansas-Bostwick and the

automation efforts on the Courtland Canal are going well. There is also a high likelihood of implementing automation technology in the lower part of the canal coming out of Lovewell Reservoir.

- Kansas gave a short update on the Regional Conservation Partnership Program. The program would largely consist of phreatophyte removal and efficiency improvements on rangeland wells. Kansas noted that the program is still at the national review level and any actual work is not expected to occur soon.

3.6. Continue development and maintenance of the RRCA administrative website that serves as an informational page for the public and provide regular updates to the EC.

- Chelsea noted that there have been no changes to the website worth noting. Chelsea noted that a "security certificate" is in the works with Kansas IT to keep the website up-to-date and secure.

3.7. Continue work and provide future updates on improving accounting tools developed by the Engineering Committee.

- **Consider/Implement the refinement for pumping estimates proposed by Kansas**
- Chris noted that Sam had done some additional work on this topic and that the materials would be forwarded along as time permits. Willem noted that the pumping estimate methodology would be useful to utilize at the end of August to help get a better handle on the current year's pumping estimate. Sam noted that the current predictions for 2022 result in a 2-inch increase in pumping for Colorado and Kansas over last year and a 2 ½-inch increase for Nebraska. Sam noted that his 2021 prediction is about 4/10th off with data through August to give us an idea of how accurate these predictions might be. Willem theorized that this data could be used in determining a ratio of current year to last year's pumping. This would result in a uniform factor, which could be applied to each state's prior year pumping. Sam felt this approach could work well.

- **Action Item: Sam will continue to assist Willem in improving the 2022 pumping estimate and future in-year estimates.**

3.8. Prepare the 2021 RRCA annual meeting report for approval by the RRCA at the 2021 annual meeting

- Colorado will finish reviewing the draft document as soon as possible and forward it along to Kansas.

3.9. Retain a contract with Principia Mathematica for the period and scope outlined by the commissioners.

- No significant discussion on this matter.

4. Summary of Meeting Actions/Assignments (in bold)
   - **Kari will send out an email with summarizing the Courtland Canal issue.**
   - **Sam will continue to work with Willem on a 2022 pumping estimate.**
5. Future Meetings

   5.1. The next meeting will be the Annual Meeting on August 31, 2022 at 10 am MST.
6. Adjourn

   6.1. The meeting adjourned at approximately 10:39 a.m.

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Accounting Inputs

Calendar Year		**2021**
Groundwater Data		
North Fork Subbasin	GW CBCU Colorado	*17,951*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*1,272*
Arikaree Subbasin	GW CBCU Colorado	*1,443*
	GW CBCU Kansas	*115*
	GW CBCU Nebraska	*110*
Buffalo Subbasin	GW CBCU Colorado	*437*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*3,569*
Rock Subbasin	GW CBCU Colorado	*82*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*5,113*
South Fork Subbasin	GW CBCU Colorado	*13,764*
	GW CBCU Kansas	*5,176*
	GW CBCU Nebraska	*774*
Frenchman Subbasin	GW CBCU Colorado	*200*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*79,922*
Driftwood Subbasin	GW CBCU Colorado	*0*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*828*
Red Willow Subbasin	GW CBCU Colorado	*0*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*8,862*
Medicine Creek Subbasin	GW CBCU Colorado	*0*
	GW CBCU Kansas	*0*
	GW CBCU Nebraska	*20,562*
Beaver Subbasin	GW CBCU Colorado	*0*
	GW CBCU Kansas	*5,163*
	GW CBCU Nebraska	*3,228*
Sappa Subbasin	GW CBCU Colorado	*0*
	GW CBCU Kansas	*1,241*
	GW CBCU Nebraska	*1,560*
Prairie Dog Subbasin	GW CBCU Colorado	*0*
	GW CBCU Kansas	*2,724*
	GW CBCU Nebraska	*0*
Mainstem Subbasin	GW CBCU Colorado	*(3,839)*
	GW CBCU Kansas Above Guide Rock	*(353)*
	GW CBCU Kansas Below Guide Rock	*56*
	GW CBCU Nebraska Above Guide Rock	*62,951*
	GW CBCU Nebraska Below Guide Rock	*2,534*

Import Water Data		
North Fork Subbasin	Imported Water Nebraska	*0*
Arikaree Subbasin	Imported Water Nebraska	*0*
Buffalo Subbasin	Imported Water Nebraska	*0*
Rock Subbasin	Imported Water Nebraska	*0*
South Fork Subbasin	Imported Water Nebraska	*0*
Frenchman Subbasin	Imported Water Nebraska	*0*
Driftwood Subbasin	Imported Water Nebraska	*0*
Red Willow Subbasin	Imported Water Nebraska	*49*
Medicine Creek Subbasin	Imported Water Nebraska	*10,693*
Beaver Subbasin	Imported Water Nebraska	*0*
Sappa Subbasin	Imported Water Nebraska	*29*
Prairie Dog Subbasin	Imported Water Nebraska	*0*
Mainstem Subbasin	Imported Water Nebraska Above Guide Rock	*10,699*
	Imported Water Nebraska Below Guide Rock	*(14)*
	Total	***21,456***
SW Pumping Data		
North Fork Subbasin	SW Diversions - Irrigation -Non-Federal Canals- Colorado	195
	SW Diversions - Irrigation - Small Pumps - Colorado	22
	SW Diversions - M&I - Colorado	0
Arikaree Subbasin	SW Diversions - Irrigation -Non-Federal Canals- Colorado	0
	SW Diversions - Irrigation - Small Pumps - Colorado	0
	SW Diversions - M&I - Colorado	0
	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	0
	SW Diversions - M&I - Kansas	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	0
	SW Diversions - Irrigation - Small Pumps - Nebraska	0
	SW Diversions - M&I - Nebraska	0
Buffalo Subbasin	SW Diversions - Irrigation -Non-Federal Canals- Colorado	0
	SW Diversions - Irrigation - Small Pumps - Colorado	0
	SW Diversions - M&I - Colorado	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	98

