TRI-BASIN NRD REPUBLICAN BASIN IMP
ANNUAL MEETING
Wednesday, September 29, 2021, 10:30 a.m.
Tri-Basin NRD, Holdrege, Nebraska

Attendees:
TBNRD Staff: John Thorburn, Sasha Hahn, Tammy Fahrenbruch, and Nolan Little
Nebraska Department of Natural Resources (NeDNR) Staff: Sam Capps, Alexa Davis, Hannah Mendez, Elizabeth Esseks, Carol Flaute, and Philip Paitz
Central Nebraska Public Power & Irrigation District (CNPPID) Staff: Scott Dickey

1. **Introductions**: Thorburn opened the meeting at 10:30 a.m. and noted that the open meetings act was posted, and the meeting was advertised. Thorburn stated the purpose of the meeting. Attendees introduced themselves (Attachment A).

2. **Review Agenda & Meeting Purpose:** Thorburn reviewed the agenda items and stated purpose for the meeting (Attachment B). No additions or changes were made to the agenda.

3. **Monitoring & Management Actions:**

    a. TBNRD annual report (Attachment C): Thorburn summarized the 2020 annual report:
        i. 2020 TBNRD Republican Basin Certified acres were 189,734 acres and have been fluctuating slightly over time due to corrections from county assessors (remeasuring).
        ii. Thorburn reviewed transfers, well permits, certified acres, water use data, and diversions.
        iii. 1,449 new acres were enrolled in the Water Conservation Incentive Program this year. An explanation of how the program works was given.
        iv. 1,872 acres entered the Conservation Reserve Enhancement Program (CREP) program in the Republican River portion of Tri-Basin NRD, and in 2020, 70,000 acres used conservation tillage practices.
        v. Tri-Basin NRD has been working with CNPPID to divert excess flows from the Platte River into Elwood Reservoir and the E-65 Canal.
    b. NeDNR report (Attachment D): Capps, Davis and Flaute summarized the 2021 Annual Report of 2020 Data by NeDNR.
        i. No new surface water permits, dam safety permits, or ground water permits were issued for the Republican River Basin portion of the Tri-Basin NRD in 2020.
        ii. Evaporation from small reservoirs (15 to 200 AF) in 2020 was estimated to be 260 AF.
        iii. No offsets were necessary since there were no permitted new or expanded water uses.
        iv. Davis summarized streamflow and stream gage data. It was noted that high-flow events did not occur at any of the four gages in 2020.
    c. Davis said streamflow depletion, mound accretion and the one-year net effect to baseflow were all lower in 2020 than 2019, but that 2020 had the highest three-year average net effect to baseflow in the period of record. This is because 2019, which was a very wet year, is included in the three-year average.

d. The compliance test for the IMP is based on the three-year net effect. Since the three-year average net-effect was positive, meaning that mound accretions exceeded streamflow depletions, Tri-Basin NRD is in compliance with the IMP, and no additional management actions are needed to offset depletions.
e. Projection Handout (Attachment E): Davis summarized the Projection Handout.
    i. In the dry scenario, depletions steadily drop and intersect with accretions in 2023.
    ii. In the variable scenario, the intersection occurs in 2024.
    iii. These scenarios are estimates only, to give a rough estimate of when management actions might be required under certain hydrologic conditions. Based on these projections, Tri-Basin should expect that additional management actions might be needed within the next few years.

4. **Republican River Basin-Wide Plan Activities:** Thorburn noted that there was nothing district-specific to discuss about Republican River Basin-Wide Plan Activities at this time, stating the monthly Republican coordination meeting was being held at 2pm that afternoon.

5. **IMP and other NRD Plans:**

a. IMP Update (Attachment F):
    i. Flaute went through the preliminary draft of the Second-Generation Integrated Management Plan (IMP), noting comments about possible changes to the Plan.
    ii. Thorburn agreed with all of the proposed changes, noting that the only real substantial policy change would be in reference to the current cap of 2,000 acre-feet per year.
    iii. The target month for the first meeting about the IMP update was December 2021, with a tentative date of December 15th.
        - Esseks will send out a poll after the meeting to solidify this date.
    iv. Thorburn will begin to compile a list of possible stakeholders for the IMP update.
    v. Thorburn will draft updates for the sections of the IMP pertaining to Tri-Basin specific content (such as information about the NRD's incentive programs, water banking, or transfer guidelines) and NeDNR staff will draft updates for other sections such as background and compliance test details.

b. LRIP/MP/GWMP/R&R Guidance Handout (Attachment G): Thorburn provided updates on TBNRD Plans
    i. The Groundwater Management Plan has been updated and TBNRD will send it to NeDNR for review.
    ii. For the Long-Range Implementation Plan (LRIP):
        - Thorburn stated that he was previously told by someone at NeDNR that the Tri-Basin NRD Annual Report can be used as the LRIP.
        - Thorburn had questions about the redline copy of the LRIP, and Flaute explained that NeDNR typically requests a redline copy showing changes from the NRD's previous LRIP, but that if Tri-Basin writes

theirs new each year instead of updating an existing document, a redline copy is not necessary.

iii. Master Plan will be updated next year.

iv. Rules and Regulations just went through an update process and the final updated Rules and Regulations and the notice will be sent to NeDNR.

