

**Republican River Basin-Wide Plan
Stakeholder Advisory Meeting Minutes
June 20, 2017 | Community Center; Cambridge, Nebraska**

Stakeholder Advisory Committee members in attendance were:

Jared Baker	Max Kaiser	Shad Stamm
Brad Edgerton	Curtis Kayton	Craig Scott
Troy Fletcher	Jim Kent	Aaron Thompson
Jerda Garey Vickers	Bradly Knuth	Ted Tietjen
Dale Helms	Jerry Kuenning	Marcia Trompke
Dick Helms	Kent Lorens	Tom Vickers
Robin Hinrichs	Gale Lush	Todd Watson
Bill Hoyt	Cedric McDaniel	

Plan Development Team members in attendance were:

Patti Banks	Jeff Fassett	Jennifer Schellpeper
Emily Bausch	Carol Flaute	John Thorburn
Kari Burgert	Tatiana Height	Carrie Wiese
Mike Clements	Nate Jenkins	Ray Winz
Scott Dicke	Sylvia Johnson	
Beth Eckles	Jack Russell	

Individuals from the community present during the meeting included:

Phyllis Johnson
Chelsea Erickson
Jean Eichorst
Mark R. Christenson

Note: See Attachment A for a copy of the sign-in sheets.

NOTICE OF THE MEETING

Notice of the meeting was published on the Department of Natural Resources web site (dnr.nebraska.gov). Notices were also published in the Holdrege Daily Citizen, McCook Gazette, Imperial Republican, and the Benkelman Post & News Chronicle.

INFORMATIONAL MATERIALS

The following informational materials were distributed to stakeholders:

- Meeting agenda (Attachment B)
- Revised Groundwater Pumping handout (Attachment C)
- Understanding Water Supply and Use handout (Attachment D)
- Draft Regulatory and Legal Chronology handout (Attachment E)
- Water User Maps handout (Attachment F)
- Draft Balancing Water Supply and Use handout (Attachment G)
- Draft Goals 1-4 handout (Attachment H)
- Compiled Written Stakeholder Comments on Remaining Draft Plan Language Received Following the November 2016 Stakeholder Meeting handout (Attachment I)
- Allocations History handout (Attachment J)
- Republican River Compact Administration (RRCA) Accounting Data handout (Attachment K)
- Republican River Basin-Wide Plan April and May Coordination Meeting Notes (Attachment L)
- Draft March 2017 Meeting Minutes
- Republican River Basin-Wide Planning Meeting Schedule (Attachment M)

1. WELCOME

- Jennifer Schellpeper, NeDNR, welcomed everyone and reviewed the agenda and stated that this meeting is subject to the Nebraska Open Meetings Act.
- It was announced that the November meeting minutes are final and have been posted to Republican River Basin Wide Plan's website.
- The group was then asked to review the March meeting minutes and to provide comments within 15 days. If no comments are submitted then the minutes will be considered final.
- The group was asked to read the April and May Coordination Meeting notes
- Carol Flaute made an announcement that photos will be taken during the meeting for outreach purposes, so that we can have photos to represent this stakeholder process. If anyone objected to having pictures of them used by NeDNR and the NRDs for this purpose, they were instructed to talk to Carol at lunch time. No one present objected.

NeDNR Director Jeff Fassett addressed the stakeholder group.

- Fassett reviewed the accomplishments made at the RRCA May 25, 2017, Special Meeting, in which the Accounting Procedures were adopted. This means the accounting procedures adopted are retroactive to 2005, and all data from 2005 to 2015 are now official. He described how collaboration with other states has led to this finalization and agreement.
- The Director summarized current status of litigation proceedings within the Basin.
- Fassett described the current and upcoming NeDNR budget cuts, and how it may affect project funding sources.
- A stakeholder asked to see how the accounting changes affect Nebraska's portion.

- Another stakeholder asked about the status of 2017 being a water short year, and another asked about Colorado's shortfalls.

Director Fassett replied that we are working on a way to communicate better the various triggers.

The stakeholder's attention was directed toward an accounting data handout.

2. PLAN LANGUAGE

- Jennifer opened the discussion beginning with a handout of draft Plan language for goal 5. Draft Plan language for goal 5 was also distributed at the March 2017 Stakeholder meeting but was not discussed.
- Stakeholders offered suggested revisions.
 - Some of the suggested revisions included:
 - The Plan shouldn't duplicate what Twin Valley Weed Management is doing, but endorse instead, and cooperate with current actions.
 - Include the Republican River Basin rather than just the Republican River Valley.
 - Change the word "control" to "managing" re-infestations.
 - Add examples, for clarification, to Action Item 5.1.1.

A vote was taken and Goal 5, Objectives 5.1, 5.2 and 5.3, and Action Items 5.1.1., 5.1.2 and 5.3.1. were approved as follows:

Goal 5: "When possible, pursue projects that not only benefit water supplies and uses, but also create benefits for fish, wildlife, and recreation within the Republican River Basin."

Stakeholder Proposed Action Item 5.1.1.

Where feasible and beneficial, partner with various groups such as (Game and Parks, Ducks Unlimited, Crane Trust, etc.) to share costs to establish new or utilize existing infrastructure and pay costs for, for example imported water from interbasin transfers during periods of high flows to benefit the group's habitat and wildlife interests, while also providing aquifer recharge."

Stakeholder Proposed Action Item 5.3.1.

Cooperate in removing undesirable vegetation and managing reinfestation. The strategy is in place.

- No revisions were made to objectives 5.1, 5.2, or 5.3 and action item 5.1.2.

NeDNR and NRDs will take the Goal 5 language revise it, add additional details, and bring back for consideration.

3. DISCUSSION LEADING TO ADDITIONAL GOALS

I. UNDERSTANDING WATER SUPPLY AND USE

- Jennifer Schellpeper introduced the draft Understanding Water Supply and Use handout. The main task given to the stakeholders was to consider the question “How might the Plan contribute to the understanding of water supply and use?”
- Data would be shared on either a statutorily required 5-year basis, or the preferred annual basis.
- Much of the data provided to the RRCA is not currently being made public.
- Specific Stakeholder input regarding Understanding Water Supply and Use are included as an attachment (Attachment N).

The stakeholders were informed that NeDNR and NRDs will come back with plan language based on this input. Any additional comments may be submitted within 15 days, for consideration.

II. REGULATORY AND LEGAL CHRONOLOGY

- Jennifer Schellpeper introduced the draft Regulatory and Legal Chronology handout (Attachment E). The group was asked whether including the Regulatory and Legal Chronology in the Plan would help them and the public to understand how we got to where we are today and to provide feedback on other regulatory or legal items that they think should be included in the chronology.
- Specific Stakeholder input regarding the Regulatory and Legal Chronology are included as an attachment (Attachment O).

III. COMPACT COMPLIANCE DISTRIBUTION

- Jennifer Schellpeper introduced the topic and described the handouts related to Compact compliance distribution. Stakeholders discussed the percentages of acres irrigated by surface water irrigators in relation to acres irrigated with groundwater, and acres comingled.
- The group was asked to provide input on the question, “How might the Plan address the issue of Compact compliance distribution?” and “What kind of solutions might the plan contain to address this problem?”
- Specific stakeholder responses to the above questions are included as an attachment (Attachment P).

- Jennifer suggested the group continue this conversation along with beginning a discussion of the sustainability question for the next meeting in August 2017.

Homework assignments to be completed within 15 days (Wednesday, July 5):

- Review the draft minutes of the March stakeholder advisory committee meeting.
- Provide written comments on draft Plan language for goals 1-4.
- Submit additional suggestions for topics discussed today: 1) Understanding water supply and use, and 2) Legal and regulatory chronology.

4. PARKING LOT

When members of the group brought up topics that should be addressed, but best discussed at another time, they were written down, and added to the "Parking Lot" for future discussion. As of the end of the meeting, items in the Parking Lot discussed are crossed off and the remaining topics are:

- Delineation of the basin-wide plan's geographic area
- Definition of sustainability
- Dr. Goeke speaking to the group
- ~~Reliable Supply~~
- Stakeholder role after plan adopted ~~and reporting~~
- ~~Information sharing with public and on website~~
- Board member training on healthy streams

The parking lot will be reviewed at the close of every Stakeholder Advisory Committee meeting. Items which have been addressed and resolved will be removed from the parking lot and new items may also be added to the parking lot. At the June 2017 meeting, no new items were added to the parking lot.

5. PUBLIC COMMENTS

There were no public comments.

6. STAKEHOLDER COMMENTS

Q. Does the Plan have authority over an IMP? A. -Statute states that the IMPs need to be consistent with the Basin-Wide Plan.

Statement- It seems like most of the IMPs are about compact compliance and some of them consider aquifer sustainability, but the basin-wide plan is more about sustainability of the aquifer than compact compliance. Response- the IMPs are supposed to reduce groundwater pumping impacts on surface water. Groundwater Management Plans are supposed to address groundwater sustainability. They are a separate plan. IMPs are a joint plan between NeDNR and NRDs but Groundwater Management Plans are developed by NRDs and reviewed by NeDNR.

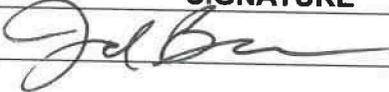
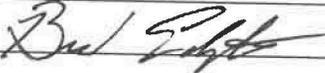
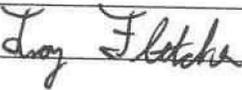
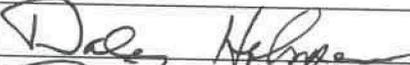
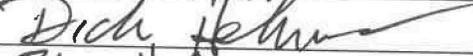
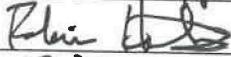
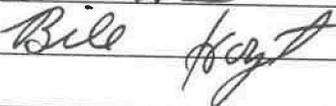
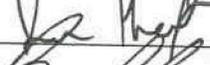
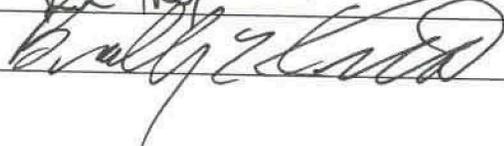
7. NEXT MEETING

On behalf of the entire basin-wide plan development team, including the four NRDs and NeDNR, Schellpeper thanked the stakeholders for attending and participating in this process. The next meeting will be held at the Cambridge Community Center from 10:00 am to 3:00 pm C.D.T. on August 15th, 2017.

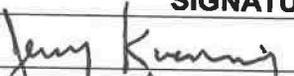
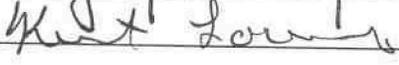
Project Website = <http://rrbwp.nebraska.gov/>
(Please note that this web address has recently changed)

Attachment A – Sign in Sheet

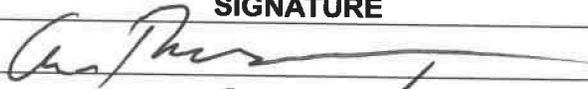
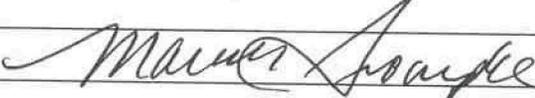
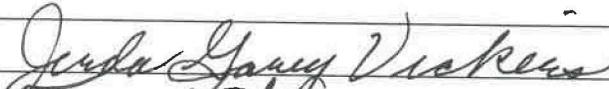
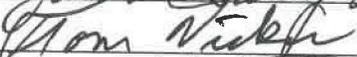
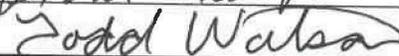
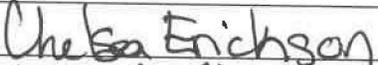
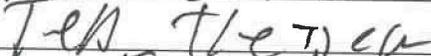
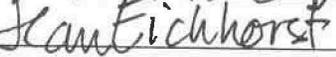
STAKEHOLDER ATTENDANCE RECORD
Republican River Basin-Wide Plan
June 20, 10:00 AM
Community Center -Cambridge, NE

NAME	SIGNATURE	EMAIL	PHONE NO.
Jared Baker			
Kurt Bernhardt			
Mike Delka			
Brad Edgerton			
Jerry Ehrke			
Chris Flaming			
Troy Fletcher			
Josh Friesen			
Mike George			
Wayne Haarberg			
Dale Helms			
Dick Helms			
Robin Hinrichs			
Bill Hoyt			
Michael J. Kahrs			
Max Kaiser			
Curtis Kayton			
Jim Kent			
Bradly Knuth			

STAKEHOLDER ATTENDANCE RECORD
Republican River Basin-Wide Plan
June 20, 10:00 AM
Community Center -Cambridge, NE

NAME	SIGNATURE	EMAIL	PHONE NO.
Jerry Kuenning			
Kent Lorens			
Jeff Loschen			
Gale Lush			
Scott Lutz			
Timothy McCoy			
Cedric McDaniel			
Dan Nelsen			
Dave Oxford			
Roric Paulman			
John Rundel			
Nate Schneider			
George Schortberger			
Richard Siel			
Kevin Slocum			
Steve Smith			
Daniel Smith			
Shad Stamm			
Glenn Taubenheim			

STAKEHOLDER ATTENDANCE RECORD
Republican River Basin-Wide Plan
June 20, 10:00 AM
Community Center -Cambridge, NE

NAME	SIGNATURE	EMAIL	PHONE NO.
Aaron Thompson			
Ted Tietjen			
Marcia Trompke			
Dack Vesta			
Jerda Garey Vickers			
Tom Vickers			
Todd Watson			
	PUBLIC		
			
			
			
			

STAKEHOLDER ATTENDANCE RECORD
Republican River Basin-Wide Plan
June 20, 10:00 AM
Community Center -Cambridge, NE

NAME	SIGNATURE	AGENCY	EMAIL	PHONE NO.
John Thorburn	<i>John Thorburn</i>	Tri-Basin NRD		
Ray Winz	<i>Ray Winz</i>	Tri-Basin NRD		
Mike Clements	<i>Mike Clements</i>	Lower Rep NRD		
Scott Dicke	<i>Scott Dicke</i>	Lower Rep NRD		
Sylvia Johnson	<i>Sylvia Johnson</i>	Middle Rep NRD		
Jack Russell	<i>Jack Russell</i>	Middle Rep NRD		
Nate Jenkins	<i>Nate Jenkins</i>	Upper Rep NRD		
Jasper Fanning	<i>Jasper Fanning</i>	Upper Rep NRD		
Carol Flaute	<i>Carol Flaute</i>	NDNR		
Jennifer Schellpeper	<i>Jennifer Schellpeper</i>	NDNR		
Amy Zoller	<i>Amy Zoller</i>	NDNR		
Jeff Fassett		NDNR		
Tatiana Height		NDNR		
Beth Eckles	<i>Beth Eckles</i>	NDNR		
Phyllis Johnson	<i>Phyllis Johnson</i>	TRI-BASIN		
Kari Burger	<i>Kari Burger</i>	DNK		
Craig Soff	<i>Craig Soff</i>	USBR		
Emily Bausch	<i>Emily Bausch</i>	Olsson		

Attachment B – Meeting agenda

Republican River Basin-wide Plan Stakeholder Advisory Committee Meeting Agenda

*Tuesday, June 20, 2017, 10:00 AM – 3:00 PM
Cambridge Community Center, 722 Patterson Avenue, Cambridge, Nebraska*

Meeting Objectives

At this meeting, participants will build upon progress made at the March stakeholder meeting continuing with consideration of plan goals. First we will finish reviewing plan language for goals previously identified and then begin discussion toward new goals in four general topic areas: Inequitable distribution of compact compliance burden; Limited understanding of water supply and use; over-consumption of water; the consistency of regulatory measures over time by water use.