Calendar Year		2021
	SW Diversions - Irrigation - Small Pumps - Nebraska	6
	SW Diversions - M&I - Nebraska	0
Rock Subbasin	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	0
	SW Diversions - Irrigation - Small Pumps - Nebraska	0
	SW Diversions - M&I - Nebraska	0
South Fork Subbasin	SW Diversions - Irrigation -Non-Federal Canals- Colorado	0
	SW Diversions - Irrigation - Small Pumps - Colorado	0
	SW Diversions - M&I - Colorado	0
	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	0
	SW Diversions - M&I - Kansas	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	0
	SW Diversions - Irrigation - Small Pumps - Nebraska	0
	SW Diversions - M&I - Nebraska	0
Frenchman Subbasin	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	0
	SW Diversions - Irrigation - Small Pumps - Nebraska	0
	SW Diversions - M&I - Nebraska	0
Driftwood Subbasin	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	0
	SW Diversions - M&I - Kansas	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	0
	SW Diversions - Irrigation - Small Pumps - Nebraska	0
	SW Diversions - M&I - Nebraska	0
Red Willow Subbasin	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	0
	SW Diversions - Irrigation - Small Pumps - Nebraska	79
	SW Diversions - M&I - Nebraska	0
Medicine Creek Subbasin	SW Diversions - Irrigation - Non-Federal Canals - Nebraska - Above Gage	0
	SW Diversions - Irrigation - Small Pumps - Nebraska - Above Gage	62
	SW Diversions - M&I - Nebraska - Above Gage	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska -Below Gage	0
	SW Diversions - Irrigation - Small Pumps -Nebraska - Below Gage	61
	SW Diversions - M&I - Nebraska - Below Gage	0
Beaver Subbasin	SW Diversions - Irrigation -Non-Federal Canals- Colorado	0
	SW Diversions - Irrigation - Small Pumps - Colorado	0
	SW Diversions - M&I - Colorado	0
	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	14
	SW Diversions - M&I - Kansas	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska - Above Gage	0
	SW Diversions - Irrigation - Small Pumps - Nebraska - Above Gage	0
	SW Diversions - M&I - Nebraska - Above Gage	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska -Below Gage	0
	SW Diversions - Irrigation - Small Pumps -Nebraska - Below Gage	0
	SW Diversions - M&I - Nebraska - Below Gage	0
Sappa Subbasin	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	0
	SW Diversions - M&I - Kansas	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska - Above Gage	0
	SW Diversions - Irrigation - Small Pumps - Nebraska - Above Gage	0
	SW Diversions - M&I - Nebraska - Above Gage	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska -Below Gage	0
	SW Diversions - Irrigation - Small Pumps -Nebraska - Below Gage	0
	SW Diversions - M&I - Nebraska - Below Gage	0
Prairie Dog Subbasin	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	519
	SW Diversions - M&I - Kansas	376
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska -Below Gage	0
	SW Diversions - Irrigation - Small Pumps -Nebraska - Below Gage	92
	SW Diversions - M&I - Nebraska - Below Gage	0
Mainstem Subbasin	SW Diversions - Irrigation - Non-Federal Canals- Kansas	0
	SW Diversions - Irrigation - Small Pumps - Kansas	889
	SW Diversions - M&I - Kansas	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska	1,830
	SW Diversions - Irrigation - Small Pumps - Nebraska	1,461
	SW Diversions - M&I - Nebraska	0
	SW Diversions - Irrigation - Non-Federal Canals - Nebraska Below Guide Rock	0
	SW Diversions - Irrigation - Small Pumps - Nebraska Below Guide Rock	665
	SW Diversions - M&I - Nebraska - Below Guide Rock	0
Non-Federal SW Consumptive Use		
	% Non-Federal Canal Diversion Consumed	60%
	% Small Surface Water Pumps Consumed	75%
	% Municipal And Industrial SW Consumed	50%