6. Meeting Summary

a. **Action Items:** NeDNR to set meeting date for IMP Update (Esseks); TBNRD to develop list of stakeholders for IMP Update (Thorburn); TBNRD to send NeDNR copies of the updated Rules and Regulations and notice (Thorburn); NeDNR to write the first draft of the minutes for this meeting (Mendez); TBNRD and NeDNR staff to draft language for assigned IMP sections prior to December meeting; TBNRD and NeDNR staff to meet again in December to discuss draft IMP revisions.

b. **Schedule Next Annual Meeting:** The next meeting will tentatively be held Thursday, September 29th, 2022 at 11 a.m.

The meeting was closed at 11:20 a.m.

ATTACHMENT A
Sign-in Sheet

Tri-Basin NRD Annual IMP Update Meeting

September 29, 2021 | Holdrege, NE | 10:30 a.m. (CST)

SIGN-IN SHEET

	Name:	Representing (Self or Organization):
1.	Alexa Davis	NeDNR
2.	Sasha Hahn	TBNRD
3.	Hannah Mendez	NeDNR
4.	Tammy Fahrenbruch	TBNRD
5.	Scott Dicke	CNPPID
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Attachment B
Agenda

AGENDA

TRI-BASIN NRD REPUBLICAN RIVER IMP
ANNUAL MEETING

September 29, 2021, 10:30 am Central Time
Tri-Basin Natural Resources District,
1723 N. Burlington St., Holdrege, Nebraska

1) Introductions

2) Review Agenda & Meeting Purpose

3) Monitoring & Management Actions
    a) TBNRD annual report
    b) NeDNR Report
    c) Projection Handout
    d) Other TBNRD Monitoring & Management topics

4) Republican River Basin-Wide Plan Activities

5) IMP and other NRD Plans
    a) IMP Update
    b) LRIP/MP/GWMP/R&R Guidance Handout

6) Meeting Summary
    a) Action Items
    b) Schedule Next Annual Meeting

ATTACHMENT C
TBNRD Report

Water Jamboree 2021 - Water Safety Session at Harlan County Reservoir on the Republican River