1. Welcome

2. Plan Language

Working Lunch – 12:00 to 12:30

(Lunch is provided for Stakeholder Advisory Committee, NDNR, NRD, and Consultant Staff only)

3. Discussion Leading to Additional Goals

4. Parking Lot

5. Public comment

6. Next meeting

- a. August 15, 2017

Project Website = <https://rrbwp.nebraska.gov/>

Attachment C – Revised Groundwater Pumping handout

Revised Groundwater Pumping

REVISED Nebraska Groundwater Pumping within RRCA Model Area*, 1995-2014												
Irrigated Land (Acres**), Groundwater Delivered Volume (Acre-Feet), and Groundwater Delivered Depth (Inches**)												
Year	Lower Republican NRD			Middle Republican NRD			Upper Republican NRD			Tri-Basin NRD		
	Acres	Volume (af)	Depth (inches)	Acres	Volume (af)	Depth (inches)	Acres	Volume (af)	Depth (inches)	Acres	Volume (af)	Depth (inches)
1995	203,983	249,632	14.7	202,362	284,374	16.9	374,614	442,066	14.2	430,103	474,599	13.2
1996	211,297	127,784	7.3	221,062	179,279	9.7	384,799	331,079	10.3	445,551	275,655	7.4
1997	232,677	241,194	12.4	225,927	292,620	15.5	377,170	492,253	15.7	448,273	442,583	11.8
1998	230,269	197,910	10.3	228,717	301,786	15.8	371,596	506,262	16.4	443,469	336,762	9.1
1999	227,927	156,928	8.3	225,629	140,107	7.5	369,037	382,926	12.5	452,326	286,746	7.6
2000	242,107	267,215	13.2	234,864	384,438	19.6	384,013	666,396	20.9	468,982	512,756	13.1
2001	244,238	240,413	11.8	252,340	311,892	14.8	443,499	488,370	13.3	504,160	400,006	9.5
2002	248,125	361,733	17.5	250,497	429,938	20.6	444,395	672,760	18.2	508,899	550,312	13
2003	271,259	297,876	13.2	249,254	354,363	17.1	451,349	564,144	15.1	512,339	508,536	11.9
2004	292,301	274,909	11.3	259,286	317,224	14.7	442,214	468,733	12.8	526,729	462,052	10.5
2005	280,511	243,378	10.4	240,972	248,037	12.4	474,419	429,518	10.9	531,545	419,990	9.5
2006	300,824	197,653	7.9	279,264	254,585	10.9	459,350	430,868	11.3	544,454	400,325	8.8
2007	294,939	161,183	6.6	272,855	196,337	8.6	427,766	395,361	11.1	533,468	318,210	7.2
2008	287,889	135,072	5.6	270,925	208,659	9.2	428,996	429,780	12	526,358	334,891	7.6
2009	284,869	153,072	6.4	269,470	197,534	8.8	438,380	336,108	9.2	527,574	302,008	6.9
2010	285,970	113,663	4.8	270,325	194,637	8.6	427,460	381,870	10.7	528,959	252,421	5.7
2011	292,499	138,879	5.7	273,114	209,182	9.2	428,468	357,341	10	531,016	285,098	6.4
2012	291,780	290,556	11.9	276,443	411,131	17.8	426,358	673,917	19	532,142	526,664	11.9
2013	284,252	215,111	9.1	278,358	251,294	10.8	426,346	494,808	13.9	542,563	563,112	12.5
2014	294,939	139,226	5.7	218,451	215,952	11.9	381,653	391,657	12.3	533,468	283,976	6.4

*There is some additional groundwater pumping within the Nebraska portion of the model area that takes place outside these four NRDs.

** **The groundwater pumping data handout distributed on November 1 was incorrect because it excluded commingled acres.** A green background in the table above denotes values that have been corrected since the version of this table that was distributed at November 1, 2016, stakeholder meeting.

- The values for irrigated acres are higher in this version. The difference is because this revised version includes both groundwater exclusive and commingled acres, whereas the commingled acres were inadvertently excluded from the November 1 version.
- As a result of the increase in irrigated acres, the values for depth of irrigation are lower in this revised version than in the November 1 version.

Acres and pumping data were obtained from NASS and power record estimates until 2006, when NRD certified acres and measured pumping volumes were substituted for these estimates for all wells within the basin (this change was made in the URNRD in 2000).

Groundwater Pumping

RRCA GW Acre and Pumping Calculation Source List

Pre-2001: NASS acreage for each county was distributed using the DNR registered wells. Power records were used to calculate pumping.

2001-2005: Upper Republican NRD certified acres and well meters were used for acre and pumping calculation for that NRD. All other NRDS and “other” areas continued to use the pre-2001 methodology.

2006-2013: Upper, Middle, Lower, and Tri-basin NRDs now used the certified acres and well meter volumes for calculations within those areas. “Other” areas outside of those NRDs continue to use the old methodology. Power records were used to estimate pumping volumes for all areas outside of the in-basin portions of the four NRDs.

Note: 2007 NASS acreage was used for all years (2007-2013) for the “other” areas

Note: No documentation yet on whether or not certified acres were adjusted similar to post-2014

2014-present: Upper, Middle, Lower, and Tri-basin methodology largely stays the same. The acreage in the landuse spatial dataset is now adjusted to match the tabular certified acres. “Other” areas are now calculated using the COHYST derived land use acres.

Groundwater acres are used in the model only for the purpose of estimating recharge.

Attachment D – Understanding Water Supply and Use handout

DRAFT Understanding Water Supply and Use

Information Shared During Stakeholder Meetings

1. June 2015 Stakeholder Advisory Committee meeting
 - a. Jim S. Presentation- *Basin Water Supply*. Hydrologic Overview of the Republican Basin in Nebraska (Precipitation, ET, transmissivity, well density, stream gages, drought conditions, and well depletion zones). Trends in streamflow and baseflow. Causes of reduced streamflow supply and impacts over time.
2. August 2015 Stakeholder Advisory Committee meeting
 - a. Jim S. Presentation- *Interbasin transfers, basin water supply, and hydrologic concepts*. Effects of NE GW pumping on streamflow. Groundwater management plans. Effects of groundwater pumping on aquifer and streamflow.
 - b. Analysis of High Plains Resource Risk and Economic Impacts
3. January 2016 Stakeholder Advisory Committee meeting
 - a. A. Thompson BOR presentation- *Reclamation: Managing Water in the West*. Reclamation water rights, reclamation water contracts, and current reservoir storage.
 - b. Jesse B. NeDNR presentation- *Water Science: Stream and Aquifer Depletion*. Well location and stream depletion. Review of well depletion zones. Wells in the Republican Basin through time. Stream deletion. Aquifer depletion.
4. November 2016 Stakeholder Advisory Committee meeting
 - a. Groundwater (GW) and surface water (SW) use
 - i. Nebraska GW Pumping within RRCA Model Area
 - ii. Nebraska Farm Field Delivery Data- SW
 - iii. Annual Precipitation within Nebraska Portion of RRCA Model Area
 - b. Average precipitation recharge values for 1990-2015
 - c. INSIGHT data
 - i. Annual Precipitation
 - ii. Annual Streamflow
 - iii. Annual Basin Water Supply
 - iv. Annual Near Term Demands
 - v. Annual Near Term Balance
 - d. Nebraska's Compact Allocations
 - e. Republican River Compact Accounting Brochure
 - f. Existing Republican River Basin Water Management Actions
 - g. Distribution of Irrigated Lands and Hydrologically Connected Areas (map)
 - h. LRNRD Township Average Changes and Draft Static Water Level Measurement Changes 2005-2015

DRAFT Understanding Water Supply and Use

5. Water Supply and Use Information Packet (Available on Republican River Basin-Wide planning website)
 - a. Weather Stations and Precipitation Table
 - b. Allocations History
 - c. Modeled Depletions
 - d. Nebraska-Kansas Stateline Annual Streamflow Data
 - e. Surface Water Use
 - f. Updated Groundwater Pumping and Acres
 - g. Accounting
 - h. Groundwater Level Changes by NRD

https://rrbwp.nebraska.gov/project_meetingschedule.html

RRCA Annual Reporting Information

1. Surface Water Data
 - a. Non-federal Surface Water Irrigators
 - I. Water right number
 - II. Type of use
 - III. Location
 - IV. Diversion amount
 - V. Acres irrigated
 - b. United States Bureau of Reclamation Data
 - I. Water right number
 - II. Type of use
 - III. Location
 - IV. Diversion amount
 - V. Acres irrigated
 - VI. Evaporation
 - VII. Storage
 - VIII. Precipitation
 - IX. Releases
 - X. Area capacity tables
2. Water Administration
 - a. Dates and type of administration
 - b. Date of notification to Nebraska water right owners to curtail diversions
 - c. Amount of curtailment
 - d. Length of time for curtailment
 - e. Number of notices sent
 - f. Number of diversions curtailed

DRAFT Understanding Water Supply and Use

- c. Relative humidity or dew point
- d. Solar radiation
- 10. Crop Irrigation Requirements (CIR)
 - a. Percent CIR met by pumping
 - b. Percentage sprinkler vs. Flood
 - c. Crop distribution
 - d. Crop coefficient
 - e. Gain in soil moisture from winter and spring precipitation
 - f. Net CIR

DRAFT

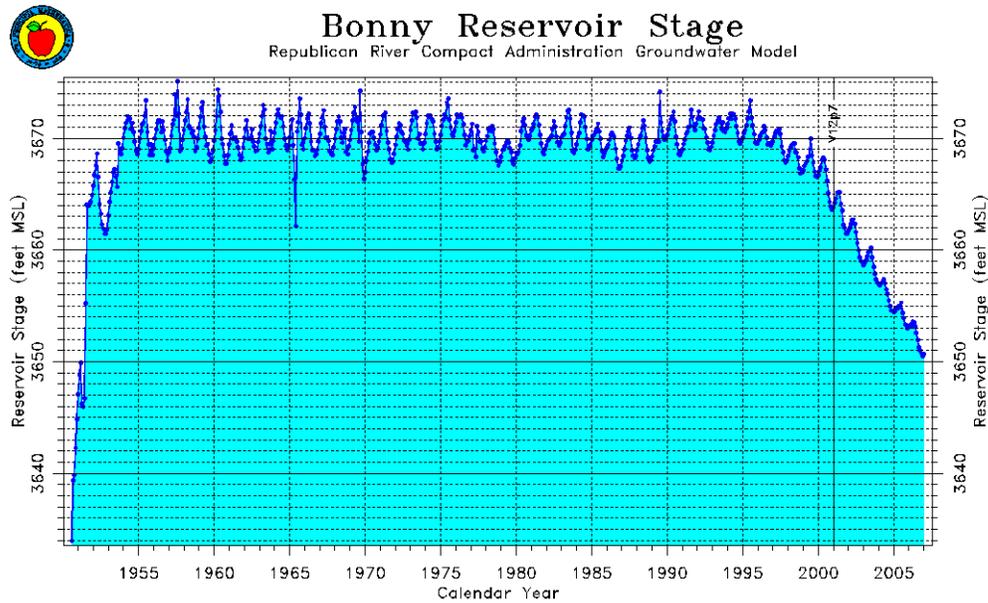
DRAFT Understanding Water Supply and Use

Accounting data for compact years 2003-2007 can be found by visiting the Republican River Compact Administration Website and clicking on the year of your choice.

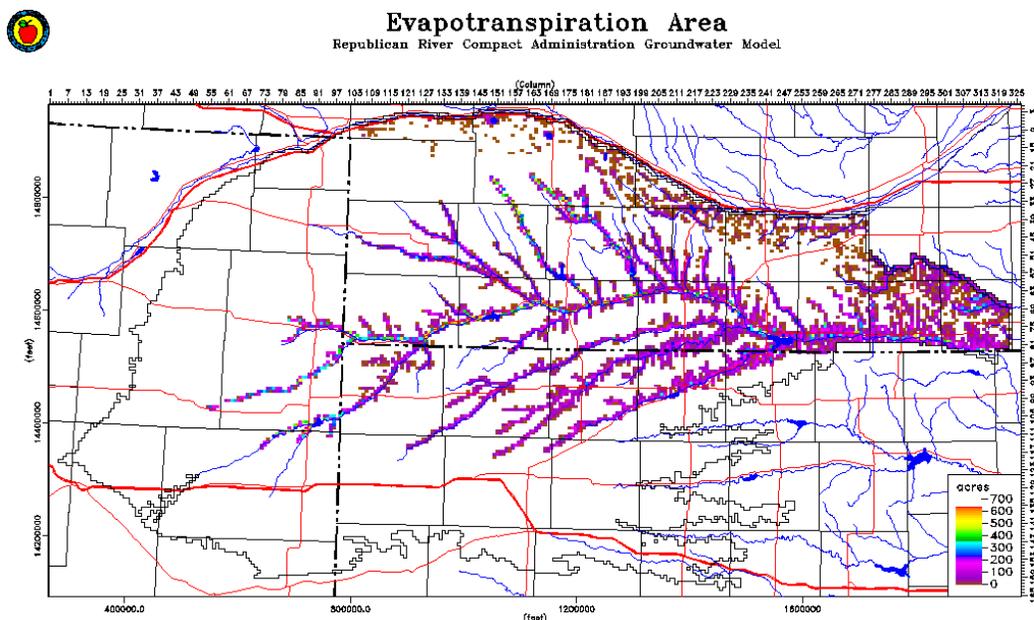
<http://www.republicanrivercompact.org/>

Some of the available data includes:

1. Reservoir stage data as depicted in the example below.



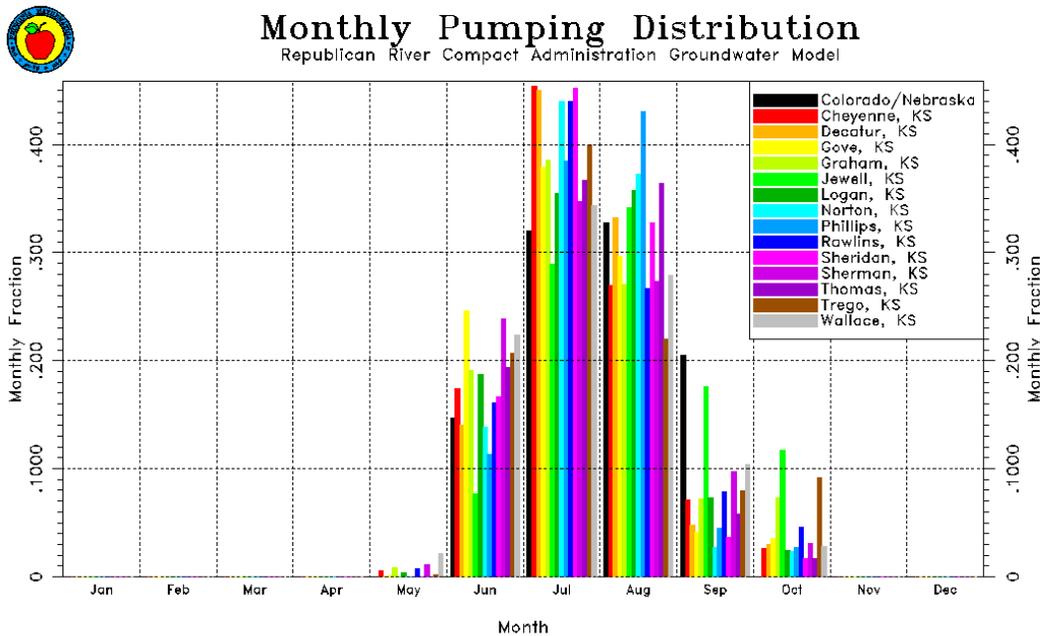
2. Evapotranspiration (ET) data including monthly maximum ET rate and ET area as



DRAFT Understanding Water Supply and Use

depicted in the example below.