Calendar Year		**2021**
Non-Federal Reservoir Evaporation Data		
North Fork Subbasin	Non-Federal Reservoir Evaporation - Colorado	39
Arikaree Subbasin	Non-Federal Reservoir Evaporation - Colorado	0
	Non-Federal Reservoir Evaporation - Kansas	16
	Non-Federal Reservoir Evaporation - Nebraska	0
Buffalo Subbasin	Non-Federal Reservoir Evaporation - Colorado	0
	Non-Federal Reservoir Evaporation - Nebraska	11
Rock Subbasin	Non-Federal Reservoir Evaporation - Nebraska	127
South Fork Subbasin	Non-Federal Reservoir Evaporation - Colorado	0
	Non-Federal Reservoir Evaporation - Kansas	137
	Non-Federal Reservoir Evaporation - Nebraska	0
Frenchman Subbasin	Non-Federal Reservoir Evaporation - Nebraska	106
Driftwood Subbasin	Non-Federal Reservoir Evaporation - Kansas	16
	Non-Federal Reservoir Evaporation - Nebraska	0
Red Willow Subbasin	Non-Federal Reservoir Evaporation - Nebraska	222
Medicine Creek Subbasin	Non-Federal Reservoir Evaporation - Nebraska - Above Gage	251
	Non-Federal Reservoir Evaporation - Nebraska - Below Gage	3
Beaver Subbasin	Non-Federal Reservoir Evaporation - Colorado	0
	Non-Federal Reservoir Evaporation - Kansas	373
	Non-Federal Reservoir Evaporation - Nebraska - Above Gage	126
	Non-Federal Reservoir Evaporation - Nebraska - Below Gage	0
Sappa Subbasin	Non-Federal Reservoir Evaporation - Kansas	401
	Non-Federal Reservoir Evaporation - Nebraska - Above Gage	46
	Non-Federal Reservoir Evaporation - Nebraska - Below Gage	2
Prairie Dog Subbasin	Non-Federal Reservoir Evaporation - Kansas	270
	Non-Federal Reservoir Evaporation - Nebraska	12
Mainstem Subbasin	Non-Federal Reservoir Evaporation - Kansas	78
	Non-Federal Reservoir Evaporation - Nebraska - Above Guide Rock Gage - Whole Basin Value:	983
	Non-Federal Reservoir Evaporation - Nebraska - Below Guide Rock Gage - Whole Basin Value:	51
Stream Gage Data		
North Fork Subbasin	North Fork Republican River At Colorado-Nebraska State Line	25,846
Arikaree Subbasin	Arikaree River At Haigler	1,635
Buffalo Subbasin	Buffalo Creek Near Haigler	1,583
Rock Subbasin	Rock Creek At Parks	3,583
South Fork Subbasin	South Fork Republican River Near Benkelman	321
Frenchman Subbasin	Frenchman Creek At Culbertson	16,678
Driftwood Subbasin	Driftwood Creek Near McCook	1,999
Red Willow Subbasin	Red Willow Creek Near Red Willow	4,012
Medicine Creek Subbasin	Medicine Creek Below Harry Strunk	22,871
Beaver Subbasin	Beaver Creek Near Beaver City	796
Sappa Subbasin	Sappa Creek Near Stamford	14,925
Prairie Dog Subbasin	Prairie Dog Creek Near Woodruff	6,646
Mainstem Subbasin	Republican River At Guide Rock	115,649
	Republican River Near Hardy	142,152
Hardy Gage Data	USGS Gage 06853500 Republican River Near Hardy, NE	
Mainstem Subbasin	January	7,475
	February	7,332
	March	28,746
	April	20,400
	May	25,198
	June	14,672
	July	8,141
	August	8,550
	September	3,034
	October	2,535
	November	7,470
	December	8,600
	ANNUAL	142,153

Calendar Year		**2021**
Reservoir Data		
South Fork Subbasin	Bonny Reservoir Evaporation	0
	Bonny Reservoir Change In Storage	0
Frenchman Subbasin	Enders Reservoir Evaporation	1,616
	Enders Reservoir Change In Storage	(655)
Red Willow Subbasin	Hugh Butler Lake Evaporation	2,608
	Hugh Butler Lake Change In Storage	(2,618)
Medicine Creek Subbasin	Harry Strunk Lake Evaporation	2,452
	Harry Strunk Lake Change In Storage	2,950
Prairie Dog Subbasin	Keith Sebelius Lake Evaporation	3,342
	Keith Sebelius Lake Change In Storage	(3,444)
Mainstem Subbasin	Swanson Lake Evaporation	8,671
	Swanson Lake Change In Storage	(9,291)
	Harlan County Evaporation Subject to Nebraska/Kansas Split	11,476
	Harlan County Evaporation Charged to Kansas	0
	Harlan County Change In Storage	754
	Lovewell Reservoir Ev charged to the Republican River	1,290
Canal Data		
North Fork Subbasin	Haigler Canal Diversions - Colorado	0
	Haigler Canal Diversions - Nebraska	5,640
	Haigler Canal Diversions	***5,640***
South Fork Subbasin	Hale Ditch Diversions	0
Frenchman Subbasin	~~Champion Canal Diversions~~	~~0~~
	Riverside Canal Diversions	0
	Culbertson Canal Diversions	5,988
	Culbertson Canal Extension Diversions	0
	Culbertson Canal % Return Flow	82%
	Culbertson Canal Extension % Return Flow	100%
Driftwood Subbasin	Meeker-Driftwood Canal Diversions	18,654
	Meeker-Driftwood Canal % Return Flow	59.9%
Red Willow Subbasin	Red Willow Canal Diversions	5,161
	Red Willow Canal % Return Flow	63%
Prairie Dog Subbasin	Almena Canal Diversions	2,593
	Almena Canal % Return Flow	58.0%
Mainstem Subbasin	Bartley Canal Diversion	8,468
	Bartley Canal % Return Flow	67%
	Cambridge Canal Diversion	25,971
	Cambridge Canal % Return Flow	59.2%
	Naponee Canal Diversion	1,381
	Naponee Canal % Return Flow	73%
	Franklin Canal Diversion	20,907
	Franklin Canal % Return Flow	73%
	Franklin Pump Canal Diversions	904
	Franklin Pump Canal % Return Flow	67%
	Superior Canal Diversions	9,551
	Superior Canal % Return Flow	68%
	Courtland Canal Diversions At Headgate	*73,224*
	Diversions to Nebraska Courtland	980
	Nebraska Courtland % Return Flow	27%
	Courtland Canal, Loss in NE assigned to upper Courtland KS	3,712
	Courtland Canal, Loss in NE assigned to delivery to Lovewell	7,815
	Courtland Canal At Kansas-Nebraska State Line	*60,776*
	Courtland Canal Diversions to the Upper Courtland District	24,977
	Courtland Canal Above Lovewell % Return Flow	*58.6%*
	Courtland Canal, Loss assigned to deliveries of water to Lovewell, Stateline to Lovewell	*8,795*
	Courtland Canal Deliveries To Lovewell Reservoir	*30,657*
	Diversions of Republican River water from Lovewell Reservoir to the Courtland Canal below Lovewell	24,651
	Courtland Canal Below Lovewell % Return Flow	*42.4%*
	To allocate Harlan County evaporation:	
	Kansas Bostwick Diversions During Irrigation Season (actual, or 3-year average)	52,212
	Nebraska Bostwick Diversions During Irrigation Season (actual or 3-year average)	30,809