2020 Annual Report of Integrated Water Management Activities in the Republican Basin Within Tri-Basin NRD

Tri Basin Natural Resources District

1723 Burlington Street
Holdrege, Nebraska 68949
(308) 995-6688
www.tribasinnrd.org
email: tribasin@tribasinnrd.org

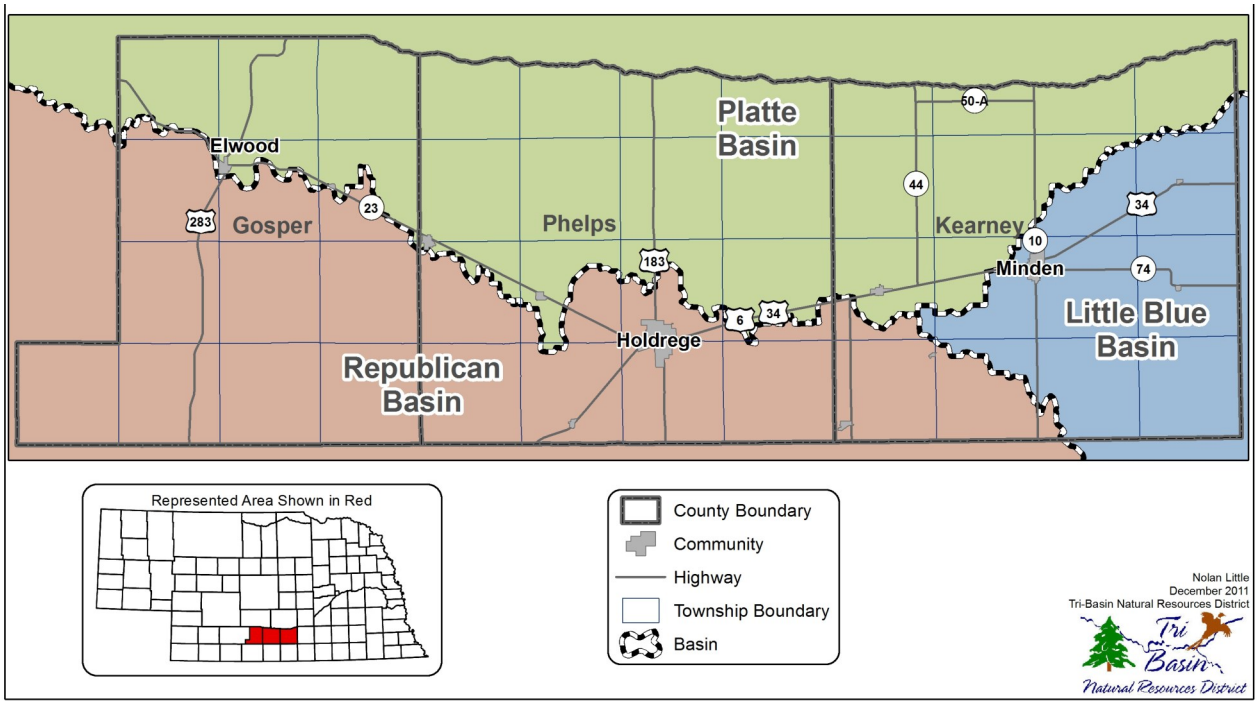
October 2021

ANNUAL REPORT OF WATER USE ACTIVITIES
IN THE REPUBLICAN BASIN WITHIN TRI-BASIN NRD
TO MEET THE REQUIREMENTS OF THE JOINT INTEGRATED MANAGEMENT PLAN
FOR THE 2020 JOINT INTEGRATED MANAGEMENT PLAN PROGRESS REVIEW MEETING

I. SUMMARY

The purpose of this report is to convey information that Tri-Basin Natural Resources District (TBNRD) agreed to supply to the State of Nebraska as part of a joint Integrated Water Resources Management Plan for the Republican River Basin portion of the district.

Map 1: Basin Reference Map



II. INTRODUCTION

TBNRD encompasses portions of the Republican, Platte, and Little Blue River Basins (see **Map 1**, above). The district also contains an area commonly referred to as the "Groundwater Mound," a large area spanning portions of all three basins that is characterized by groundwater levels that are generally higher than historic "pre-development" groundwater elevations.

More than 100,000 acres of cropland within the Platte Basin portion of TBNRD are irrigated with water diverted from the Platte River and distributed through the canals of the Central Nebraska Public Power and Irrigation District (CNPPID). Surface irrigation water and the canals that distribute it enhance recharge of groundwater supplies within the district. In addition to helping sustain groundwater supplies, this incidental recharge has increased streamflows in Platte and Republican tributaries.

III. CERTIFIED IRRIGATED ACRES

The District began certifying irrigated acres in the Republican Basin in 2004. Development of additional certified irrigated acres in the Republican Basin was prohibited as of September 15, 2004. Since that time, corrections and revisions to the certified acre database have occurred with a net result of 189,734.75 certified irrigated acres in the Republican Basin portion of Tri-Basin NRD as of December 31, 2020. Data regarding certified irrigated acres can be found in **TABLE 1: Certified Irrigated Acres**, below. The commingled acres referred to in the table are acres that may be watered with either groundwater or surface water, or a combination of both. Detailed information about locations and distribution of certified irrigated acres is available in the Tri-Basin NRD office.

TABLE 1: Certified Irrigated Acres

County	Year	Groundwater	Commingled Acres	Surface Water	Totals
Gosper	2012	56,489.90	1,057.16	173.00	57,720.06
	2013	56,501.89	1,013.68	216.48	57,732.05
	2014	56,494.37	1,013.68	123.48	57,631.53
	2015	56,671.20	1,013.68	123.48	57,808.36
	2016	56,707.83	1,013.68	88.48	57,809.99
	2017	56,590.81	1,017.11	87.98	57,695.90
	2018	56,605.10	1,017.11	87.98	57,710.19
	2019	56,604.94	1,017.11	87.98	57,710.03
	2020	56,531.46	888.89	87.98	57,508.33
Kearney	2012	40,955.11	427.59		41,382.70
	2013	40,938.11	427.59		41,365.70
	2014	40,937.45	427.59		41,365.04
	2015	40,918.57	427.59		41,346.16
	2016	40,922.16	427.59		41,349.75
	2017	40,938.16	427.59		41,365.75
	2018	40,941.91	427.59		41,369.50
	2019	40,975.52	427.59		41,403.11
	2020	40,975.52	427.59		41,403.11
Phelps	2012	85,504.59	4,532.56	236.51	90,273.66
	2013	85,550.50	4,562.40	236.51	90,349.41
	2014	85,926.68	4,562.66	161.23	90,650.57
	2015	86,090.68	4,488.25	235.65	90,814.58
	2016	86,100.60	4,488.25	235.65	90,824.50
	2017	86,098.12	4,488.25	235.65	90,822.02
	2018	86,071.22	4,645.38	74.42	91,180.93
	2019	86,093.19	4,645.38	74.42	90,812.99
	2020	86,227.27	4,521.34	74.70	90,823.31
District Totals	2012	182,949.60	6,017.31	409.51	189,376.42
	2013	182,990.50	6,003.67	452.99	189,447.16
	2014	183,358.50	6,003.93	284.71	189,647.14
	2015	183,680.45	5,929.52	359.13	*189,969.10
	2016	183,730.59	5,929.52	324.13	*189,984.24
	2017	183,627.09	5,932.95	323.63	*189,883.67
	2018	183,618.23	6,090.08	162.40	*189,870.71
	2019	183,673.65	6,090.08	162.40	*189,926.13
	2020	183,734.25	5,837.82	162.68	*189,734.75