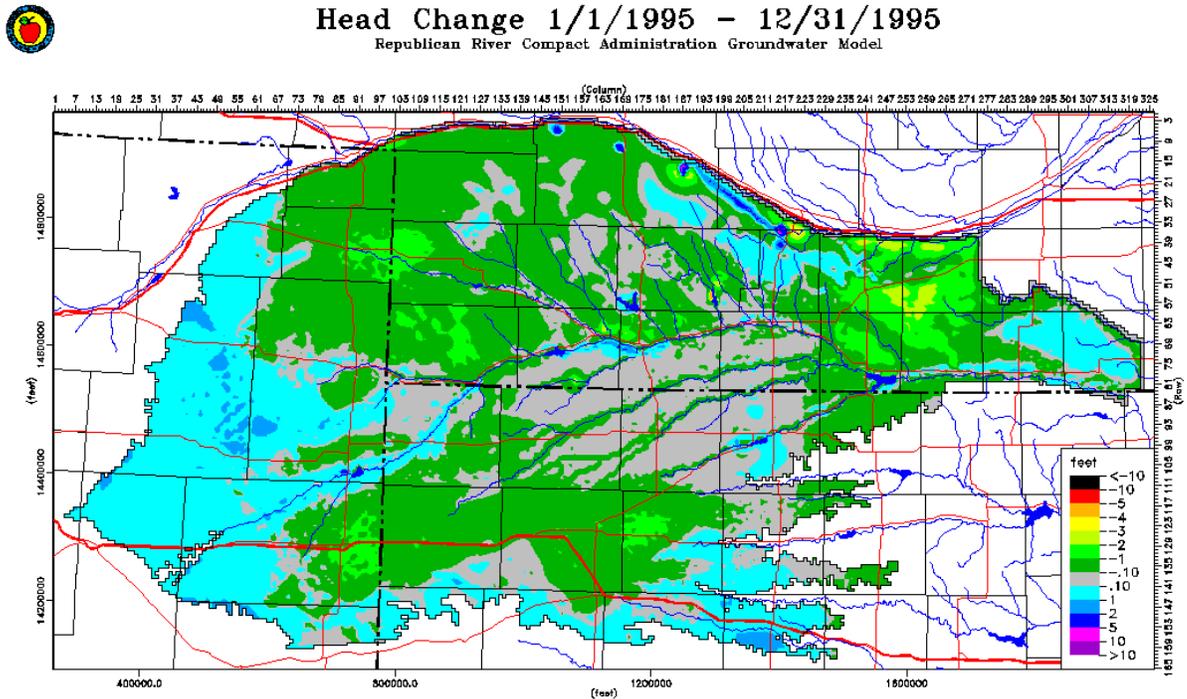
- Well pumping data including monthly pumping distribution, annual well pumping, and monthly well pumping as depicted in the example below.



- Recharge data made up of precipitation recharge, groundwater return flows, surface water return flows, and canal leakage.
- County summaries of irrigated acres, recharge, and pumping.

DRAFT Understanding Water Supply and Use

6. Head change data for multiple years as depicted in the example below.



7. Predicted impacts for multiple years as depicted in the example below.

Impacts 2004 (acre-feet)				
Location	Colorado Pumping	Kansas Pumping	Nebraska Pumping	Nebraska Mound
Arikaree	353	116	431	0
Beaver	0	205	1278	0
Buffalo	290	0	3333	0
Driftwood	0	0	1479	0
Frenchman	39	0	85199	0
North Fork	14373	16	1446	0
Above Swanson	-1287	201	13809	0
Swanson - Harlan	0	91	33956	622
Harlan - Guide Rock	0	0	29155	198
Guide Rock - Hardy	0	71	2382	0
Medicine	0	0	20898	9522
Prairie Dog	0	1328	0	0

DRAFT Understanding Water Supply and Use

Additional Stakeholder Comments and Data Ideas

1. Ideas related to metrics and data for tracking purposes
 - a. General
 - i. How do you determine if a management action is “successful”? What might work as a universal metric for this?
 - ii. Create a centralized location for data
 - b. Specific Measurement Suggestions
 - i. Amount of depletions
 - ii. Groundwater elevation changes
 - iii. Spring water level changes by county
 - iv. Augmentation pumping volumes and costs
2. Understanding the effects of land use and farming practices
 - a. What are the effects of changes in land use (e.g., farming practices conservation practices) and land cover (all types) on water consumption, streamflow, and stream depletions?
 - b. Develop a water budget: define and understand the effects of all uses.
 - c. What is already working in the Basin? Develop a process for water users to submit their own management successes, and distribute that information to other water users in the Basin.
 - d. What are the effects of conservation practices on runoff reduction?
3. Understanding evaporation and evapotranspiration (ET)
 - a. How much of Nebraska’s consumptive use is attributable to evaporation?
 - b. Are there opportunities to reduce evaporation?
 - c. How much of Nebraska’s consumptive use is attributable to ET of riparian vegetation?
 - d. Are there opportunities to reduce riparian ET?
4. Understanding supply and use at the subbasin level
 - a. Where are water tables rising? Where are they going down?
 - i. Based on this, where are current allocations too restrictive? Where are they not restrictive enough?
 - b. Which parts of the Basin are dependent upon water from the mound?
 - c. What is unique about supply and use in each subbasin?
 - d. Include an assessment of the streamflow of the tributaries to the Republican River to determine the flow trends.
 - e. What is the near-term balance for each subbasin?
5. Understanding the effects of upstream neighbors on Nebraska’s supply
 - a. What are Colorado’s depletions and usage, and how does this affect Nebraska’s water supply on the west end of the Basin?

DRAFT Understanding Water Supply and Use

- b. How can we better understand the hydrology of flows from Colorado in the South Fork?
- c. Are there opportunities for collaboration with Colorado or Kansas at the subbasin level to address issues?
- d. How does upstream water use (both by other states and within Nebraska) affect water availability?

DRAFT

Attachment E – Draft Regulatory and Legal Chronology handout

DRAFT Regulatory and Legal Chronology

Surface Water- Surface water controls have existed, in Nebraska, since the late 1800's. Surface water controls began with the construction and operation of irrigation canals and the granting of water rights based on the doctrine of prior appropriation. In the 1900's a process was created to cancel unused surface water appropriations and water was deemed to be a public resource. Now, in the 21st century, hydrologically connected surface water and groundwater are considered as a single resource, and integrated water management is undertaken to plan for the use of hydrologically connected water supplies.

Groundwater – The possibility of groundwater regulation by individual court cases began in Nebraska in 1933 with the adoption by the Nebraska Supreme Court of the correlative use doctrine. Additionally, in the 1900's, well registration became required, natural resources districts (NRDs) were given the authority to regulate groundwater, and the Ground Water Management Act was passed. By the 21st century, the use of hydrologically connected groundwater supplies was planned for in collaboration with surface water in basins, subbasins, or reaches deemed to be fully or overappropriated by the State.

The Republican River Basin - The Republican River Compact (Compact) is an inter-state agreement between Nebraska, Kansas, Colorado, and the United States. The Compact allocates water among the three states and is administered by the Republican River Compact Administration (RRCA), which is made up of one member from each of the three states. In August 2016, during the 56th annual RRCA meeting, three resolutions were approved, two of which impacted Nebraska. The two resolutions are comprised of long-term agreements to provide flexibility and greater certainty to all water users in the region, while remaining consistent with the terms of the Republican River Compact and the Final Settlement Stipulation of 2002.

Era of Independent Management of Groundwater and Surface Water

1877- The first law relative to irrigation was passed by the legislature allowing the construction and operation of canals for irrigation and other purposes.

1889- The Saint Raynor law was passed allowing for the appropriation of running waters for useful or beneficial purposes.

1895- Surface water rights were granted according to the doctrine of prior appropriation (first in time, first in right).

1919- A process for cancelling unused surface water appropriations was prescribed by statute.

The State Board of Irrigation became a part of the Department of Public Works.

1920- The use of water of every natural stream within the state of Nebraska was dedicated to the people of the state for beneficial purposes, subject to provisions in the State Constitution.

1933- The correlative use (shared use) doctrine was adopted for groundwater, as established through a Nebraska Supreme Court ruling.

The State Board of Irrigation was changed to the Bureau of Irrigation, Water Power, and Drainage and became a part of the Department of Roads and Irrigation.

1943- Nebraska entered into the Republican River Compact with Kansas and Colorado.

1957- The Department of Water Resources was created and took the place of the Bureau of Irrigation, Water Power, and Drainage.

Irrigation and other large capacity wells were required to be registered for the first time.

1963- Laws were passed that allowed municipalities to apply for a permit from the Department of Water Resources to transfer groundwater off the overlying land.

1967- The Legislature directed the State Soil and Water Conservation Commission to prepare a State Water Plan.

1968 to 1971- The first portions of the State Water Plan were published.

1969- The Legislature created NRDs as multipurpose, locally elected management bodies.

1972- The NRDs began operations.

1975- The first Ground Water Management Act was passed into law.

The Legislature directed the primary responsibility for regulating groundwater to the NRDs.

The Legislature prohibited state agencies from taking actions that jeopardize endangered species or their critical habitats.

1978- At the request of the Legislature, the Natural Resources Commission and other state agencies issued a policy statement and work plan that recommended replacing the State Water Plan with a State Water Planning and Review Process.

Era of Water Planning and Policy Development

1981- The Legislature authorized a State Water Planning and Review Process.

The Industrial Ground Water Regulatory Act was established which required a permit from the Department of Water Resources for anyone wanting to withdraw three thousand or more acre-feet of groundwater per year for industrial purposes.

1982- The Ground Water Management Act was revised to incorporate groundwater quality concerns and the title was changed to the Ground Water Management and Protection Act.

1983- A new law allowed for transfer in location of use for surface water appropriations within the same basin.

A law was also passed allowing for appropriations for incidental and intentional underground water storage.

Permitting of new wells within a control area was changed to the authority of the NRDs.

1984- A bill was passed that allowed for surface water appropriations for instream flows to protect recreation, fish and wildlife. Such applications could only be filed by the Nebraska Game and Parks Commission or an NRD.

Local groundwater management plans were required to be prepared by each NRD and submitted to the Department of Water Resources for review.

1985- The Legislature further refined requirements of NRDs for local groundwater management plans.

1991- The Legislature required the NRDs to expand their management plans to include protection of groundwater quality.

1993- The Legislature required that all wells (including domestic and stock water wells) be registered with the Nebraska Department of Water Resources, as opposed to only large capacity wells.

A law was passed that allowed public water suppliers to obtain surface water appropriations for induced groundwater recharge for public water supply wells located near streams.

A law was passed that allowed a reduction of groundwater irrigated acreage in water management areas.

1995- A law was enacted that allowed the transfer of groundwater off the overlying land for irrigation purposes and for water withdrawn as part of a remediation plan, as required under the Environmental Protection Act, including the provision of water for domestic purposes.

1996- A bill was passed that recognized the connection between groundwater and surface water and initiated Joint Action Plans (JAPs). This bill also eliminated Special Protection Areas and allowed for the formation of management areas for three purposes:

1. Water quantity
2. Water quality
3. Hydrologically connected surface and groundwater

1997- The States of Nebraska, Wyoming, and Colorado and the U.S. Department of the Interior signed the Cooperative Agreement for Platte River Research and Other Efforts Relating to Endangered Species Habitats along the central Platte River, Nebraska.

1998- Kansas filed an original action in the US Supreme Court against the State of Nebraska over the Republican River Compact.

Era of Collaborative Water Planning Process Implementation

2000- The Natural Resources Commission and the Department of Water Resources were merged to create the present Department of Natural Resources (NeDNR).

2001- A law was enacted that allowed for transfers of groundwater off the overlying land for domestic purposes.

2002 - Nebraska, Colorado, and Kansas enter into the Final Settlement Stipulation (FSS) of the Republican River litigation in *Kansas v. Nebraska and Colorado*, initiated by Kansas in 1998.

2003- The US Supreme Court approved the FSS.

2004- A law was passed that allowed for designation of areas as fully or overappropriated, required annual review of river basins, directed NRD/NeDNR joint adoption of Integrated Management Plans (IMPs) to address surface water and groundwater as a single resource in fully and over appropriated basins, and also converted JAPs to IMPs.

The Director of the Department of Natural Resources issued an "Order of Final Determination of River Basins, Subbasins, or Reaches as Fully Appropriated, and

Describing Hydrologically Connected Geographic Area," which included the Republican River Basin.

2005- Upper Republican, Middle Republican, and Lower Republican NRDs' first generation IMPs were adopted by NeDNR and the NRDs after these NRDs were deemed fully appropriated in 2004.

2007- A bill was passed that established the Water Resources Cash Fund, required NeDNR to do annual streamflow forecasts, empowered all NRDs to put an immediate temporary 180 day stay on new wells, and authorized Republican River Basin NRDs to use an occupation tax and River-Flow Enhancement Bonds.

2008- The RRCA submitted disputes over compliance with the FSS to non-binding arbitration; the states executed an arbitration agreement, and non-binding arbitration began.

The Upper Republican, Middle Republican, and Lower Republican NRDs adopted updated IMPs, which included revisions to comply with changes to the Ground Water Management and Protection Act, particularly Neb. Rev. Stat. §§ 46-715, 46-716, 46-717, 46-718, and 46-720.

2009- Following the conclusion of arbitration proceedings initiated by the RRCA in 2008, the arbitrator submitted the final report and findings to the states. Key among the arbitrator's findings was the conclusion that Nebraska likely needed to implement additional provisions in its IMPs to address periods of low water supplies.

2010- The Legislature allowed voluntary IMPs in areas that are not fully appropriated.

The Legislature authorized the use of an occupation tax in any NRD if it is written into its IMP.

Kansas filed an original action in the US Supreme Court against the State of Nebraska, alleging that it had been damaged by Nebraska's violation of the Compact in 2005 and 2006.

The Upper Republican and Middle Republican NRDs, together with NeDNR, adopted updated IMPs that included Compact Call Year information and protocols.

2011- The US Supreme Court granted Kansas' motion and appointed a Special Master for Kansas v. Nebraska and Colorado to address the action filed by Kansas in 2010. Later, Nebraska filed a counterclaim seeking a change to the RRCA Accounting Procedures regarding imported water supply.

The Lower Republican NRD and NeDNR adopted an updated IMP that included Compact Call Year information and protocols.

2012- A bill was passed that allowed the non-consumptive use of water to be transferred.

Tri-Basin NRD's first generation IMP for the Republican River Basin was adopted by NeDNR and Tri-Basin NRD.

2013- The Special Master issued a report of findings and recommendations in *Kansas v. Nebraska and Colorado* related to the action filed by Kansas in 2010 and Nebraska's counterclaim filed in 2011.

2014- The Legislature created the Water Sustainability Fund and required the Republican River Basin to develop a basin-wide plan.