Accounting Tables

Table 1: Annual Virgin and Computed Water Supply, Allocations, and Computed Beneficial Consumptive Uses by State, Main Stem, and Sub-Basin

2021	Virgin Water	Computed	Allocations				Computed Beneficial Consumptive Use		
Basin	Supply	Water Supply	Colorado	Kansas	Nebraska	Unallocated	Colorado	Kansas	Nebraska
North Fork	41,490	41,490	9,290	0	10,210	21,990	18,120	0	4,660
Arikaree	3,320	3,320	2,610	170	560	(20)	1,440	130	110
Buffalo	5,660	5,660	0	0	1,870	3,790	440	0	3,640
Rock	8,900	8,900	0	0	3,560	5,340	80	0	5,240
South Fork	20,160	20,160	8,950	8,100	280	2,830	13,760	5,310	770
Frenchman	99,790	100,450	0	0	53,840	46,610	200	0	82,730
Driftwood	170	170	0	10	30	130	0	20	830
Red Willow	17,930	20,550	0	0	3,950	16,600	0	0	9,590
Medicine	38,440	35,490	0	0	3,230	32,260	0	0	20,910
Beaver	9,700	9,700	1,940	3,760	3,940	60	0	5,550	3,350
Sappa	17,350	17,350	0	7,130	7,130	3,090	0	1,640	1,610
Prairie Dog	11,200	14,640	0	6,690	1,110	6,840	0	8,000	80
Main Stem	197,990	204,980	0	104,740	100,240	0	(3,840)	36,480	119,130
Total All Basins	472,100	482,860	22,790	130,600	189,950	139,520	30,200	57,130	252,650
Main Stem Including Unallocated		344,500	0	176,030	168,470				
Total	472,100	482,860	22,790	201,890	258,180	0	30,200	57,130	252,650

Table 2: Original Compact Virgin Water Supply and Allocations

Basin	Virgin Water Supply	Colorado Allocation	% of Basin Supply	Kansas Allocation	% of Basin Supply	Nebraska Allocation	% of Basin Supply	Unallocated	% of Basin Supply
North Fork	44,700	10,000	22.4%			11,000	24.6%	23,700	53.0%
Arikaree	19,610	15,400	78.5%	1,000	5.1%	3,300	16.8%	(90)	-0.4%
Buffalo	7,890					2,600	33.0%	5,290	67.0%
Rock	11,000					4,400	40.0%	6,600	60.0%
South Fork	57,200	25,400	44.4%	23,000	40.2%	800	1.4%	8,000	14.0%
Frenchman	98,500					52,800	53.6%	45,700	46.4%
Driftwood	7,300			500	6.9%	1,200	16.4%	5,600	76.7%
Red Willow	21,900					4,200	19.2%	17,700	80.8%
Medicine	50,800					4,600	9.1%	46,200	90.9%
Beaver	16,500	3,300	20.0%	6,400	38.8%	6,700	40.6%	100	0.6%
Sappa	21,400			8,800	41.1%	8,800	41.1%	3,800	17.8%
Prairie Dog	27,600			12,600	45.7%	2,100	7.6%	12,900	46.7%
Tributaries Sub-Total	384,000							175,500	
Main Stem	94,500								
Main Stem + Unallocated	270,000			138,000	51.1%	132,000	48.9%		
Total	478,900	54,100		190,300		234,500			

Table 3A: Table to Be Used to Calculate Colorado's Five-Year Running Average Allocation and Computed Beneficial

	Col. 1	Col. 2	Col. 3	Col. 4
Year	Allocation	Computed Beneficial Consumptive	Imported Water Supply Credit and CORWS	Difference between Allocation and the Computed Beneficial Consumptive Use offset by Imported Water Supply Credit and CORWS Credit Col 1 – (Col 2- Col 3)
2017	22,960	31,810	11,330	2,480
2018	25,630	35,130	13,578	4,078
2019	22,710	32,740	8,905	(1,125)
2020	24,200	26,910	6,218	3,508
2021	22,790	30,200	9,390	1,980
Avg 2017-2021	23,660	31,360	9,880	2,180

Table 3B: Table to Be Used to Calculate Kansas's Five-Year Running Average Allocation and Computed Beneficial

	Col. 1	Col. 2	Col. 3	Col. 4
Year	Allocation	Computed Beneficial Consumptive	Imported Water Supply Credit	Difference between Allocation and the Computed Beneficial Consumptive Use offset by Imported Water Supply Credit Col 1 – (Col 2- Col 3)
2017	177,230	62,040	NA	115,190
2018	179,780	51,450	NA	128,330
2019	333,300	47,910	NA	285,390
2020	247,750	53,810	NA	193,940
2021	201,890	57,130	NA	144,760
Avg 2017-2021	227,990	54,470	NA	173,520

Table 3C: Table to Be Used to Calculate Nebraska's Five-Year Running Average Allocation and Computed Beneficial

	Col. 1	Col. 2	Col. 3	Col. 4
Year	Allocation	Computed Beneficial Consumptive	Imported Water Supply Credit and NERWS	Difference between Allocation and the Computed Beneficial Consumptive Use offset by Imported Water Supply Credit and NERWS Credit Col 1 – (Col 2- Col 3)
2017	238,540	242,140	39,439	35,839
2018	241,680	266,080	25,943	1,543
2019	389,300	262,870	26,541	152,971
2020	303,070	252,400	18,995	69,665
2021	258,180	252,650	21,456	26,986
Avg 2017-2021	286,150	255,230	26,470	57,400

Table 4A: Colorado Compliance with the Sub-basin Non-impairment Requirement

Table 4A is left unpopulated pursuant to the August 24, 2016 "RESOLUTION BY THE REPUBLICAN RIVER COMPACT ADMINISTRATION APPROVING OPERATION AND ACCOUNTING FOR THE COLORADO COMPACT COMPLIANCE PIPELINE AND COLORADO'S COMPLIANCE EFFORTS IN THE SOUTH FORK REPUBLICAN RIVER BASIN", paragraph E.