*total does not include 342.2 Harlan County acres

IV. APPROVED CERTIFIED ACRE AND GROUNDWATER TRANSFERS

A. TBNRD allows certified irrigated acres to be transferred from one parcel to another within the Republican Basin portion of the district, with some limitations. Certified irrigated acres cannot be transferred from parcels with surface water or commingled water resources to parcels that have groundwater wells as their only water source. The NRD also pro-rates certified acre transfers in which acres are transferred from low to high streamflow depletion zones. Between January 1, 2020 and December 31, 2020 the District approved one certified irrigated acre transfer in the Republican Basin. A total of 4.1 certified irrigated acres were involved in these transfers. Data regarding the location, amount, and conditions associated with each transfer can be found in **TABLE 2A: Republican Basin Transfers-Acres Original Locations** (below) and **TABLE 2B: Republican Basin Transfers-Destinations for Transferred Acres** (below).

Table 2A: Republican Basin Transfers - Mitigation (From Source)

NRD Permit Number	Legal Location	Decertified Acres
TBAT-0357	Section 27-6- 19 W	4.1

Table 2B: Republican Basin Transfers - Destination (To Location)

NRD Permit Number	Legal Location	New Irrigated Acres
TBAT-0357	Section 20-5- 19W	4.1

B. TBNRD regulates groundwater pumping off of overlying land by requiring landowners to secure groundwater transfer permits before they can pump groundwater to parcels that are not under the same ownership. Groundwater transfer permits can only be used to supply groundwater for irrigation of certified irrigated acres. Landowners are required to install flowmeters on wells that are permitted for transfers and to report pumping from these wells annually to TBNRD. TBNRD issued three groundwater transfer permits involving 125.4 acres in the Republican Basin between January 1, 2020 and December 31, 2020 (see **TABLE 3: Groundwater Transfers**, below).

TABLE 3: Groundwater Transfers

NRD Permit Number	Legal Location	Neighboring Certified Acres to be watered with well	Well Registration	Well ID
GWT-0343	Section 4-5- 24W	104	G-046981	261313
GWT-0344	Section 20-5- 19W	4.1	G-001341	4762
GWT-0345	Section 20-5- 19W	17.3	G-001341	4762

V. WELL CONSTRUCTION PERMITS

A. Since 1989, TBNRD has required landowners to secure well construction permits before they drill wells capable of pumping more than 50 gallons per minute. The District issues three categories of well permits: New well permits, Conditional Replacement well permits, and Replacement well permits.

TBNRD requires landowners to agree to several conditions on the operation of new wells and conditional replacement wells before permits are issued. These conditions are listed in an agreement that is signed by landowners when they apply for these types of well permits. A copy of that agreement is attached to this report as **Appendix A**.

Table 4: TBNRD Well Permits

Permit Type	Number
New (variance) irrigation	0
Replacement irrigation	6
Conditional replacement irrigation - supplemental to groundwater	0
Conditional replacement irrigation - supplemental to surface water	0
Dewatering	0
New Commercial/industrial (Acre transfer involved)	0
Domestic (over 50 gallons per minute	0

B. **TABLE 4: TBNRD Well Permits** (above) is a breakdown of well permits TBNRD issued in the Republican Basin between January 1, 2020 and December 31, 2020. A detailed listing of well permits issued by TBNRD in 2020 is found in **TABLE 5: Well Permit Summary** (below).

Table 5: Well Permit Summary

NRD Permit Number	Well Permit Type	Legal Description	DNR Well Registration Number	DNR Well ID Number
TBRP-G046981-R1	Replacement	NW 1/4 Section 4-5- 24W	G-046981	261313
TBRP-G053678-R1	Replacement	SE 1/4 Section 31-6- 16W	G-053678	262077
TBRP-G032452-R1	Replacement	NE 1/4 Section 28-6- 19W	G-032452	262076
TBRP-G064932-R1	Replacement	SW 1/4 Section 36-7- 21W	G-064932	262234
TBRP-G029398-R1	Replacement	SE 1/4 Section 27-5- 19W	G-029398	263352
TBRP-G025834-R1	Replacement	SW 1/4 Section 24-5- 15W	G-025834	263890

VI. VARIANCES

TBNRD considers variances to district rules regarding certified irrigated acre transfers. In 2020, District directors approved one variance allowing a well being replaced to be modified to a stock well rather than abandoned. The variance had no bearing on the certified irrigated acres associated with the parcel. Information about this variance is in **TABLE 6: Republican Basin Certified Irrigated Variances** (below).