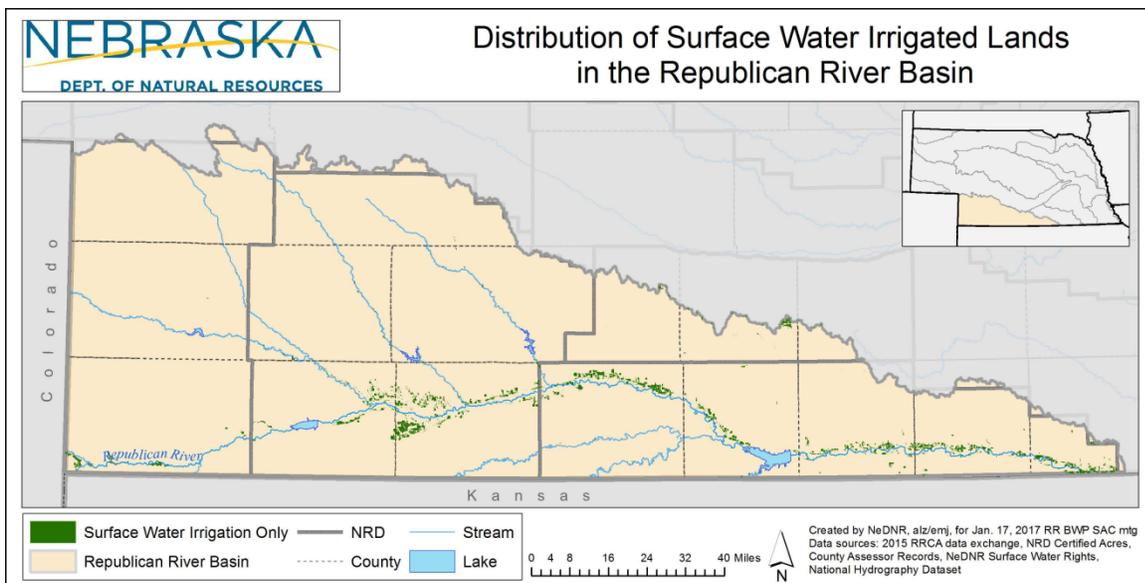
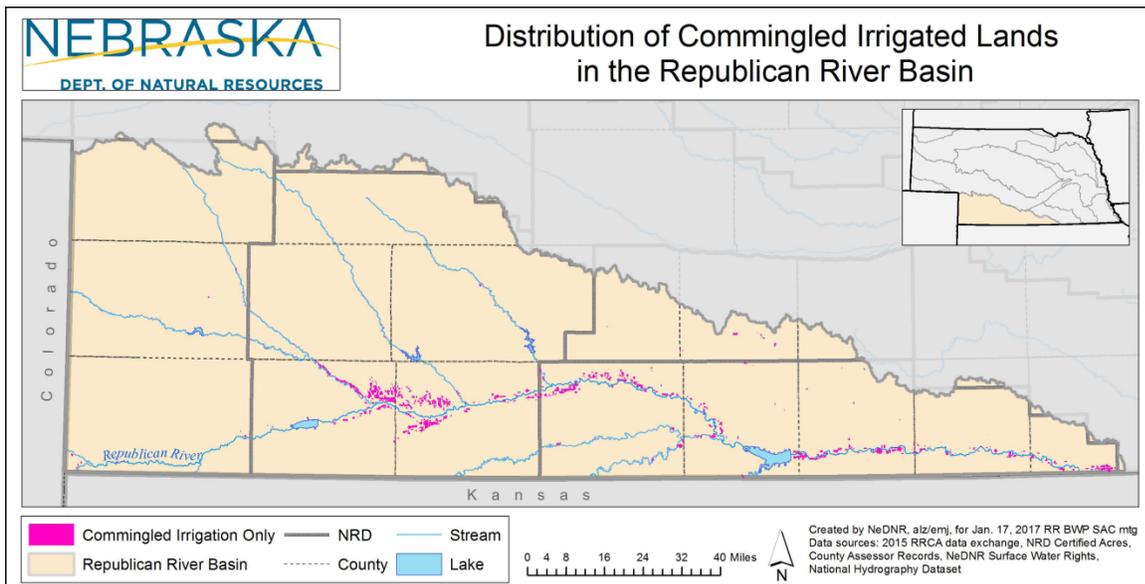
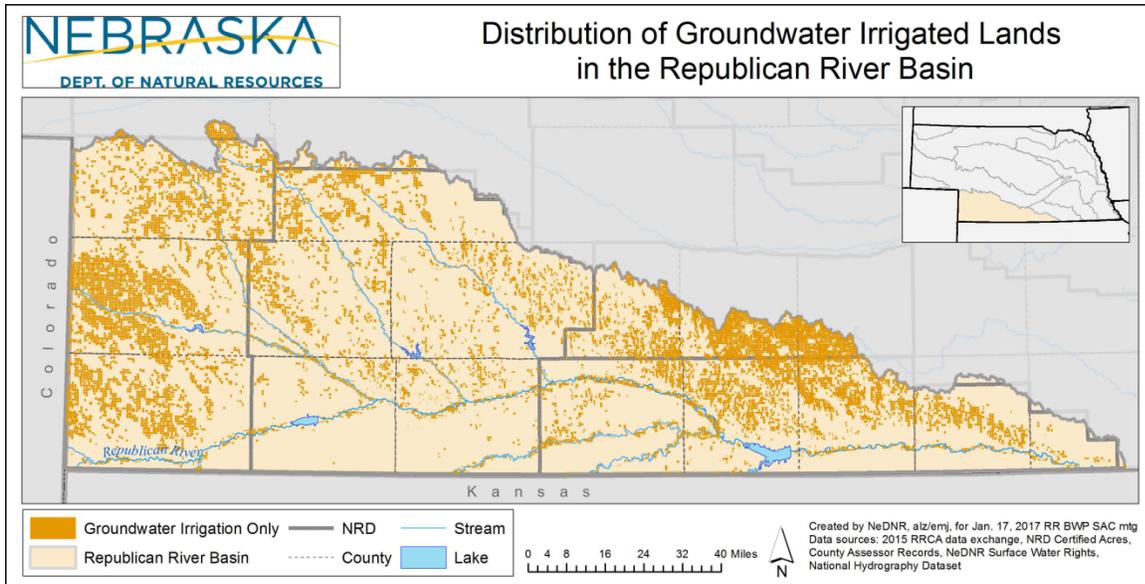
2014- The first voluntary Integrated Water Management Plans were jointly adopted.

2015- The US Supreme Court issued an opinion in *Kansas v. Nebraska and Colorado* to conclude litigation related to the action filed by Kansas in 2010 and Nebraska's counterclaim filed in 2011, accepting the recommendations contained in the Special Master's report.

2016- Upper Republican, Middle Republican, and Lower Republican NRDs, together with NeDNR, adopted updated, fourth generation IMPs.

Attachment F – Water User Maps handout

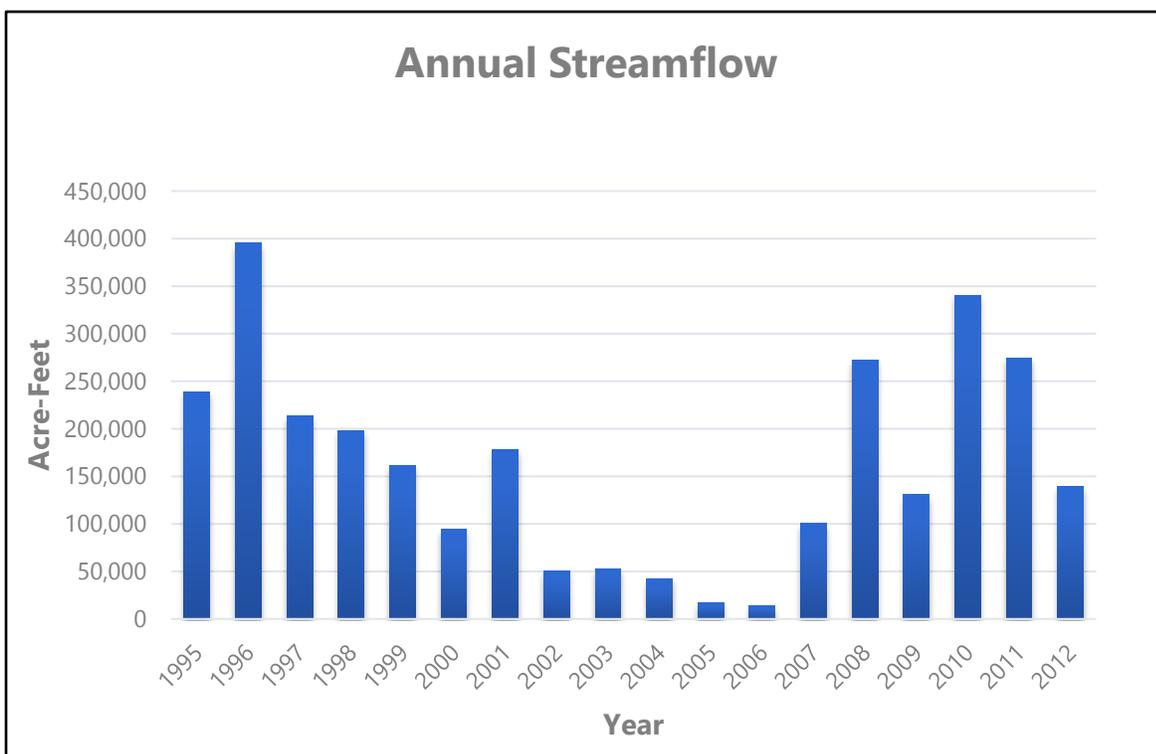
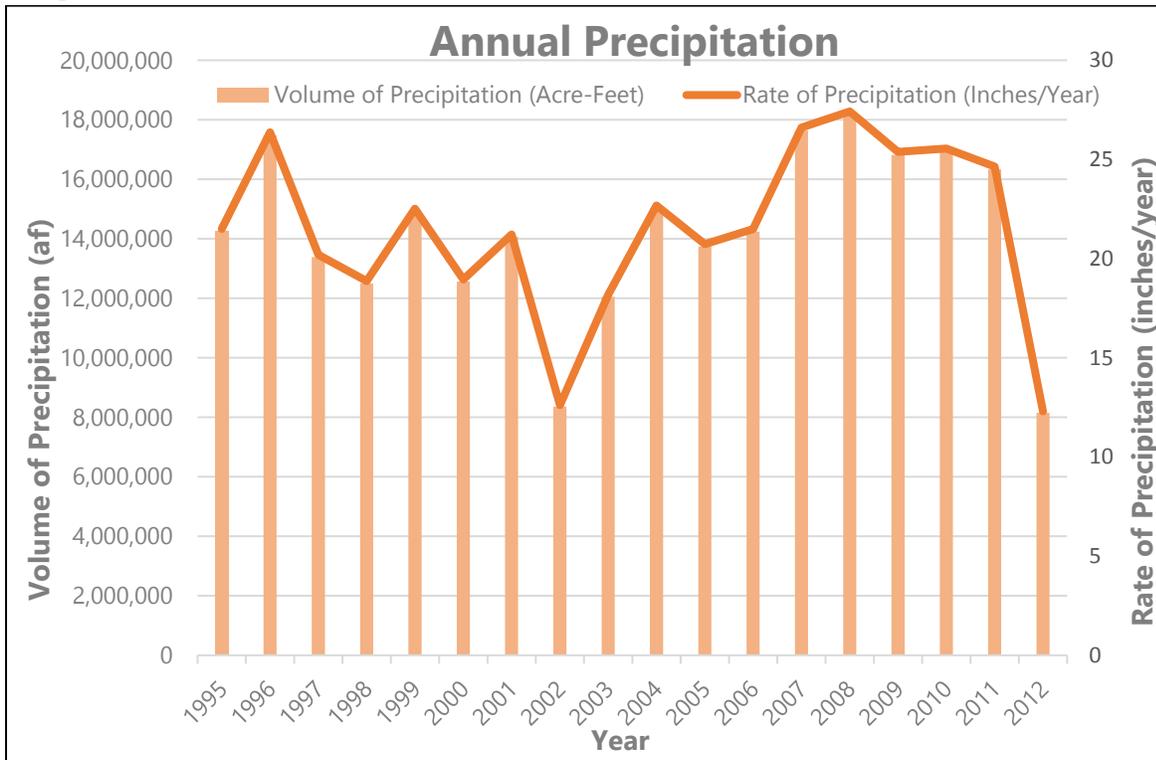
Water User Maps



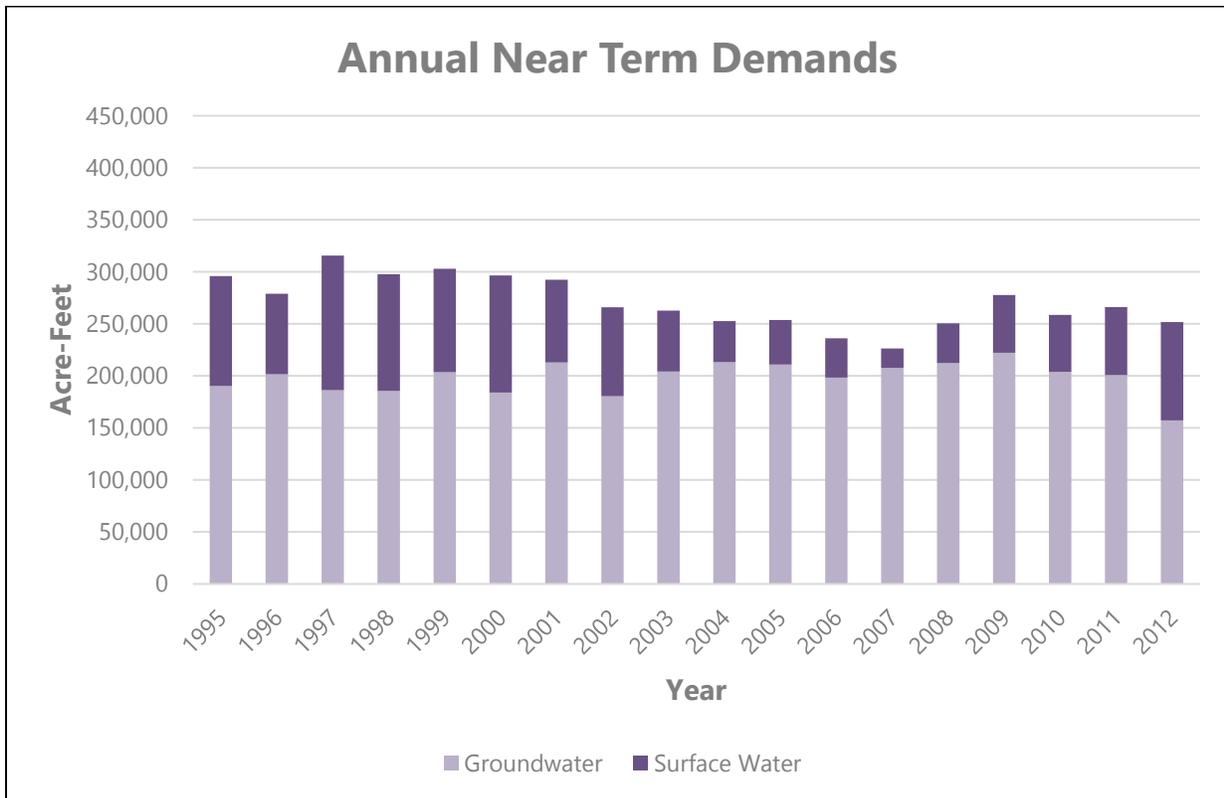
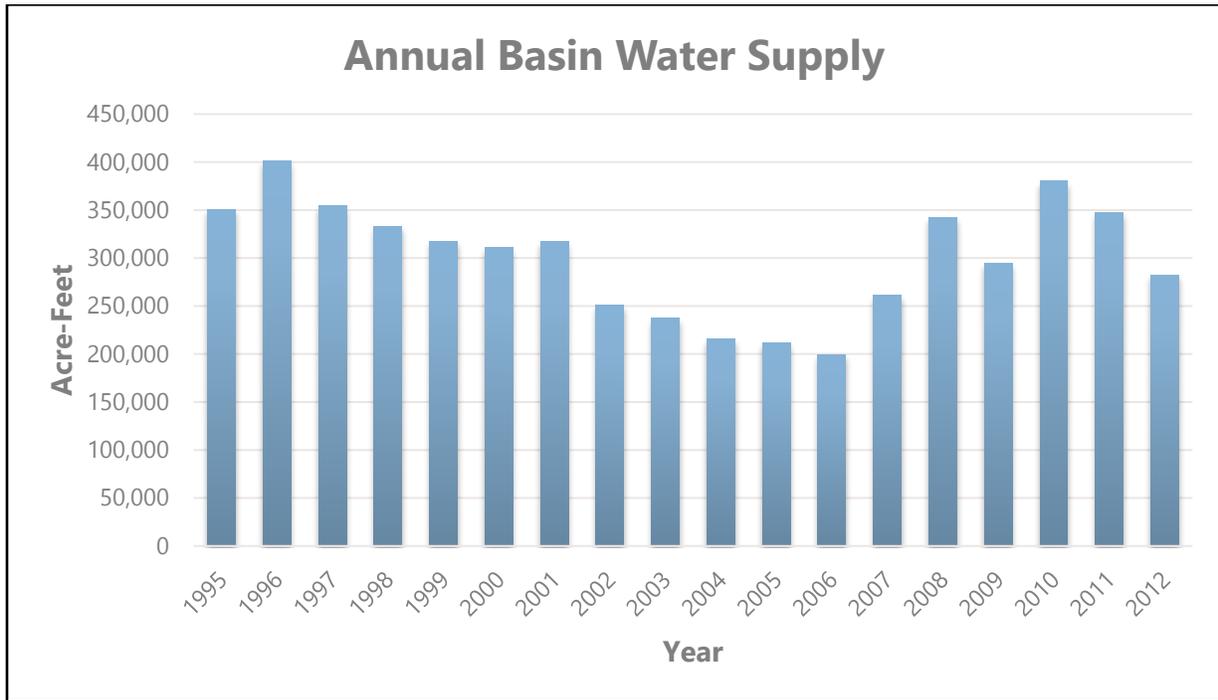
Attachment G – Draft Balancing Water Supply and Use handout