2021

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6
Sub-basin	Colorado Sub-basin Allocation (Five-year Running Average)	Unallocated Supply (Five-year Running Average)	Credits from Imported Water Supply and CORWS Credit (Five-year Running Average)	Total Available Supply (Five-year Running Average)	Colorado Computed Beneficial Consumptive Use (Five-year Running Average)	Difference Between Available Supply and Computed Beneficial Consumptive Use (Five-year Running Average)
North Fork						
Arikaree						
South Fork						
Beaver						

Table 4B: Kansas's Sub-Basin Non-impairment Compliance

2021

	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
Sub-basin	Kansas Sub-basin Allocation (Five-year Running Average)	Unallocated Supply (Five-year Running Average)	Unused Allocation from Colorado (Five Year Running Average)	Credits from Imported Water Supply (Five-year Running Average)	Total Available Supply Col 1 + Col 2 + Col 3 + Col 4 (Five-year Running Average)	Kansas Computed Beneficial Consumptive Use (Five-year Running Average)	Difference Between Available Supply and Computed Beneficial Consumptive Use Col 5 - Col 6 (Five-year Running Average)
Arikaree	172	(12)	678	N/A	838	142	696
South Fork	8,752	3,050	0	N/A	11,802	4,780	7,022
Driftwood	72	810	0	N/A	882	14	868
Beaver	4,492	66	2,316	N/A	6,874	6,422	452
Sappa	7,874	3,404	0	N/A	11,278	2,556	8,722
Prairie Dog	8,388	8,570	0	N/A	16,958	10,948	6,010

Table 5A: Colorado's Compliance During Water-Short Year Administration

	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7
Year	Is the year Water Short Pursuant to III.J?* (Yes or No)	Statewide Allocation	Beaver Creek Reduction Pursuant to Table 5F	Allocation - Beaver Creek Reduction (Col. 2 - Col.3)	Computed Beneficial Consumptive (excluding the Beaver Creek Sub-basin)	Imported Water Supply Credit - IWS Beaver Creek + CORWS Credit	Difference between Allocation and the Compuated Beneficial Consumptive Use offset by Imported Water Supply Credit and CORWS Credit (Col. 4 - Col. 5 + Col. 6)
2017	Yes	22,960	0	22,960	31,810	11,330	2,480
2018	No	25,630	1,852	23,778	35,130	13,578	2,226
2019	Yes	22,710	0	22,710	32,740	8,905	(1,125)
2020	No	24,200	0	24,200	26,910	6,218	3,508
2021	No	22,790	0	22,790	30,200	9,390	1,980
Avg 2017-2021	Yes	23,660	370	23,290	31,360	9,880	1,810

Table 5F: Colorado's Beaver Creek Reduction During Water-Short Years

Water Short Year (WSY) Pursuant to III.J	Beaver Creek Allocation	Reduction = Average of last five WSY Beaver Creek Allocations
	Col. 1	Col. 2
2002	770	N/A
2003	260	N/A
2004	360	N/A
2005	910	N/A
2006	1,420	N/A
2007	2,320	744
2013	1,130	1,054
2014	1,250	1,228
2015	2,130	1,406
2016	2,430	1,650
2018	2,250	1,852

Table 5B: Kansas's Compliance During Water-Short Year Administration
Kansas

Year	Allocation				Computed Beneficial Consumptive Use	Imported Water Supply Credit	Difference Between Allocation and the Computed Beneficial Consumpitve Use offset by Imported Water Supply Credit
Column	1	2	3	4	5	6	7
	Sum Sub-basins	Kansas' Share of Unallocated Supply	Kansas' Share of the Unused Colorado Allocation	Total Col 1 + Col 2 + Col 3			Col 4 - (Col 5 - Col 6)
2020	30,570	8,212	1,702	40,483	23,700	N/A	16,783
2021	25,860	6,607	1,589	34,056	20,650	N/A	13,406
Avg 2020-2021	28,215	7,410	1,645	37,270	22,175	N/A	15,095

Table 5E: Nebraska's Tributary Compliance During Water-Short Year Administration

	Allocation			Computed Beneficial Consumptive Use	Imported Water Supply Credit and AWS	Allocation - (CBCU - IWS-AWS)
Year	Sub-Basin Total	Share of Unallocated Supply	Total			
2019	107,230	86,685	193,915	137,820	11,441	67,536
2020	95,240	78,440	173,680	132,980	10,716	51,416
2021	89,710	68,225	157,935	133,520	10,822	35,237
Avg 2020-2021	92,475	73,333	165,808	133,250	10,769	43,327

Table 5C: Nebraska's Compliance During Water-Short Year Administration

Year	Allocation				Computed Beneficial Consumptive Use			Imported Water Supply Credit and NERWS Credit	Difference Between Allocation and Computed Beneficial Consumptive Use offset by Imported Water Supply Credit Above Guide Rock and NERWS Credit
Column	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9
	State-Wide Allocation	Allocation Below Guide Rock	Allocation Above Guide Rock	Nebraska's Share of Unused Colorado Allocation	State-Wide CBCU	CBCU Below Guide Rock	CBCU Above Guide Rock	Credits Above Guide Rock	Col 3 + Col 4 - (Col 7 - Col 8)
2020	303,070	17,777	285,293	1,628	252,400	2,266	250,134	18,995	55,783
2021	258,180	6,503	251,677	1,521	252,650	3,084	249,566	21,485	25,116
Avg 2020-2021	280,630	12,140	268,480	1,570	252,530	2,680	249,850	20,240	40,450