Table 6: Republican Basin Well and Certified Irrigated Variances

Date	Variance Type	Location	Affected Acres	IMP Comments
5/12/2020	Well Requirement Variance	Section 5-5- 24W		Variance on Abandonment Requirement - Modify Irrigation Well to Stockwell

VII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

TBNRD collects water use data annually from all municipalities and industries within the district. Municipal and industrial water use data for communities and industries located in the Republican Basin reported to TBNRD in 2020 are shown in the next two tables. A summary of municipal water use may be found in **TABLE 7: Republican Basin Municipal Water Use Data** (below) and **TABLE 8: Industrial and Commercial Water Use Data** (below).

TABLE 7: Republican Basin Municipal Water Use Data (in gallons)

Municipality	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atlanta	33,219,000	23,124,400	20,357,400	21,729,800	18,953,600	14,161,100	10,210,500	9,046,300	17,806,800
Arapahoe	138,279,000	120,573,000	97,223,000	91,449,000	103,916,000	101,311,000	90,286,000	83,598,000	115,461,000
Holdrege	512,347,700	473,755,500	519,360,800	470,600,100	478,038,800	441,265,200	402,611,800	373,071,300	491,922,000
Wilcox	27,905,000	25,414,900	22,987,500	27,343,300	25,688,000	25,049,600	26,343,100	28,349,000	34,895,000
			Total	**611,122,200**	**626,596,400**	**581,786,900**	**529,451,400**	**494,064,600**	**660,084,800**

TABLE 8: Republican Basin Industrial and Commercial Water Use Data

DNR Well Registration Number	DNR Well ID Number	Owner	Legal Description	Gallons Used
G-030619	37512	City of Holdrege	Section 9-5- 18	0
G-025572	32122	City of Holdrege	Section 9-5- 18	0
G-096786	109719	City of Holdrege	Section 34-6- 18	1,556,300
G-135221	169721	Geer Utilitiy	Section 27-6- 18	1,884,790
G-135220	171309	Geer Utilitiy	Section 27-6- 18	series well
G-069908	78071	Holdrege County Club	Section 29-6- 18	24,642,300
G-009687	14429	Holdrege County Club	Section 29-6- 18	23,759,300
G-070168	78331	Holdrege Well Service	Section 34-6- 18	310,070
G-070393	78555	NE Game & Parks, Sac-Wilcox WMA	Section 27-5- 17	9,700
G-184679	250906	Norder Supply Inc	Section 12-6- 23	941,000
G-071934	80096	Sargent Irrigation Co Inc	Section 34-6- 18	141,100
G-179201	241336	Tri-Basin NRD	Section 7-6- 21	129,525

VIII. FLOWMETER DATA

TBNRD requires flowmeters to be installed on all irrigation, commercial, and industrial wells in the Republican Basin portion of the district. Annual water use is reported to TBNRD. In 2020, landowners reported data from 1,489 metered wells in the Republican Basin, which provided irrigation for 181,840.00 certified irrigated acres. There are 28 wells in the Republican Basin that are exempt from having flowmeters because they irrigate less than 15 acres. Water use on these wells is estimated and reported annually. All district flowmeter data is reported annually to the Nebraska Department of Natural Resources (NDNR) for Republican River Basin Compact Administration accounting. A summary of Republican Basin water use data is included in this report as **Appendix B**. Detailed Republican Basin flowmeter data is available from the Tri-Basin NRD office.