Balancing Water Supply and Use

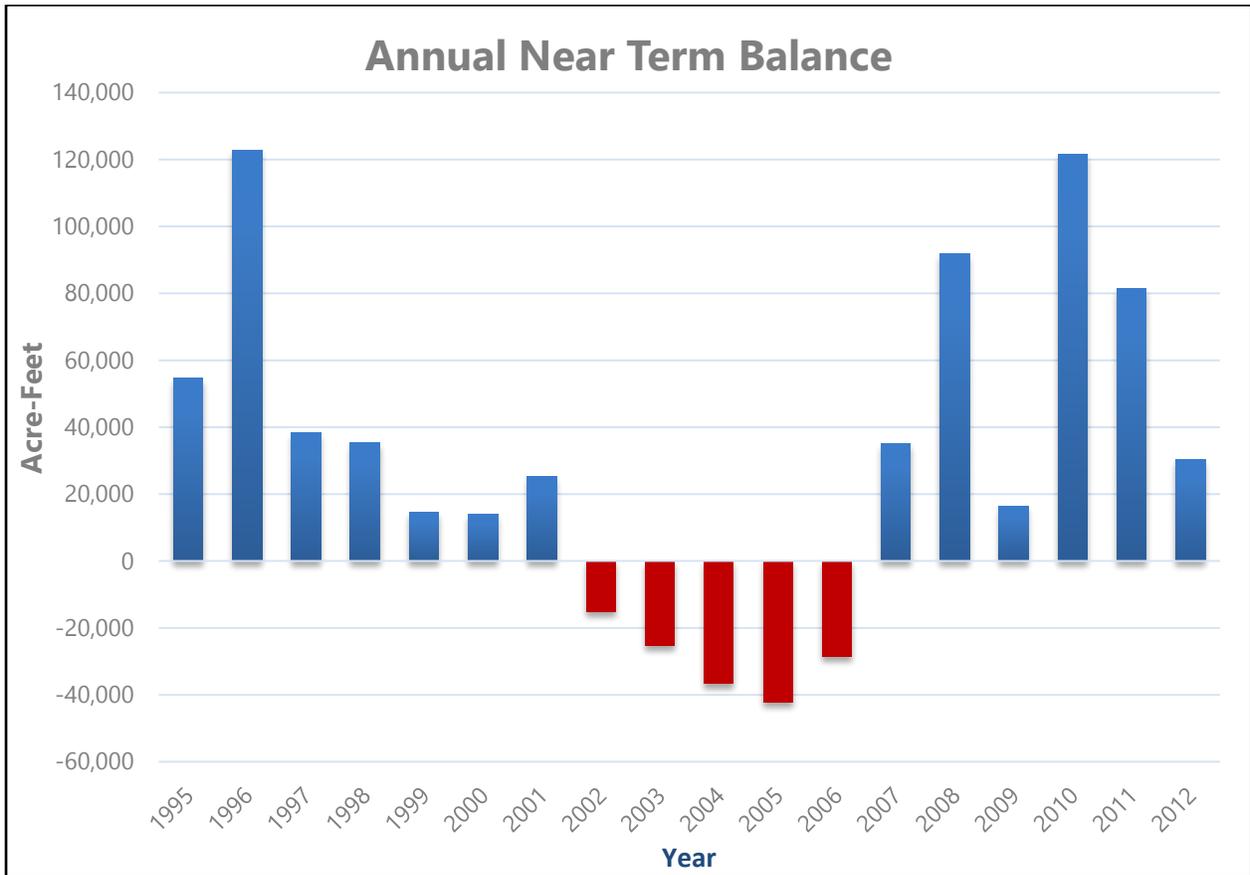
Republican River Basin INSIGHT Data



Balancing Water Supply and Use

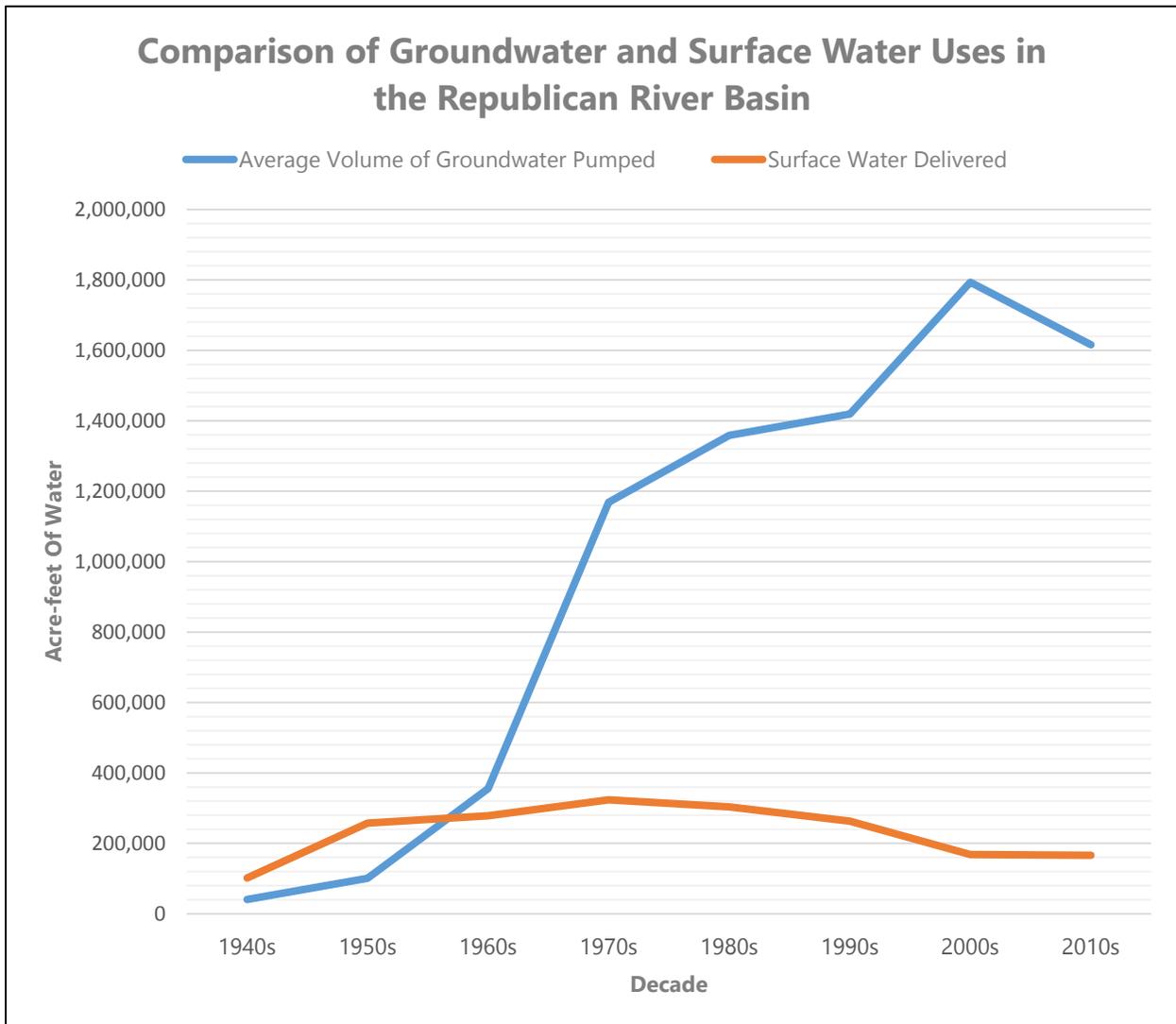


Balancing Water Supply and Use



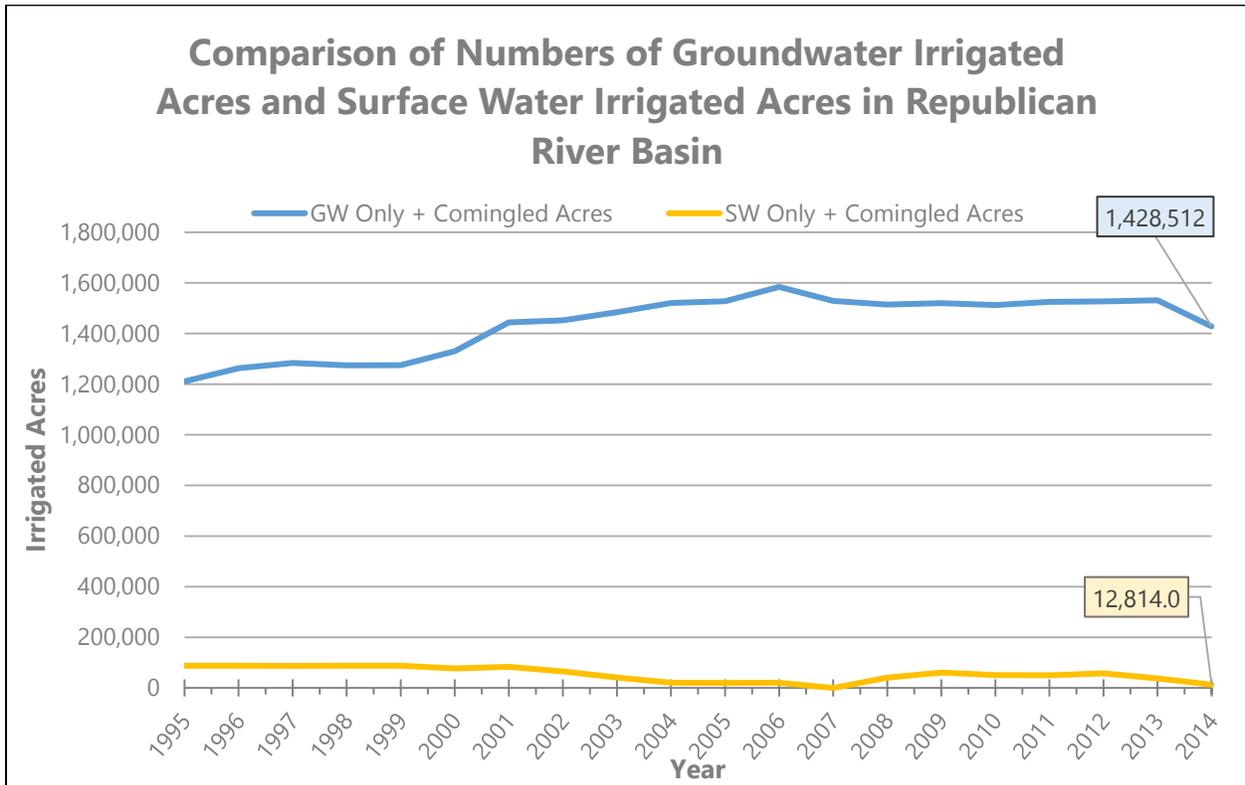
Balancing Water Supply and Use

Creation of the Imbalance



Source: Data provided to RRCA and used as inputs to the groundwater model (FWG spreadsheet). Area represented is entire Republican River Groundwater Model domain. Surface water diversions are field deliveries. Chart by NeDNR, BE, May 2017.

Balancing Water Supply and Use



Source: Groundwater acres provided to RRCA and used as inputs to the groundwater model (FWG spreadsheet). Area represented is entire Republican River Groundwater Model domain. Surface water acres are from Bureau of Reclamation and represent only acres under those projects. No small pumpers are included in this chart. Chart by NeDNR, BE, May 2017.

Attachment H – Draft Goals 1-4 handout

Goal 1: Maintain Nebraska's compliance with the Republican River Compact and applicable state laws	
Objectives	Action Items
1.1. Coordinate basin-wide plan management actions with Nebraska's Compact compliance efforts and adherence to applicable state laws	1.1.1. Review each basin-wide plan management action prior to implementation to ensure it does not negatively impact efforts to achieve Compact compliance in the most efficient and cost-effective way practicable and adherence while adhering to state laws
	1.1.2. Determine-Implement appropriate offsets for any basin-wide plan action that would exceed Nebraska's consumptive use allocation under the Compact

Goal 1: Maintain Nebraska's compliance with the Republican River Compact and applicable state laws

Goal 1, maintaining compliance with the Republican River Compact (Compact) and state laws, is an overarching goal for this Plan that must be considered throughout implementation of all other goals, objectives, and action items for this Plan.

Objective 1.1: Coordinate basin-wide plan management actions with Nebraska's Compact compliance efforts **and adherence to applicable state laws**

Objective 1.1 means that all actions of this Plan must be evaluated in the context of both Nebraska's obligations under the Compact and applicable Nebraska laws; therefore, the action items associated with Objective 1.1 must be carried out any time an action is taken in pursuit of any other goal, objective, or action item found within this Plan. Action Items 1.1.1 and 1.1.2 provide details about how to coordinate management actions with Compact compliance and adherence to state laws.

Action Item 1.1.1: Review each basin-wide plan management action prior to implementation to ensure it does not negatively impact efforts to achieve Compact compliance in the most efficient and cost-effective way practicable ~~and adherence while~~ **adhering** to state laws

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[*Italicized text in brackets*] = placeholder

Action Item 1.1.1 specifies that before any management action may be taken under this Plan, NeDNR and the NRDs will evaluate the potential action to ensure that two criteria are satisfied: no negative impact on Nebraska's efforts to achieve Compact compliance in the most efficient and cost-effective way practicable, and adherence to state laws. This evaluation is described in more detail in the following paragraphs.

One criterion that must be satisfied under Action Item 1.1.1 is that each proposed management action will adhere to all Nebraska's state laws. Examples of state laws to consider include, but are not limited to, the laws protecting existing surface water and groundwater users and laws related to permits required for water management projects.

The other criterion that must be satisfied under Action Item 1.1.1 is that each proposed management action will not negatively impact Nebraska's efforts to achieve compliance with the Compact in the most efficient and cost-effective way practicable. These efforts include any management actions undertaken by NeDNR or the NRDs for the purpose of Compact compliance in accordance with the joint integrated management plan (IMP) for each NRD.

In situations where one aspect of a project would have a negative impact on Nebraska's efforts to achieve compliance and another aspect of the same project would have a positive impact, then the final evaluation of the project's impact on Compact compliance efforts described under Action Item 1.1.1 should consider the cumulative impacts of the project as a whole. For example, a management action that increases consumptive use of water might be expected adversely impact Nebraska's Compact compliance efforts; however, if the same project includes a component that reduces consumptive use in another location in the Basin, the net effect might be to reduce overall consumptive use in the Basin, which would have a positive effect on Nebraska's Compact compliance efforts.

Action Item 1.1.2: ~~Determine-Implement~~ appropriate offsets for any basin-wide plan action that would exceed Nebraska's ~~consumptive use allocation~~ under the Compact

If any basin-wide plan action does cause Nebraska to exceed its allocation under the Compact, appropriate offsets will be implemented during the same year following the procedures detailed in the IMPs for the Basin's NRDs.

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Goal 2: Positive public relations, including information sharing, within and outside the Basin	
Objectives	Action Items
2.1. Improve information sharing with decision-makers and the public about solutions formed within the Basin	2.1.1. Use existing resources to share information about Basin progress and activities with outside entities
	2.1.2. Educate civic leaders and the public on implementation efforts within the Basin
2.2. Improve information sharing with water users who are reliant on the Basin's water supplies.	2.2.1. Share data and information related to the Republican River Compact with the public in an easily accessible, user-friendly format
	2.2.2. Regularly communicate with the Plan's Stakeholder Advisory Committee about implementation progress and potential Plan revisions
	2.2.3. <i>[Placeholder for additional actions related to Objective 2.2, if the group determines other kinds of information they think should be shared within the Basin and how]</i>

Goal 2: Positive public relations, including information sharing, within and outside the Basin

Goal 2 and its associated objectives and action items are focused on promoting positive public relations by improving information sharing, with both outside decision-makers and the Basin's water users, about the Basin's water supplies and use as well as management efforts of the Basin's water users and managers.