Table 5D: Nebraska's Compliance Under a Alternative Water-Short Year Administration Plan

Year	Allocation				Computed Beneficial Consumptive Use			Imported Water	Difference Between Allocation
Column	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9
	State-Wide Allocation	Allocation Below Guide Rock	Allocation Above Guide Rock	Share of Unused Colorado Allocation	State-Wide CBCU	CBCU Below Guide Rock	CBCU Above Guide Rock	Credits Above Guide Rock	Col 3 + Col 4 - (Col 7 - Col 8)
2019	389,300	56,294	333,006	1,511	262,870	1,780	261,090	26,541	99,968
2020	303,070	17,777	285,293	1,628	252,400	2,266	250,134	18,995	55,783
2021	258,180	6,503	251,677	1,521	252,650	3,084	249,566	21,485	25,116
Avg 2019-2021	316,850	26,860	289,990	1,550	255,970	2,380	253,600	22,340	60,290

Attachments

Attachment 1: Sub-basin Flood Flow Thresholds

Sub-basin	Sub-basin Flood Flow Threshold Acre-feet per Year[3]
Arikaree River	16,400
North Fork of Republican River	33,900
Buffalo Creek	9,800
Rock Creek	9,800
South Fork of Republican River	30,400
Frenchman Creek	51,900
Driftwood Creek	9,400
Red Willow Creek	15,100
Medicine Creek	55,100
Beaver Creek	13,900
Sappa Creek	26,900
Prairie Dog	15,700

[3] Flows considered to be Flood Flows are flows in excess of the 94% flow based on a flood frequency analysis for the years 1971-2000. The Gaged Flows are measured after depletions by Beneficial Consumptive Use and change in reservoir storage.

Attachment 6: Computing Water Supplies and Consumptive Use Above Guide Rock

Note: At its Annual Meeting on August 21, 2020, the RRCA agreed that the Accounting Procedures (Rev. May 25, 2017) do not properly implement the Flood Flows provisions at the Hardy gage with respect to the calculation of Computed Water Supply above and below Guide Rock. The current implementation could impact Nebraska's Table 5C compliance test, specifically the Allocation above Guide Rock. Nebraska and Kansas each offered proposals to resolve the issue but could not reach agreement on a solution. Due to the infrequent occurrence of Flood Flows, the RRCA deferred resolution of the matter to a future date necessitated by an preceding impact to Nebraska's Table 5C compliance. The states wish to acknowledge and memorialize the issue to encourage work towards its resolution. As it stands, Attachment 6 calculates Virgin Water Supply Guide Rock to Hardy rather than Computed Water Supply Guide Rock to Hardy which would reduce Virgin Water Supply by the relevant Flood Flows as described in Section II. Definitions and Section III. Basic Formulas.

Year	Total Mainstem CWS	Hardy Gage	Superior Courtland Diversion Dam	Courtland Canal Diversions	Superior Canal Diversion	Courtland Canal Returns	Superior Canal Returns	Total Bostwick Returns Below Guide Rock	NE CBCU Below Guide Rock	KS CBCU Below Ruide Rock	Total CBCU Below Guide Rock	Gain Guide Rock to Hardy	VWS Guide Rock to Hardy	Mainstem VWS Above Guide Rock	NE MS Allocation Above Guide Rock	KS MS Allocation Above Guide Rock	Nebraska Guide Rock to Hardy Allocation	Kansas Guide Rock to Hardy Allocation
2021	204,980	142,152	115,649	44,380	9,551	10,536	6,475	17,011	3,084	723	3,807	9,492	13,299	191,681	93,732	97,949	6,503	6,796

COURTLAND CANAL					
	2017	2018	2019	2020	2021
Return Flow From Courtland Canal To Republican River Above Lovewell From Kansas	789	608	761	536	912
Return Flow From Courtland Canal To Republican River Above Hardy From Nebraska	7,785	4,706	3,519	6,791	9,625
Courtland Canal Diversions At Headgate	62,438	46,704	55,120	44,380	73,224
Courtland Canal At Kansas-Nebraska State Line	52,599	40,559	50,721	35,756	60,776
NE Courtland Canal CBCU (includes transportation loss)	345	405	108	342	711
Superior Canal CBCU	2,616	2,744	1,433	2,046	3,076

NEBRASKA					
	2017	2018	2019	2020	2021
SW Diversions - Irrigation - Small Pumps - Nebraska Below Guide Rock	1,261	1,177	84	552	665
SW Diversions - M&I - Nebraska - Below Guide Rock	0	0	0	0	0
SW Non-Federal Reservoir Evaporation - Below Guide Rock	93	(9)	(6)	84	51
SW Return - Irrigation	315	294	21	138	166
SW Return - M&I	0	0	0	0	0
GW CBCU Nebraska Below Guide Rock	2,546	2,440	1,723	1,769	2,534

KANSAS					
	2017	2018	2019	2020	2021
SW CBCU - Irrigation - Small Pumps	727	518	148	565	667
SW CBCU - M&I	0	0	0	0	0
GW CBCU Kansas Below Guide Rock	53	47	49	51	56