IX. WATER BANKING ACTIVITIES

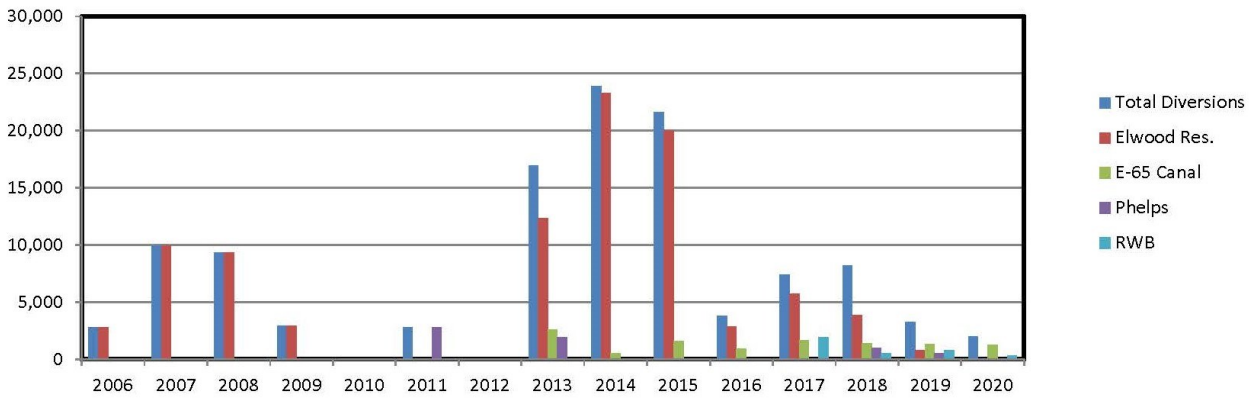
TBNRD has initiated a new program called the Water Conservation Incentive Program (see program summary in **Appendix D**). Participants in this program sign contracts agreeing to limit irrigation to the UNL Average Corn Crop Irrigation requirement. In exchange, Tri-Basin NRD agrees to pay them if they use less water than their allocated amount. Participants will be provided with credit accounts that track available water use credits for participating fields. A total of 1,449.57 certified irrigated acres in the Republican Basin portion of the district were approved in 2020 for this new program. The TBNRD Board of Directors has committed funds sufficient to pay incentives for as many as 8,000 acres to be enrolled in the program.

X. RETIRED ACRES AND OTHER STREAMFLOW ACCRETION ACTIVITIES

Tri-Basin NRD started utilizing the facilities of Central Nebraska Public Power District (CNPPID) to provide groundwater recharge and to augment streamflows when the district and the NE Game and Parks Commission paid CNPPID to divert 9,551 acre-feet of water from the Platte River into Elwood Reservoir in Gosper County in 2006. Additional diversions (see **Appendix C** and **Graph 1** below) have been made regularly over the ensuing 14 years. In all these instances, diversions were made when Platte streamflows exceeded target flows, or when irrigation deliveries were suspended because of heavy rainfall in the CNPPID irrigated area. Diversions into Elwood Reservoir and E-65 Canal provide ground water recharge and "imported water" to augment Republican Basin water supplies.

Tri-Basin and Lower Republican NRDs commissioned a feasibility study to examine directly diverting excess flows from the Platte via E-65 Canal to Turkey Creek, a Republican tributary in Gosper County. That study concluded that the diversion project is feasible both hydrologically and economically. The partners have purchased a 330-acre parcel of pasture

Graph 1: Platte Excess Flow Diversions by CNPPID for TBNRD and NDNR



at the upper end of Turkey Creek Canyon. We have also applied for a water right for the project. Construction is anticipated in 2022, assuming that water right is approved this year.

Tri-Basin NRD also constructed a streamflow augmentation well on the east branch of Turkey Creek. This augmentation well is capable of pumping as much as 1,000 acre-feet per year. The well has been tested and is fully functional. It hasn't been used yet for augmenttation.