Objective 2.1: Improve information sharing with decision-makers **and the public** about solutions formed within the Basin

The overarching focus of Objective 2.1 is sharing information about the Basin's water management solutions with people who are not directly involved in developing or implementing those solutions. Sharing information with the Basin's water users is addressed separately in Objective 2.2. Part of Objective 2.1 is to improve information sharing about the Basin's water management solutions with decision-makers, especially those outside the Basin. This is because during Plan development, the Stakeholder Advisory Committee expressed concern that Legislators, the Governor's Office, and other

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

decision-makers were unaware of many of the achievements, efforts, and overall progress that water users and managers in the Basin have already made toward addressing the Basin's water management challenges. Sharing information about implementation efforts with the general public is also part of Objective 2.1. Action Items 2.1.1 and 2.1.2 provide details about how Objective 2.1 will be achieved.

Action Item 2.1.1: Use existing resources to share information about Basin progress and activities with outside entities

Action Item 2.1.1 specifies that outreach about Basin progress and activities will be undertaken using existing resources. Some examples of existing resources include NeDNR and the NRDs' staff, websites, and other outreach, education, or lobbying mechanisms.

Action Item 2.1.2: Educate civic leaders and the public on implementation efforts within the Basin

Action Item 2.1.2 clarifies that the "outside entities" mentioned in Action Item 2.1.1 include both civic leaders and the public. Some examples of civic leaders include the Legislature, the Governor's Office, and municipal leadership.

Objective 2.2: Improve information sharing with water users who are reliant on the Basin's water supplies.

Whereas Objective 2.1 is focused on sharing information with outside entities, Objective 2.2 is about sharing information internally, with the Basin's water users. The action items associated with Objective 2.2 describe multiple specific ways that information sharing within the Basin will be improved.

Action Item 2.2.1: Share data and information related to the Republican River Compact with the public in an easily accessible, user-friendly format

NeDNR and the NRDs already gather and share a considerable amount of data and information about Nebraska's water supplies and uses in the Basin with the states of Kansas and Colorado as part of the Republican River Compact Association's (RRCA's) annual data exchange process for the purposes of RRCA

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

accounting. These data are currently available on the RRCA website; however, they are not easy to find and are not very user-friendly for users outside the RRCA. In accordance with Action Item 2.2.1, data and information related to the Compact will be shared with the public in a user-friendly format in an easily accessible, centralized location. *[Placeholder for possible additional information to follow discussion at an upcoming stakeholder meeting]*

Action Item 2.2.2: Regularly communicate with the Plan's Stakeholder Advisory Committee about implementation progress and potential Plan revisions

Action Item 2.2.2 specifies that after this Plan goes into effect, NeDNR and the NRDs will continue to communicate with the Plan's Stakeholder Advisory Committee on a regular basis about Plan implementation progress and any potential revisions to the Plan. Details of how this action item will be implemented are described in *[placeholder for cross-reference to plan section on continued stakeholder involvement]*.

[Placeholder for additional actions related to Objective 2.2, if the group determines other kinds of information they think should be shared within the Basin and how]

[Placeholder for details about any additional Action Items under Objective 2.2]

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Goal 3: Increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water users across the Basin	
Objectives	Action Items
3.1. Increase water supply through interbasin transfers during periods of high flows	3.1.1. For each new project, study hydrologic and regulatory feasibility and evaluate potential economic and environmental impacts
	3.1.2. Where feasible and beneficial, apply for necessary permits, establish new or utilize existing infrastructure, then begin operations
	3.1.3. Operate interbasin transfers as opportunities arise
3.2. Improve water availability through conjunctive management projects within the Basin, such as, but not limited to: a. Aquifer recharge b. Streamflow augmentation projects	3.2.1. For each new project, conduct a feasibility study and evaluate potential economic and environmental impacts
	3.2.2. Where feasible and beneficial, apply for necessary permits, establish new or utilize existing infrastructure, then begin operations
	3.2.3. Operate conjunctive management projects as opportunities arise
	3.2.4. Where appropriate, work with partners such as the US Bureau of Reclamation, irrigation districts, or private landowners to identify, evaluate, and operate potential new projects
3.3. <i>[Placeholder—other objectives related to increasing certainty are likely to result from discussion of the remaining challenges during the June stakeholder meeting]</i>	
3.4. Compare the relative potential economic and environmental impacts of the types of management actions that would increase certainty for water users in	3.4.1. Within the first five-year increment, conduct a study comparing the predicted economic and environmental impacts of likely potential management actions identified in Objectives 3.1 through [3.3?] and jointly develop recommendations based on the results of the study

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

the Basin through increased water supplies or improved water availability	3.4.2. Consider the results of this study, once it is available, when making decisions about which potential future management actions to pursue in fulfillment of Objectives 3.1 through [3.3?]
3.5. Provide opportunities for collaboration among the Basin's water users	3.5.1. Hold an annual public meeting to discuss Plan implementation and exchange information about the Basin
	3.5.2. Work cooperatively to identify, investigate, and address conflicts between water users resulting from implementation of this Plan by following the procedures for addressing conflicts that are outlined in this Plan

Goal 3: Increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water users across the Basin

Goal 3 is comprised of two distinct but related ambitions: to increase certainty about the availability of water supplies for long-range planning to reduce the need for regulatory actions, and to increase collaboration among the Basin's water users. The next three paragraphs provide some background information about regulatory actions for Compact compliance and how the regulatory burden of Compact compliance has at times contributed to conflicts among the basin's water users.

Under the Republican River Compact (Compact), Nebraska has an allocation that limits how much water from within the Basin can be used. This allocation varies each year with available water supplies and consumptive use within all three states (Nebraska, Kansas, and Colorado). To comply with the terms of the Compact, Nebraska's water use must remain within its allocation over specified averaging periods. To assist with ensuring long-term Compact compliance, certain ongoing regulatory controls have been established for both groundwater and surface water in each the IMP for each NRD, including groundwater allocations, certification of irrigated acres, moratoriums on new wells and new surface water permits, and metering of all wells and surface water diversions in the Basin.

In years designated by the State as Compact Call Years, Nebraska must take additional action to meet its Compact obligations by either reducing consumption or generating additional streamflow. These potential actions can be regulatory or non-regulatory, and are outlined in the joint IMP for each NRD. For surface water, NeDNR may need to regulate and administer surface water in the Basin to ensure compliance. For groundwater, potential additional groundwater regulatory actions to ensure compliance for the Lower Republican, Middle Republican, and

For distribution at 6/20/2017 stakeholder meeting for the Republican River Basin-Wide Plan

Page 7 of 18

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Upper Republican NRDs include establishing more restrictive one-year allocations and curtailment of groundwater pumping within a designated portion of each NRD. The IMP for Tri-Basin NRD also allows for additional regulatory actions as needed to maintain a hydrologically balanced condition (i.e., no net depletions to streamflow).

[Placeholder for transition relating previous two paragraphs (about regulations for Compact compliance) to historical conflict in the Basin, to be added after future stakeholder discussion of this topic.] This basin-wide planning process represents an opportunity to decrease conflict and increase collaboration among the Basin's water users, beginning with the exchange of ideas that has taken place at stakeholder meetings throughout Plan development and continuing through Plan implementation.

Objective 3.1: Increase water supply through interbasin transfers during periods of high flows

Objective 3.1 relates to increasing water supply through interbasin transfers. This idea of diverting available water to the Republican Basin from other basins during periods of high flows has garnered much support from stakeholders throughout the plan development process. The most likely basin to serve as a suitable basin or origin for an interbasin transfer project would be the Upper Platte Basin in Nebraska, but other basins within and outside the state have also been suggested at times during Stakeholder Advisory Committee meetings. Interbasin transfers would benefit the Republican Basin by bringing additional water into the Basin, and may also benefit the basin of origin (such as the Upper Platte Basin) by potentially reducing the impacts of flooding downstream of the diversion site.

Action Items 3.1.1 through 3.1.3 outline the steps that would need to be taken in order for each potential new interbasin transfer project. In other words, for new interbasin transfer projects, Action Item 3.1.1 must precede Action Item 3.1.2, which must precede Action Item 3.1.3.

Action Item 3.1.1: For each new project, study hydrologic and regulatory feasibility and evaluate potential economic and environmental impacts

For each potential new interbasin transfer project, the project proponents will study hydrologic and regulatory feasibility and evaluate potential economic and environmental impacts.

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

In addition to examining technical feasibility, the feasibility study will, in accordance with Action Item 1.1.1, include an examination of whether the project adheres to applicable state laws and whether it negatively impacts Nebraska's Compact compliance efforts. As part of this evaluation, any factors outlined in statute for the Director of Natural Resources' evaluation of interbasin transfer applications will be included in the feasibility study and evaluation of impacts (as of *[date of plan draft]*, these factors are listed in *Neb. Rev. Stat. §46-289*).

For any potential new interbasin transfer projects initiated after completion of the comparative study of economic impacts of various potential management actions (Action Item 3.4.1), the evaluation of economic impacts required under Action Item 3.1.1 will include consideration of the results of that study, as required by Action Item 3.4.2.

Action Item 3.1.2: Where feasible and beneficial, apply for necessary permits, establish new or utilize existing infrastructure, then begin operations

For each potential new interbasin transfer project, Action Item 3.1.2 is recommended to be preceded by Action Item 3.1.1. For any project where circumstances do not allow adequate time for Action Item 3.1.1 to be completed before implementation of the project, the project proponents will, at a minimum, report on and discuss the considerations outlined in Action Item 3.1.1 at the annual meeting, allowing time for questions from the public.

As noted in this Action Item, interbasin transfer projects implemented under this Plan may involve either the construction of new infrastructure or utilization of existing infrastructure.

Action Item 3.1.3: ~~Operate~~-Implement interbasin transfers as opportunities arise

For implementation of existing interbasin transfer projects, evaluate whether Action Items 3.1.1 or 3.1.2 have been satisfactorily completed before proceeding to Action Item 3.1.3.

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

- Objective 3.2:** Improve water availability through conjunctive management projects within the Basin, such as, **but not limited to:**
- a. Aquifer recharge
 - b. Streamflow augmentation projects

Objective 3.2 examines whether more efficient use can be made of water within the Basin by retiming availability of water resources through conjunctive management projects. There are generally two categories of conjunctive management activities: storing water during periods when water is naturally abundant and using stored water during dry periods. Aquifer recharge and augmentation projects are listed within Objective 3.2 as examples of potential conjunctive management projects and are discussed in further detail in the next two paragraphs. These are intended to be examples only; other types of conjunctive management activities are also permissible for fulfilling this objective. Action Items 3.2.1 through 3.2.4 outline the steps that would need to be taken for each potential conjunctive management project.

Aquifer recharge projects fall within the category of conjunctive management activities related to storing excess water when it is available. Specifically, aquifer recharge projects are those that hold surface water in infrastructure such as canals, reservoirs, or terraces to encourage infiltration to recharge the underlying aquifer. Aquifer recharge projects undertaken to fulfill Objective 3.2 may include creating new infrastructure for the purposes of recharge, utilizing existing infrastructure for this purpose, or improving existing infrastructure to enhance its recharge capabilities. Canals and large reservoirs that existed within the Basin during Plan development are shown in Figure [x].

In contrast to aquifer recharge projects, augmentation projects fall within the category of conjunctive management activities related to using stored water during dry periods. Specifically, augmentation projects involve pumping groundwater out of the aquifer for the purposes of enhancing streamflow. Augmentation projects that exist in the Basin during development of this Plan include N-CORPE, Rock Creek Augmentation Project, and the Turkey Creek Augmentation Project (Figure [x]). Augmentation activities undertaken to fulfill Objective 3.2 may make use of these existing augmentation facilities or may involve identifying and developing new potential augmentation projects.

As noted above, aquifer recharge and augmentation are listed in Objective 3.2 as examples of potential conjunctive management projects, not as an exhaustive list. Other types of conjunctive management projects may also be considered.

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Action Item 3.2.1: For each new project, conduct a feasibility study and evaluate potential economic and environmental impacts

For each potential new conjunctive management project, the project proponent will conduct a feasibility study and evaluate potential economic and environmental impacts.

In addition to examining technical feasibility, the feasibility study will, in accordance with Action Item 1.1.1, include an examination of whether the project adheres to applicable state laws and whether it negatively impacts Nebraska's Compact compliance efforts.

For any potential new conjunctive management projects initiated after completion of the comparative study of economic impacts of various potential management actions (Action Item 3.4.1), the evaluation of economic impacts required under Action Item 3.2.1 will include consideration of the results of that study, as required by Action Item 3.4.2.

Action Item 3.2.2: Where feasible and beneficial, apply for necessary permits, establish new or utilize existing infrastructure, then begin operations

For each potential new conjunctive management project, Action Item 3.2.2 is recommended to be preceded by Action Item 3.2.1. For any project where circumstances do not allow adequate time for Action Item 3.2.1 to be completed before implementation of the project, the project proponents will, at a minimum, report on and discuss the considerations outlined in Action Item 3.2.1 at the annual meeting, allowing time for questions from the public.

As noted in this Action Item, conjunctive management projects implemented under this Plan may involve either the construction of new infrastructure or utilization of existing infrastructure.

Action Item 3.2.3: ~~Operate~~ Implement conjunctive management projects as opportunities arise

For operation of existing conjunctive management projects, evaluate whether Action Items 3.2.1 and 3.2.2 are needed before proceeding to Action Item 3.2.3.

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[*Italicized text in brackets*] = placeholder

Action Item 3.2.4: Where appropriate, work with partners such as the US Bureau of Reclamation, irrigation districts, or private landowners to identify, evaluate, and operate potential new projects

Action Item 3.2.4 recognizes that other entities, such as the US Bureau of Reclamation, irrigation districts, or individual landowners, own and operate some of the existing infrastructure that may be suitable for conjunctive management projects. Examples of existing infrastructure that may be suitable for this purpose include wellfields, canals, reservoirs, or small dams and terraces. For conjunctive management projects that utilize existing infrastructure owned and operated by other entities, NeDNR and the NRDs will always first pursue voluntary cooperation with the partner who owns and operates the existing infrastructure.

[Objective 3.3: Placeholder for any other objectives and associated action items related to increasing certainty, which are likely to result from discussion of the remaining challenges at the June stakeholder meeting]

[Placeholder for discussion of other objectives and associated action items related to increasing certainty]

Objective 3.4: Compare the relative potential economic and environmental impacts of the types of management actions that would increase certainty for water users in the Basin through increased water supplies or improved water availability

The purpose of Objective 3.4 is to provide NeDNR and the NRDs with a better understanding of the comparative magnitude of the potential economic and environmental impacts of various management actions that could be taken to fulfill Objectives 3.1 through [3.3?]. NeDNR and NRDs will conduct a study comparing the predicted economic and environmental impacts of likely potential management actions and develop recommendations based on the study (Action Item 3.4.1). NeDNR and NRDs will consider the results of the study when deciding which potential future management actions to pursue (Action Item 3.4.2).

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Action Item 3.4.1: Within the first five-year increment, conduct a study comparing the predicted economic and environmental impacts of likely potential management actions identified in Objectives 3.1 through [3.3?] and jointly develop recommendations based on the results of the study

NeDNR and the NRDs will conduct a study comparing the predicted economic and environmental impacts to the Basin of potential interbasin transfer (Objective 3.1), conjunctive management (Objective 3.2), and *[Placeholder; other potential management actions related to increasing certainty may be added as a result of discussion of the remaining challenges during the June stakeholder meeting, Objective 3.3]* projects. Additional types of management actions that would increase certainty for water users may also be included in the analysis for comparative purposes, even if they are not specifically mentioned in Objectives 3.1 through [3.3?]. For example, the management actions allowed under the joint IMP for each NRD may be included.

NeDNR and the NRDs will jointly develop recommendations based on the results of the study. The study and jointly developed recommendations will be completed before the first five-year review of Plan progress,

Action Item 3.4.2: Consider the results of this study, once it is available, when making decisions about which potential future management actions to pursue in fulfillment of Objectives 3.1 through [3.3?]

The results of the study described in Action Item 3.4.1 and the recommendations jointly developed by NeDNR and the NRDs will be used to help NeDNR and NRDs prioritize potential management actions to pursue under Objectives 3.1 through [3.3?] and Action Items 3.1.1, 3.2.1, and [3.3.1?].