2021

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9	Col 10	Col 11	Col 12
Canal	Canal Diversion	Spill to Waste-Way	Net Diversion	Field Deliveries	Canal Loss	Average Field Loss Factor	Field Loss	Total Loss from District	Percent Field and Canal Loss That Returns to the Stream	Total return to Stream from Canal and Field Loss	Return as Percent of Canal Diversion
Name Canal	Headgate Diversion	Sum of measured spills to river	Col 2 - Col 3	Sum of Deliveries to the field	Col 4 - Col 5	1 -Weighted Average Efficiency of Application System for the District*	Col 5 x Col 7	Col 6 + Col 8	Estimated Percent Loss*	Col 9 x Col 10 + Col 3	Col 11/Col 2
Σ Irrigation Season											
Σ Non- Irrigation Season											
Culbertson	5,111	44	5,067	176	4,891	30%	53	4,944	82%	4,098	80%
	877	0	877	0	877	30%	0	877	92%	807	92.0%
Culbertson Extension	0	0	0	0	0	30%	0	0	82%	0	100%
	0	0	0	0	0	30%	0	0	92%	0	100.0%
Meeker - Driftwood	18,654	1,823	16,831	7,769	9,062	30%	2,331	11,393	82%	11,165	59.9%
	0	0	0	0	0	30%	0	0	92%	0	100.0%
Red Willow	5,161	145	5,016	1,741	3,275	30%	522	3,797	82%	3,259	63.1%
	0	0	0	0	0	30%	0	0	92%	0	100.0%
Bartley	7,703	949	6,754	2,716	4,038	30%	815	4,853	82%	4,928	64.0%
	765	12	753	0	753	30%	0	753	92%	705	92.1%
Cambridge	25,971	1,193	24,778	10,707	14,071	30%	3,212	17,283	82%	15,365	59.2%
	0	0	0	0	0	30%	0	0	92%	0	100.0%
Naponee	1,381	247	1,134	322	812	35%	113	925	82%	1,005	72.8%
	0	0	0	0	0	35%	0	0	92%	0	100.0%
Franklin	20,907	3,189	17,718	4,492	13,226	35%	1,572	14,798	82%	15,324	73.3%
	0	0	0	0	0	35%	0	0	92%	0	100.0%
Franklin Pump	904	117	787	300	487	35%	105	592	82%	602	66.6%
	0	0	0	0	0	35%	0	0	92%	0	100.0%
Almena	2,593	0	2,593	1,085	1,508	30%	326	1,834	82%	1,503	58.0%
Superior	9,551	2,097	7,454	3,066	4,388	31%	950	5,338	82%	6,475	67.8%
	0	0	0	0	0	31%	0	0	92%	0	100.0%
Nebraska Courtland	980	0	980	846	134	23%	195	329	82%	269	27.5%
Courtland Canal Above Lovewell (KS)	24,977	2,286	22,691	9,903	12,788	23%	2,278	15,066	82%	14,640	58.6%
Courtland Canal Below Lovewell	38,977	3,703	35,274	25,502	9,772	23%	5,865	15,637	82%	16,526	42.4%

* The average field efficiencies for each district and percent loss that returns to the stream may be reviewed and, if necessary, changed by the RRCA to improve the accuracy of the estimates.

Attachment 8: Calculations of the Computed Water Supply Adjustment and Remaining Compact compliance Volume for Implementation of 2016 RRCA Resolution

CCV and RCCV Tracking[a]													APV and RWS						RCCV Calc
	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10	Col. 11	Col. 12	Colorado		Nebraska				
Year	Start of Year RCCV	RCCV Adjustment	CCV	CCV Inflow Into HCL	RCCV Inflow Into HCL	Total CCV and RCCV Inflow Into HCL	Total CCV and RCCV Available for Release	CCV Released from HCL as Flow	CCV Released from HCL as Evaporation	CCV Retained in HCL (at End of Year)	CWSA	End of Year RCCV	Aug. Pumping Volume (APV)	Resolution Water Supply Credit (CORWS)	Aug. Pumping Volume (APV) Rock Creek That Passed Sub-basin Gage in the Current Year	Aug. Pumping Volume (APV) N-CORPE That Passed Sub-basin Gage in the Current Year	Resolution Water Supply Credit (NERWS)	Extra CCV Efforts Above CCV (Use with RCCV Calc)
	=Col 12 of previous year	b	c			= Col. 4 + Col. 5	=Col. 6 + Col. 10 of previous year			= Col. 7 – (Col. 8 + Col. 9)	=Col. 10 – Col. 10 of previous year	= Col. 1 – Col. 2 + Col. 3 - Col. 6[d]						
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15,766	0	15,766	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	7,448	7,448	19,397	42,758	62,155	0
2015	0	0	0	8332	0	8332	8332	0	0	8332	8332	0	10,760	10,760	1,098	25,932	18,698	8332
2016	0	0	41,935	24752	0	24752	33084	5084	4321	23679	15347	9,300	10,130	10,130	499	22,803	41,935	449
2017	9300	0	20,000	20,000	0	20000	43679	20000	2241	21438	-2241	9,300	11,330	11,330	4,563	11,106	20,000	0
2018	9300	0	0	0	0	0	21438	0	1339	20099	-1339	9,300	13,578	13,578	0	0	0	0
2019	9300	0	0	0	0	0	20099	0	2340	17759	-2340	9,300	8,905	8,905	0	0	0	0
2020	9300	1860	0	0	0	0	17759	0	3889	13870	-3889	7,440	6,218	6,218	0	0	0	0
2021	7,440	1860	0	0	0	0	13870	0	1550	12320	-1550	5,580	9,390	9,390	0	0	0	0

a. Calculations for RCCV, CWSA, & RWS don't start until Oct. 1, 2015

b. See Provision 10 of the RRCA Resolution signed August 24, 2016, titled “Resolution Approving Long-Term Agreement Related to the Operation of Harlan County Lake for Compact Call Years” for the terms of assigning RCCV Adjustment. The RCCV Adjustment for each year is equal to 20% of the unadjusted portion of the RCCV, if it is a non-Compact Call Year, plus any remaining volumetric reductions from the previous four years.

c. In years when the contributions from Nebraska’s water management activities, consistent with the 2016 CCY HCL Operations Resolution, are greater than CCV and the NERWS is equal to the greater contribution volume, CCV in Column 3 should also be set equal to the contribution.

d. The formula for calculation of RCCV is based on calendar year operations and will vary when operations occur in a different calendar year than NERWS Credit is applied.