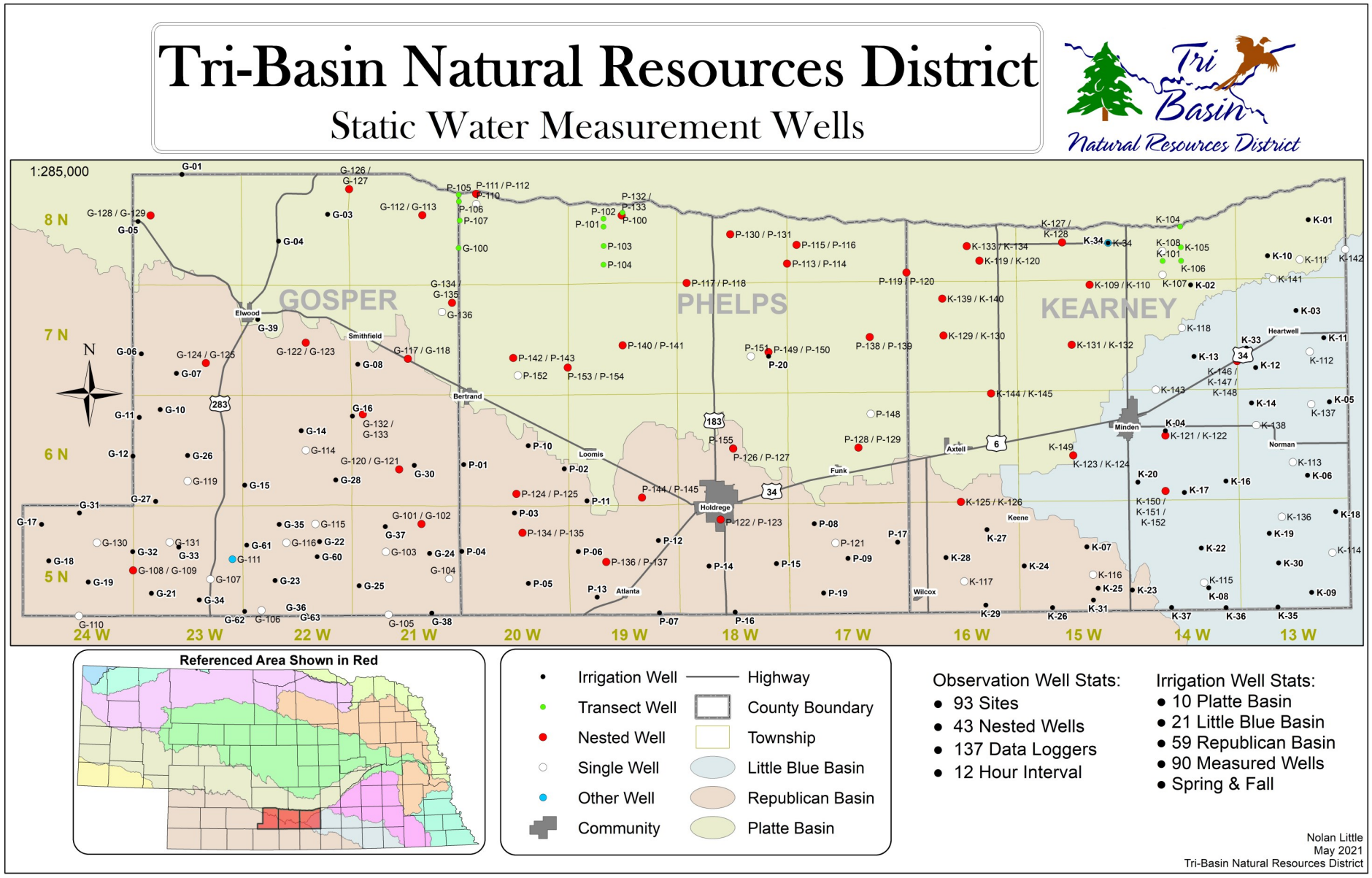
Tri-Basin NRD records indicate that 1,872.38 irrigated acres are enrolled in USDA Conservation Reserve Enhancement Program (CREP) in the Republican Basin portion of the district.

On district water use reports, landowners reported to TBNRD that conservation tillage practices have been adopted or continue to be utilized on 70,605.68 certified irrigated acres in the Republican Basin portion of the district during 2020 (no-till data is available from the Tri-Basin NRD office). University research (Klocke, et al, 2009) indicates that evapotranspiration (ET) is reduced by as much as 3 inches per acre on minimally tilled irrigated cropland, as compared to conventional tillage systems. If the estimates of no-till acres are accurate, as much as 17,651.25 acre-feet of water was conserved in the Republican Basin in TBNRD in 2020 through this conservation practice.

XI. GROUNDWATER LEVELS

TBNRD has an extensive network of 140 dedicated groundwater observation wells (45 in the Republican Basin) and 90 irrigation wells (60 in the Republican Basin) that are used to measure groundwater levels (see **Map 2**, page 9). TBNRD also works cooperatively with CNPPID to gather groundwater level data. Data from 10 wells in the Republican Basin that are measured by CNPPID are included in TBNRD's groundwater observation well data base. District water level data is reported semi-annually to U.S. Geological Survey and UNL Conservation and Survey Division. Groundwater level data for the district is available from the Tri-Basin NRD office.

Map 2: Dedicated Groundwater Observation Wells



Appendix A: Tri-Basin NRD – Republican Basin

Tri-Basin Natural Resources District
New Well and Conditional Replacement Well Permit
Applicant Certification and Agreement

Applicant Certification and Agreement to be bound by Conditions and Limitations on operation of a Well permitted as a New Well or as a Conditional Replacement Well pursuant to Rule 1.13, Tri-Basin Natural Resources District Rules and Regulations for Management of Land and Water Resources

NRD Permit # _____ Applicant _____

Applicant is the owner of the following- described real estate:

_____ ¼ Section _____ T _____ N - R _____ W

******

Applicant accepts and agrees to be bound by the following conditions and limitations on the operation of a well that is constructed under the authority of a permit issued by the Tri-Basin Natural Resources District ("NRD"). The conditions and limitations are (check the box and initial those that apply):

1. ☐ _____ Applicant agrees to offset any "new depletions" to streamflows of the Platte River, Little Blue River, Republican River, or their tributaries that may be determined to be associated with use of this well. Applicant agrees to use methods to offset those depletions that are deemed acceptable by the NRD and the State of Nebraska. Applicant understands and agrees that Applicant's failure to offset said new depletions may result in closure of this well or restrictions being imposed by the NRD on the number of acres of land that can be irrigated by this well.