Action Item 3.4.2 only applies to potential management actions being considered after completion of the study described in Action Item 3.4.1; therefore, NeDNR and the NRDs are not required to wait for this study to be completed before taking management actions in fulfillment of Objectives 3.1 through [3.3?].

Objective 3.5: Provide opportunities for collaboration among the Basin's water users

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

[Placeholder for brief historical background related to the need for increased collaboration; to be added after the June stakeholder meeting]

Objective 3.5 includes two avenues for increasing collaborative opportunities for the Basin's water users: opportunities for discussion and information exchange at an annual public meeting (Action Item 3.5.1) and collaboration to address conflicts between water users that result from implementation of this Plan (Action Item 3.5.2).

Please note that in addition to the opportunities for collaboration outlined in the action items associated with Objective 3.5, Goal 4 and its associated objectives and action items contain additional opportunities for collaboration among the Basin's water users.

Action Item 3.5.1: Hold an annual public meeting to discuss Plan implementation and exchange information about the Basin

Information about the annual meeting can be found *[Placeholder for cross-reference to section about the Annual Meeting]*

Action Item 3.5.2: Work cooperatively to identify, investigate, and address conflicts between water users resulting from implementation of this Plan following the procedures for addressing conflicts that are outlined in this Plan

Conflicts between water users resulting from implementation of this Plan will be identified, investigated, and addressed following the Procedures for Addressing Conflicts between Water Users for the Republican River Basin-Wide Plan (Appendix [x]).

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Goal 4: Basin-wide collaboration of locally controlled among water management entities and stakeholders to maximize Nebraska's efficient and beneficial consumptive use of its portion of the water supply	
Objectives	Action Items
4.1. Promote the existing conservation programs available to the water users in the Basin	4.1.1. Work together to identify, investigate, and discuss existing and potential new water conservation programs
	4.1.2. Collaborate to promote conservation program opportunities to the Basin's water users
4.2. <i>[Placeholder for any other objectives related to this goal that may arise from further stakeholder discussion.</i> <i>May include: studies, grants, recommendations, education, promotion of best management practices, sharing information, or any other type of activity that involves supporting or promoting a desirable management action indirectly.]</i>	4.2.1. <i>[Placeholder for action item(s) related to additional objectives]</i>

Goal 4: Basin-wide collaboration ~~of locally controlled among~~ water management entities and stakeholders to maximize Nebraska's efficient and beneficial consumptive use of its portion of the water supply

Goal 4 focuses on collaboration among NeDNR, the NRDs, other water management entities, and stakeholders to improve water management in the Basin by supporting and promoting desirable management actions. "Water management entity" refers to any entity that makes independent decisions about water use within the Basin. This includes, but is not limited to, the NRDs, NeDNR, irrigation districts, the Bureau of Reclamation, municipalities, and individual

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

water users. So the first part of Goal 4, "basin-wide collaboration among water management entities and stakeholders," means that this goal encompasses any objectives and actions that involve NeDNR and the NRDs collaborating with each other and others on a basin-wide scale to support beneficial water management actions that remain under control of other entities or individuals. For actions taken under Goal 4, management decisions currently under local control will remain under local control; the purpose of Goal 4 and its objectives and action items is to support beneficial management actions across the Basin, not to mandate participation by water management entities or stakeholders in any specific beneficial management action. As an example, under Objective 4.1, NeDNR and the NRDs will collaborate to promote conservation programs to the Basin's water users, but the decision of whether or not to participate in those conservation programs remains under the control of those individual water users.

The second part of Goal 4, "to maximize Nebraska's efficient and beneficial consumptive use of its portion of the water supply," gives direction and focus to these efforts.

Objective 4.1: Promote ~~the existing~~ conservation programs available to the water users in the Basin

NeDNR and the NRDs will collaborate to evaluate and promote existing and new water conservation programs related to the use of integrated water resources. These are programs that provide incentives to encourage voluntary modification by water users for the purposes of water conservation. Incentive programs may include, but are not limited to, federal programs or any program authorized by state law. Some examples of this are programs that incentivize acreage retirements or best management practices.

The IMPs for all four NRDs already include guidelines for the establishment and implementation of incentive programs to reduce beneficial consumptive use of water within each NRD. Objective 4.1 of this plan does not replace the existing incentive program guidelines contained in the four IMPs, nor does it require that all four NRDs implement exactly the same incentive programs. What it does require is that NeDNR and the NRDs share information about and evaluate water conservation programs as described under Action Item 4.1.1 and work together to promote conservation opportunities to water users as described under Action Item 4.1.2.

Action Item 4.1.1: Work together to identify, investigate, and discuss existing and potential new potential new water conservation programs

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

NeDNR and the NRDs will exchange information about and evaluate existing and potential new water conservation programs available to water users in the Basin. At a minimum, this will occur at annual meetings. NeDNR and the NRDs may also discuss water conservation programs between annual meetings, for example, as new opportunities are identified or as deadlines approach for a specific program. Evaluation of each conservation program opportunity should include consideration of whether and how that conservation program might help advance progress towards the goals and objectives of this Plan.

For each conservation program opportunity that NeDNR and the NRDs agree might help advance progress towards the goals and objectives of this Plan, NeDNR and the NRDs should discuss whether to promote such a program to water users on a basin-wide scale, as described under Action Item 4.1.2.

Implementation and administration of conservation programs will remain the responsibility of individual NRDs and NeDNR, following existing guidelines found in each joint IMP.

Action Item 4.1.2: Collaborate on the promotion of conservation program opportunities for the Basin's water users

If NeDNR and the NRDs agree that a specific conservation program opportunity might help advance progress towards the goals and objectives of this Plan, NeDNR and the NRDs may determine that the program should be collaboratively promoted users on a basin-wide scale (Action Item 4.1.1).

Potential opportunities for collaboration on the promotion of conservation programs include, but are not limited to:

1. Collaborative development of educational materials about the program, such as written materials or presentations,
2. Sharing or joint development of implementation tools such as forms or databases, or
3. Joint applications for funding to support and promote conservation program opportunities.

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

[Placeholder for any other objectives and associated action items related to this goal that may arise from further stakeholder discussion.]

[Placeholder for discussion of any other objectives and associated action items related to this goal that may arise from further stakeholder discussion. May include: studies, grants, recommendations, education, promotion of best management practices, sharing information, or any other type of activity that involves supporting or promoting a desirable management action indirectly.]

DRAFT

Formatting Key

Black = existing language agreed upon by vote at the March 2017 stakeholder meeting

Brown = new language to include a concept agreed upon by vote at the March 2017 meeting

Blue = new language drafted since the March 2017 meeting to fill in additional details (not yet voted on)

Green = written stakeholder suggestion following November 2016 stakeholder meeting (not yet voted on)

[Italicized text in brackets] = placeholder

Attachment I – Compiled Written Stakeholder Comments on Remaining Draft Plan Language Received Following the November 2016 Stakeholder Meeting handout

Compiled Written Stakeholder Comments on Remaining Draft Plan Language Received Following the November 2016 Stakeholder Meeting

Plan language		Comments
<p>Goal 5: “When possible, pursue projects that not only benefit water supplies and uses, but also create benefits for fish, wildlife, and recreation on the Republican River.”</p>		
Objectives	Action Items	
<p>5.1. Where feasible, protect and enhance fish and wildlife habitat along with outdoor recreational opportunities.</p>	<p>5.1.1. Where feasible and beneficial, partner with various groups such as (Game and Parks, Ducks Unlimited, Crane Trust, etc.) to share costs to establish new or utilize existing infrastructure and pay costs for imported water from interbasin transfers during periods of high flows to benefit the group’s habitat and wildlife interests, while also providing aquifer recharge.”</p>	
	<p>5.1.2 Promote recreational floating on the river (tubing, kayaking and canoeing).</p>	
<p>5.2. Riparian wetland assessment and restoration.</p>		<p>This could also provide recharge to the alluvial wells in the valley.</p>
<p>5.3. Where feasible, remove undesirable vegetation impacting water conveyance.</p>	<p>5.3.1. Develop a strategy to remove undesirable vegetation and prevent reinfestation.</p>	

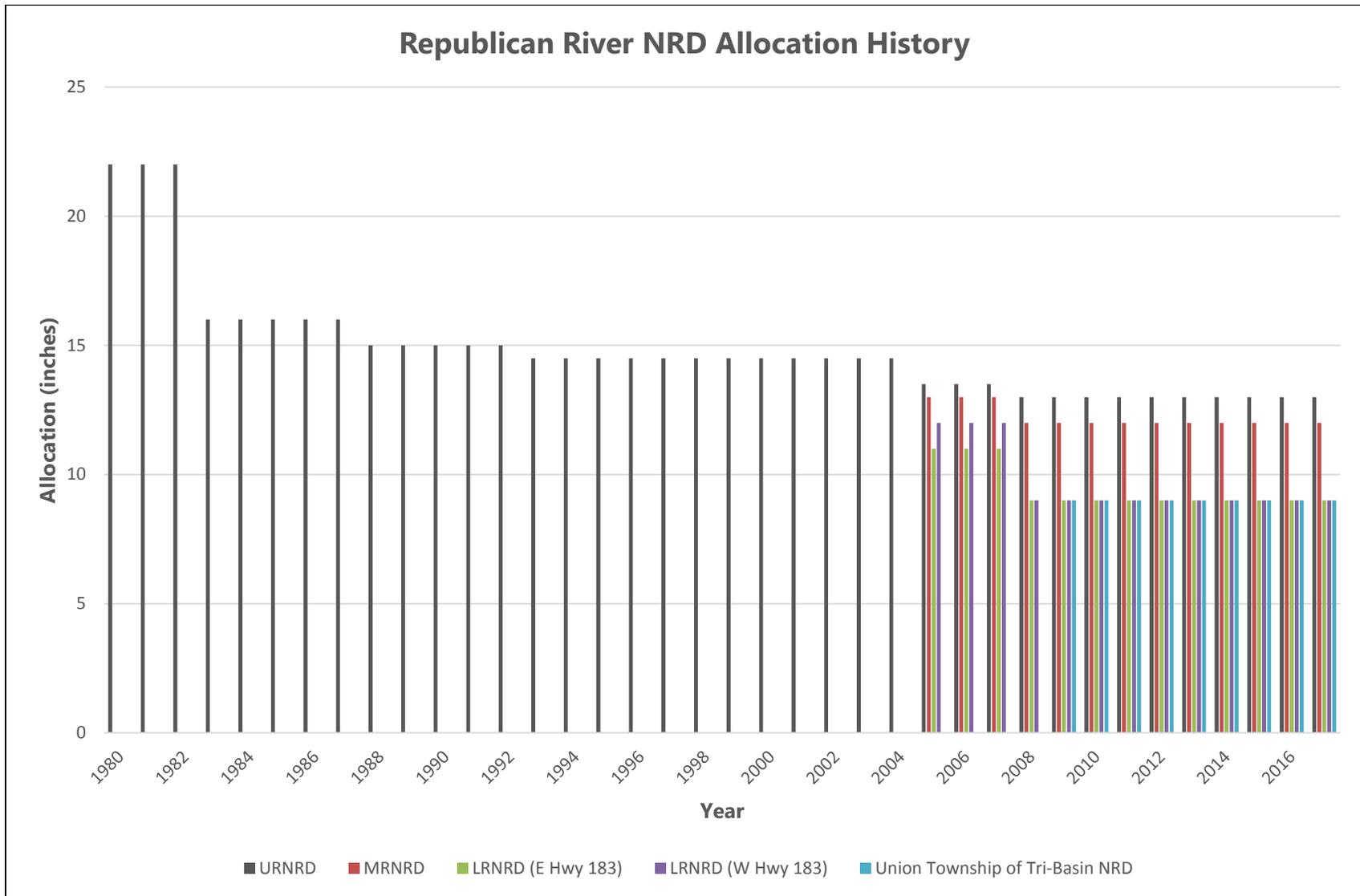
Attachment J – Allocations History handout

Allocations History

Groundwater Allocation Summary

	Upper Republican	Middle Republican	Lower Republican	Tri-Basin
Current Allocation (inches)	65	60	45	27
Allocation Time Period (years)	5	5	5	3
Current Allocation/Year (average)	13	12	9	9
Groundwater Allocations Implemented Since	1980	2005	2005	2009
Is the District Subdivided into Subareas with Distinct Allocations	No	No	No, originally, Highway 183 was the divide but now allocations are the same across the District	Yes, allocations apply to only one township in Gosper County
Hard Cap or Annual Limit (inches)	Not Applicable	12 in normal years and 15 in compact call years	Currently 13 (voted by Board of Directors each year)	Not Applicable
Carry Forward Limit (inches)	7.5	12	9	9

Allocations History



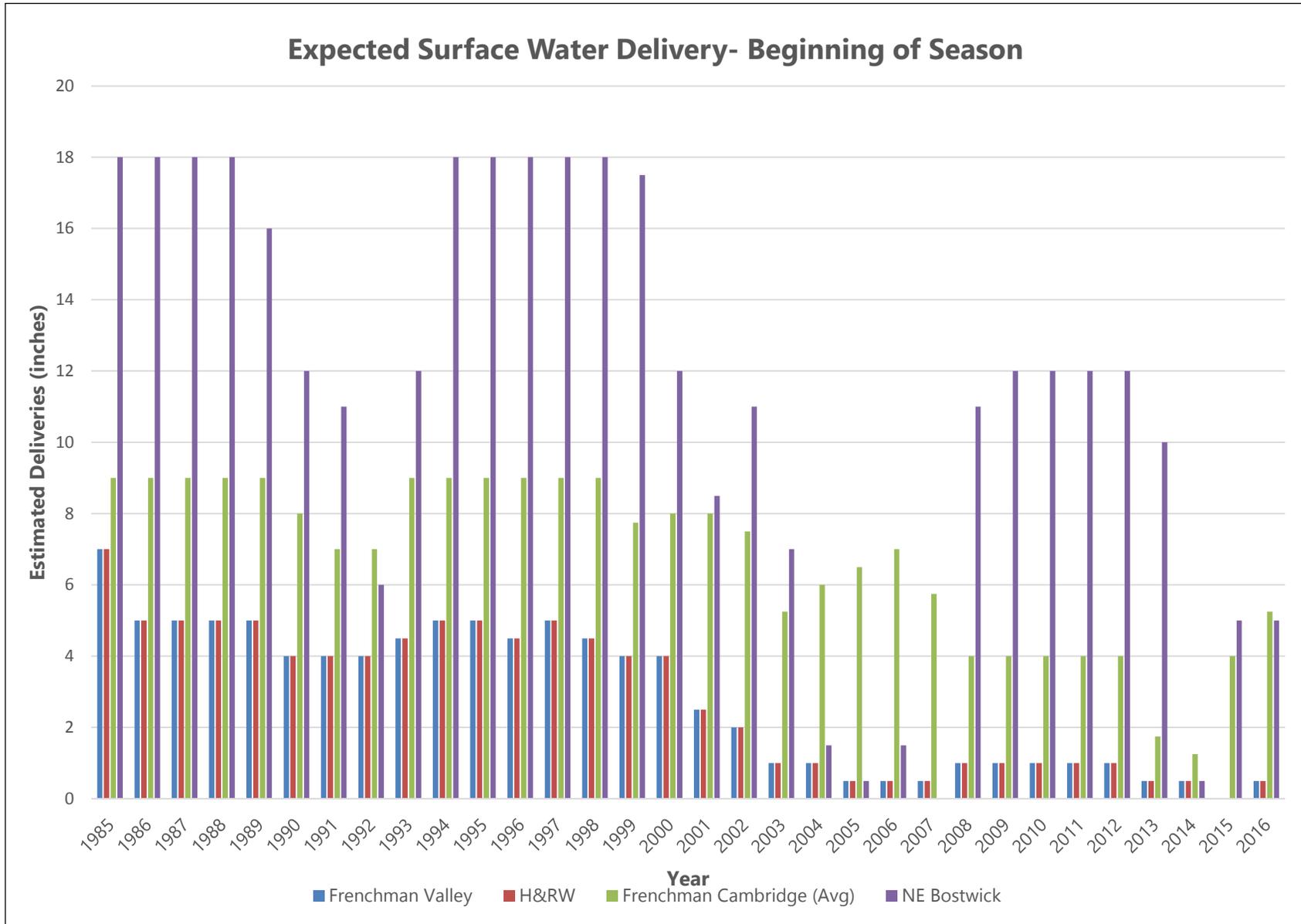
Note: Union Township allocations are for groundwater quantity purposes only, and not for integrated management purposes.