Flood Flow Calculations Based on Accounting Procedures III.B.1 and Attachment 1.

Hardy Gage Monthly Data (acre-feet)					
	2017	2018	2019	2020	2021
January	11,315	4,619	13,289	55,339	7,475
February	6,369	5,521	6,875	33,332	7,332
March	6,420	7,386	61,131	33,775	28,746
April	6,933	3,658	21,669	23,421	20,400
May	33,286	2,309	66,000	31,732	25,198
June	11,956	7,601	69,761	10,810	14,672
July	24,712	3,805	118,015	30,811	8,141
August	5,874	5,065	82,834	8,337	8,550
September	3,532	23,848	30,188	3,488	3,034
October	8,752	17,603	21,527	4,298	2,535
November	2,399	9,231	59,330	7,632	7,470
December	5,575	20,216	75,757	8,265	8,600
ANNUAL	127,122	110,862	626,376	251,239	142,153
Over 400K	0	0	226,376	0	0

Sub-basin Flows Above Attachment 1 Flood Flow Thresholds					
	2017	2018	2019	2020	2021
North Fork	0	0	0	0	0
Arikaree	0	0	0	0	0
Buffalo	0	0	0	0	0
Rock	0	0	0	0	0
South Fork	0	0	0	0	0
Frenchman	0	0	0	0	0
Driftwood	0	0	0	0	0
Red Willow	0	0	0	0	0
Medicine Creek	0	0	0	0	0
Beaver	0	0	0	0	0
Sappa	0	0	15,988	0	0
Prairie Dog	0	0	25,260	0	0
Sub-basin Sum	0	0	41,248	0	0

5-month Consecutive Period Flows (acre-feet)					
	2017	2018	2019	2020	2021
Jan-May	64,322	23,494	168,964	177,598	89,151
Feb-Jun	64,964	26,475	225,436	133,069	96,348
Mar-Jul	83,307	24,760	336,576	130,548	97,157
Apr-Aug	82,760	22,438	358,279	105,110	76,961
May-Sep	79,359	42,628	366,798	85,177	59,595
Jun-Oct	54,825	57,922	322,325	57,743	36,932
Jul-Nov	45,268	59,552	311,894	54,566	29,730
Aug-Dec	26,132	75,962	269,636	32,020	30,189

5-month Consecutive Period Test					
	2017	2018	2019	2020	2021
Jan-May	0	0	0	0	0
Feb-Jun	0	0	0	0	0
Mar-Jul	0	0	1	0	0
Apr-Aug	0	0	1	0	0
May-Sep	0	0	1	0	0
Jun-Oct	0	0	0	0	0
Jul-Nov	0	0	0	0	0
Aug-Dec	0	0	0	0	0
TOTAL	0	0	3	0	0

2-month Consecutive Period Flows (acre-feet)					
	2017	2018	2019	2020	2021
Jan-Feb	17,683	10,140	20,164	88,671	14,807
Feb-Mar	12,789	12,907	68,006	67,107	36,078
Mar-Apr	13,353	11,045	82,800	57,195	49,146
Apr-May	40,219	5,967	87,669	55,152	45,598
May-Jun	45,242	9,910	135,761	42,541	39,870
Jun-Jul	36,668	11,406	187,776	41,621	22,813
Jul-Aug	30,586	8,870	200,849	39,148	16,691
Aug-Sep	9,406	28,912	113,022	11,825	11,584
Sep-Oct	12,283	41,451	51,715	7,786	5,569
Oct-Nov	11,151	26,834	80,857	11,930	10,005
Nov-Dec	7,974	29,447	135,087	15,898	16,070

2-month Consecutive Period Test					
	2017	2018	2019	2020	2021
Jan-Feb	0	0	0	0	0
Feb-Mar	0	0	0	0	0
Mar-Apr	0	0	0	0	0
Apr-May	0	0	0	0	0
May-Jun	0	0	0	0	0
Jun-Jul	0	0	0	0	0
Jul-Aug	0	0	1	0	0
Aug-Sep	0	0	0	0	0
Sep-Oct	0	0	0	0	0
Oct-Nov	0	0	0	0	0
Nov-Dec	0	0	0	0	0
TOTAL	0	0	1	0	0

Final Sub-basin Flood Flows					
	2017	2018	2019	2020	2021
North Fork Flood Flow	0	0	0	0	0
Arikaree Flood Flow	0	0	0	0	0
Buffalo Flood Flow	0	0	0	0	0
Rock Flood Flow	0	0	0	0	0
Southfork Flood Flow	0	0	0	0	0
Frenchman Flood Flow	0	0	0	0	0
Driftwood Flood Flow	0	0	0	0	0
Red Willow Flood Flow	0	0	0	0	0
Medicine Creek Flood Flow	0	0	0	0	0
Beaver Flood Flow	0	0	0	0	0
Sappa Flood Flow	0	0	15988	0	0
Prairie Dog Flood Flow	0	0	25260	0	0
Mainstem Flood Flow	0	0	185128	0	0

Combined Test					
	2017	2018	2019	2020	2021
FINAL TOTAL	0	0	4	0	0

The 2022 annual report of the Republican River Compact Administration is hereby approved by unanimous vote on this 31st day of August 2023.

Kevin Rein, Chair and Colorado Commissioner — DATE SIGNED: 8-31-2023

Earl Lewis, Kansas Commissioner — DATE SIGNED: 8/31/2023

Thomas Riley, Nebraska Commissioner — DATE SIGNED: 5 SEP 2023