Allocations History

Surface Water Allocation Summary

	Frenchman-Cambridge Irrigation District	Bostwick Irrigation District	Frenchman Valley Irrigation District
Approximate Pre-season Projected Supply (inches)	6	7	2
Types of Surface Water Flow Rights	Natural Flow and Storage	Natural Flow and Storage	Natural Flow
Comments	Bureau of Reclamation provides an estimate of quantities available and the Irrigation District Board of Directors determine the deliveries based on this amount.	Planning is difficult because the quantity of available water is not known until March in some years.	In the past, natural flow and storage water was available

Allocations History



**Attachment K – Republican River Compact Administration (RRCA) Accounting Data
handout**

Republican River Compact Administration (RRCA) Accounting Data

RRCA Accounting Data at Hardy Gage for 2005-2015 (af)													
Year	Computed Water Supply	NE Allocation	NE CBCU	Compact Accounting Groundwater CBCU	NE Groundwater Impacts from Groundwater Model	NE Imported Water Supply (Mound Credit) from Groundwater Model	NE Surface Water CBCU	NE Allocation Minus CBCU	NE Allocation Plus Imported Water Supply	NE Allocation Minus CBCU, (Plus IWS Credit)	NE Resolution Water Supply Credit	NE Allocation Minus CBCU (Plus IWS & Nebraska Resolution Water Supply Credit)	NE Non-federal Reservoir Evaporation
2005	361,310	199,450	253,740	210,881	210,881	11,965	42,859	-54,290	211,415	-42,325	0	-42,325	2,028
2006	332,700	187,060	236,150	198,400	198,400	12,214	37,700	-49,090	199,274	-36,876	0	-28,785	1,300
2007	429,540	239,510	226,380	207,665	207,665	21,933	18,706	13,130	261,443	35,063	0	35,063	2,387
2008	594,750	315,790	249,730	212,314	212,314	26,050	37,400	66,060	341,840	92,110	0	92,110	1,940
2009	500,480	267,120	269,000	222,154	222,154	22,743	46,857	-1,880	289,863	20,863	0	20,863	1,798
2010	680,990	355,040	258,160	203,807	203,807	24,766	54,350	96,880	379,806	121,646	0	121,646	2,945
2011	616,380	323,130	264,520	200,748	200,748	23,452	63,755	58,610	346,582	82,062	0	82,062	3,302
2012	499,150	266,320	250,110	157,257	157,257	14,765	92,858	16,210	281,085	30,975	0	30,975	3,519
2013	356,310	200,480	216,850	167,951	167,951	12,463	48,901	-16,370	212,943	-3,907	15,766	11,859	2,493
2014	293,630	168,970	206,010	185,414	185,414	12,981	20,603	-37,040	181,951	-24,059	62,155	38,096	1,989
2015	412,040	223,860	243,530	197,724	197,724	17,473	45,820	-19,670	241,333	-2,197	18,698	16,501	1,318

Water-Short Years are highlighted in blue

The Hardy gaged streamflow is used for compact compliance accounting during water-short years and the Guide Rock gaged streamflow is used during non-water short years

CBCU = Computed Beneficial Consumptive Use

IWS = Imported Water Supply

af = acre-feet

Data are shown for the time period in which water management actions have taken place to implement the Lower Republican, Middle Republican, and Upper Republican NRDs' integrated management plans, which were first adopted in 2005.

Republican River Compact Administration (RRCA) Accounting Data

RRCA Accounting Data at Guide Rock Gage 2005-2015 (af)													
Year	Computed Water Supply	NE Allocation	NE CBCU	Compact Accounting Groundwater CBCU	NE Groundwater Impacts from Groundwater Model	NE Imported Water Supply (Mound Credit) from Groundwater Model	NE Surface Water CBCU	NE Allocation Minus CBCU	NE Allocation Plus Imported Water Supply	NE Allocation Minus CBCU, (Plus IWS Credit)	NE Resolution Water Supply Credit	NE Allocation Minus CBCU (Plus IWS & Nebraska Resolution Water Supply Credit)	NE Non-federal Reservoir Evaporation
2005	351,931	194,864	249,689	207,925	207,925	11,965	41,764	-54,825	206,829	-42,860	0	-42,860	1,891
2006	328,018	184,770	233,086	195,981	195,981	12,214	37,055	-48,315	196,984	-36,101	0	-28,010	1,178
2007	395,736	224,584	223,013	207,665	207,665	21,939	18,531	1,571	246,523	23,510	0	23,510	2,213
2008	558,366	300,032	247,110	212,314	212,314	26,056	39,696	52,922	326,088	78,978	0	78,978	1,940
2009	483,357	260,263	266,204	222,154	222,154	22,765	44,264	-5,941	283,028	16,824	0	16,824	-621
2010	632,992	333,799	255,225	201,801	201,801	24,768	54,350	78,574	358,567	103,342	0	103,342	2,945
2011	562,258	298,239	261,692	200,166	200,166	23,475	61,336	36,547	321,714	60,022	0	60,022	3,302
2012	486,905	261,335	246,552	157,257	157,257	14,786	94,864	14,783	276,121	29,569	0	29,569	3,519
2013	341,455	193,881	213,851	167,746	167,746	12,486	47,477	-19,970	206,367	-7,484	15,766	8,282	487
2014	280,737	163,296	203,675	185,414	185,414	13,006	20,021	-40,379	176,302	-27,373	62,155	34,782	1,407
2015	343,564	191,417	240,590	197,724	197,724	17,497	44,019	-49,172	208,914	-31,675	18,698	-12,977	1,318

Water-Short Years are highlighted in blue

The Hardy gaged streamflow is used for compact compliance accounting during water-short years and the Guide Rock gaged streamflow is used during non-water short years

CBCU = Computed Beneficial Consumptive Use

IWS = Imported Water Supply

af = acre-feet

Data are shown for the time period in which water management actions have taken place to implement the Lower Republican, Middle Republican, and Upper Republican NRDs' integrated management plans, which were first adopted in 2005.

**Attachment L – Republican River Basin-Wide Plan April and May Coordination Meeting
Notes**

Republican River Basin-Wide Plan April Coordination Meeting Notes

*Tuesday, April 18, 2017 10:00 AM – 12:00 PM
Tri-Basin Natural Resources District – 1723 Burlington Street, Holdrege, NE*

Attendance

Scott Dicke (LRNRD)	Jennifer Schellpeper (NeDNR)	Jeff Fassett (NeDNR)
Nate Jenkins (URNRD)	Jack Russell (MRNRD)	Carrie Wiese (NeDNR)
John Thorburn (TBNRD)	Sylvia Johnson (MRNRD)	Patti Banks (Vireo)
Carol Flaute (NeDNR)	Tatiana Height (NeDNR)	Mike Clements (LRNRD)

The meeting opened with a welcome. It was confirmed that the exchange of letters with each NRD is now complete. The completion date for the Republican River Basin-Wide Plan is officially extended to April 17, 2018. Updates were given on the budget, lawsuits, bills affecting NeDNR, and the Platte-Republican diversion project.

The group then reviewed the vision statement which was approved at the March stakeholder meeting. Minor edits to the vision statement were proposed in order to make it more grammatically appealing. It was decided to leave the vision as it was approved by the stakeholders.

The next topic of discussion was the June stakeholder meeting agenda. The group brainstormed how to walk through the four remaining challenges which may lead to additional plan language and potential outcomes of that agenda item. Measurements already being tracked, as a part of the IMPs, were discussed. It was also decided to draft a history of legislation in the basin.

Additional language for goals 1-4, including explanations of all goals, objectives, and action items was reviewed. The NRDs will review this handout in greater detail and provide feedback to NeDNR. The feedback on goal language may determine whether or not the next coordination meeting will take place, as scheduled, on May 16, 2017.

The group closed the meeting with a progress report on the data and information packet being developed for the stakeholders and setting a date of July 20, 2017, for the July coordination meeting.

Republican River Basin-Wide Plan May Coordination Meeting Notes

*Tuesday, May 16, 2017 10:00 AM – 12:00 PM
Tri-Basin Natural Resources District – 1723 Burlington Street, Holdrege, NE*

Attendance

Scott Dicke (LRNRD)	Jennifer Schellpeper (NeDNR)	Carrie Wiese (NeDNR)
Nate Jenkins (URNRD)	Jack Russell (MRNRD)	Mike Clements (LRNRD)
Tammy Fahrenbruch (TBNRD)	Sylvia Johnson (MRNRD)	
Carol Flaute (NeDNR)	Tatiana Height (NeDNR)	

The meeting opened with a discussion of the RRCA's efforts to update their accounting procedures and rules and regulations for consistency with the August 2016 RRCA resolutions, and also to finalize RRCA accounting data through 2015. It was anticipated that these changes would be adopted at an upcoming Special Meeting of the RRCA on May 25th. It was noted that the NRDs and NeDNR will soon need to work together to update the Republican IMPs for consistency with the August 2016 resolution on the operation of Harlan County Lake. NeDNR agreed to take the lead on revisions to the IMPs. There was also a discussion about the possibility of meeting a water supply threshold that would bring the Basin out of a Water Short Year under the new resolution, and what it would mean if that were to happen. Specific questions were noted for further follow-up by NeDNR staff. Lower Republican NRD then provided an update on the Platte-Republican Diversion project. The status is that the NRDs are still working on a water service agreement for the project.

The next topic of discussion was the June stakeholder meeting as well as other future stakeholder meetings. Draft Procedures for Addressing Conflicts were discussed in detail. The group agreed on the concepts to include in said procedures. NeDNR will make an updated draft, send it back to the NRDs for review, and bring it to a future Stakeholder Advisory Committee meeting for stakeholder input.

The idea of adding a November stakeholder meeting was discussed. A date was proposed and the idea will be brought to the stakeholders at a future Stakeholder Advisory Committee meeting. A date was also selected for the December coordination meeting.

The next Republican River Basin-Wide Plan coordination meeting will be held Thursday, July 20, 2017.

Attachment M – Republican River Basin-Wide Planning Meeting Schedule

REPUBLICAN RIVER BASIN-WIDE PLANNING MEETING SCHEDULE

JUNE 2017

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

JULY 2017

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST 2017

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

 COORDINATION MEETINGS
Holdrege, NE 10am

 STAKEHOLDER MEETINGS
Cambridge, NE 10am

 TENTATIVE STAKEHOLDER MEETING
Cambridge, NE 10am

SEPTEMBER 2017

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER 2017

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER 2017

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER 2017

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



Attachment N - Specific Stakeholder feedback regarding Understanding Water Supply and Use

- Stakeholder suggestions during the Understanding Water Supply and Use discussion included:
 - Deep monitoring wells should be used for tracking groundwater levels throughout the entire Basin.
 - Challenge what is used as a base-year and establish targets.
 - Report the water level data to the public in an understandable way and on a regular basis.
 - Establish targets from which to compare.
 - Gather data from, and compile with other well level data, observation wells that are adjacent to the US Bureau of Reclamation's irrigation canals to measure recharge occurring from the diversions.
 - Use checkbook analogy.
 - NRDs have consistent well data from 1980.
 - Have a more broad and general informational campaign for the public, and collect and use more specific data for the water managers.
 - Public educational materials should have a public relations component.
 - The public doesn't understand data, it must be presented as a well-managed resource.
 - Relate success stories and the impact of specific management actions.
 - Educate the public as well as providing them with realistic expectations.
 - Show the big picture with all of the variables that apply.
 - Yearly we share groundwater level data and maps with well owners.
 - Compare our data and correlative rights laws to other states' to highlight Nebraska's progress.
 - Share efficiencies users are implementing and their outcomes.
 - Provide descriptions of various NRD management actions.
 - Pull all the data together in one location. And link websites together. Stakeholders identified important data such as:
 - Groundwater data:

- Groundwater depletions, trends overtime.
- Provide metered groundwater data and pumping in a form that is understandable to the general public on a regular basis.
- Trends in acres irrigated using groundwater.
- Tracking of groundwater retirements and any associated transfer's overall affects.
- Surface water data:
 - Surface water deliveries, including reservoir release volumes.
 - Surface water inflows.
 - Number of acres no longer being irrigated by surface water, reservoir level declines, and districts no longer pumping surface water due to reduced stream flows.
 - Streamflow trend.
- Provide a definition of what commingled means and its impact.
- Volume of water delivered through augmentation projects.
- Relate annual data to weather conditions. Usage + rainfall during growing season results in a variable amount used from year to year.
- How conservation practices affect stream flows.
- Compare efficiency of water use by bushel/acre-foot.
- Calculate the consumptive use since we're producing more bushels with the same amount of water, and how that affects runoff and evaporation.
- View the big picture, include other states' data, Colorado and Kansas.
- Need an overall goal to measure progress.
- Although mentioned during the conversation about the legal chronology, the comments (directly) below relate more to data needs:
 - Compare the inches per acre of surface water deliveries to that of groundwater use.
 - How many surface water irrigated acres are supplemented by groundwater?
 - Tracking when water is used for compliance, and effects on surface water supply.

- Show number of acre-feet of water delivered to Kansas to meet compliance that would have been available to us [assuming the newly adopted accounting method would reveal a volume of water from years 2013-2014].
- Show what volume has to be delivered at a canal headgate to get the number of inches to a turn out at the field.
- Calculate the losses of surface water operations that result in groundwater aquifer recharge and return flows.
- Define consumptive use.
- Compare consumptive use of groundwater use and surface water diversions.
- In relation to the history of allocations, actual use which varies from year to year, for both groundwater and surface water, is important.
- There is no loss of water, it goes to a different purpose.
- Can't put the horse back in the barn.

Attachment O – Specific Stakeholder feedback regarding the Regulatory and Legal Chronology

- Stakeholder suggestions during the Regulatory and Legal Chronolgy discussion included:
 - Look at the actions done to encourage, and how efficiencies have changed over time.
 - Add a definition of “correlative rights” and “prior appropriation.”
 - Include CREP and other retirement programs.
 - Add when groundwater pumping allocations began.
 - Include when groundwater well and surface water appropriation moratoriums went into effect.
 - In relation to the history of allocations, actual use which varies from year to year, for both groundwater and surface water, is important.
 - Compare percentage of acres irrigated with surface water are now enhanced with groundwater.
 - Show history of actual consumptive use.
 - Show technological advances in irrigation both groundwater and surface water.

**Attachment P - Specific Stakeholder feedback regarding Compact Compliance
Distribution and Use**

- Stakeholder suggestions during the Compact Compliance Distribution discussion included:
 - Using water table levels by Township to set allocations.
 - All wells in the surface water basin should be restricted, including TBNRD- thus increasing the groundwater mound.
 - Depletion driven groundwater allocation.
 - The N-CORPE project is a means of distributing the burden.
 - Occupation tax is paid by everyone.
 - More augmentation projects and interbasin diversion (Jennifer added that those are included in Goal 1-4).
 - Find out how short is this basin of water, and what needs to be added to the system.
 - Jen related that this is a value question, and to refer to the Plan's Vision and Mission statements. The level of sustainability has to be balanced with other factors. We do have accounting numbers to show where we are. But that studying to determine what sustainability might be and reporting this could be part of the Plan.
 - Compact compliance means we probably have enough water.
 - While in Compact compliance can still have a declining aquifer.
 - Share the burden with people who benefit but are not farmers.
 - Identify a metric - inches per surface water acre, and groundwater acre, identify the distribution of compliance, monitor over time, and use that as a way to distribute the burden.
 - We should be looking at the whole picture, why did we get here and what are we going to do?
 - Identify all users who have access to groundwater.
 - Surface water users who have access to groundwater would be located within the rapid response area and would be shut down.
 - Augmentation through the N-CORPE project forestalled shutting down of quick response wells
 - Year to year stop-gaps (augmentation) are not long term solutions.
 - The main stem is not or fully hydrologically connected to aquifer
 - Sustainability of the aquifer is the only long-term solution.