2. ☐ _____ Applicant agrees to abide by well spacing and pumping capacity limitations that apply to the well that is the subject of this permit, whether such limitations arise pursuant to federal or state law or by rule or regulation of the NRD. Applicant understands and agrees that Applicant's failure to comply with all rules and regulations of the NRD that pertain to this well may result in closure of this well and civil or criminal prosecution and other penalties.

3. ☐ _____ Applicant agrees to comply with all current and future rules and regulations of the NRD that pertain to this well. Applicant understands and agrees that Applicant's failure to comply with all rules of regulations of the NRD that pertain to this well may result in closure of this well and civil or criminal prosecution and other penalties.

4. ☐ _____ Applicant agrees to maintain any and all surface water rights associated with the land to be irrigated by this well for the lifespan of the permitted well. Applicant understands and agrees that Applicant's failure to comply with all rules and regulations of the NRD that pertain to this well may result in closure of this well and civil or criminal prosecution and other penalties.

5. ☐ _____ Applicant agrees to irrigate only land that has been certified for irrigation by the NRD (no new irrigated acres will be allowed). Applicant understands and agrees that Applicant's failure to prevent irrigation of land not certified for irrigation by the NRD may result in closure of this well and prosecution by the State of Nebraska.

Applicant certifies that Applicant is familiar with the information contained in this instrument and that to the best of Applicant's knowledge and belief, such information is true, complete and accurate. Applicant further acknowledges and agrees that the NRD and/or the State of Nebraska may impose additional conditions, limitations and restrictions on operation of the well that is the subject of this permit. Applicant further acknowledges and agrees that the conditions and limitations agreed to herein shall also be binding upon Applicant's successors-in-interest to the well and/or the subject real estate.

Appendix A: Tri-Basin NRD – Republican Basin

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete and accurate. I further acknowledge that Tri-Basin Natural Resources District or the State of Nebraska may impose additional conditions, limitations and restrictions on operation of the well that is the subject of this permit.

Date	Signature of Applicant
Date	Signature of Applicant
Date	Signature of Witness

Approval by Tri-Basin Natural Resources District

Date	Signature of Tri-Basin NRD Representative

Version 2 11/21/2013

Tri-Basin NRD Republican Basin Water Use					Kearney County		
YEAR	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Certified Irrigated Acres	41,365.04	41,346.16	41,349.75	41,370.75	41,369.50	41,403.11	**41,403.11**
Pivots							
Actual Reported Acres	24,765.78	24,650.91	25,014.85	31,018.14	31,190.1	30,659.10	32,319.00
Gallons Used	3,748,611,721	6,060,475,376	7,037,163,570	5,486,469,797	4,713,924,522	3,331,595,134	9,934,337,498
Average acre Inches	5.57	9.05	10.36	6.51	5.6	4.00	11.32
Gravity							
Actual Reported Acres	3,817.91	3,584.80	3,458.16	2,624.22	2,169.7	1,858.60	2,360.80
Gallons Used	1,004,222,115	1,610,758,519	1,902,782,114	896,621,660	726,021,399	576,820,423	1,413,985,050
Average acre Inches	9.69	16.55	20.26	12.58	12.3	11.40	22.06
Combination							
Actual Reported Acres	9,834.82	10,367.16	10,052.32	4,977.82	4,968.2	5,075.90	5,171.50
Gallons Used	1,662,313,886	2,655,672,700	2,938,231,843	970,126,131	820,374,310	568,830,323	1,529,432,009
Average acre Inches	6.22	9.43	10.76	7.18	6.1	4.13	10.89
Drip Tape							
Actual Reported Acres	37.00	37.00	37.00	37.00	37.0	82.00	37.00
Gallons Used	7,942,200	18,391,400	12,882,000	9,601,700	8,759,500	13,702,512	15,770,700
Average acre Inches	7.91	18.31	12.82	9.56	8.7	6.15	15.70
Total Irrigation Use							
Actual Reported Acres	38,455.51	38,639.87	38,562.33	38,657.18	38,365.08	37,675.60	39,888.30
Gallons Used	6,423,089,922	10,345,297,995	11,891,059,527	7,362,819,288	6,269,079,731	4,490,948,392	12,893,525,257
Average acre Inches	6.15	9.86	11.36	7.01	6.02	4.39	11.90
Misc [gallons used]							
Wildlife Areas		104,039,000	10,227,000	58,700,000	52,748,000	8,000	
Other Uses					40,459		
Total Gallons Used	**6,423,089,922**	**10,449,336,995**	**11,901,286,527**	**7,421,519,288**	**6,321,868,191**	**4,490,956,392**	**12,893,525,257**

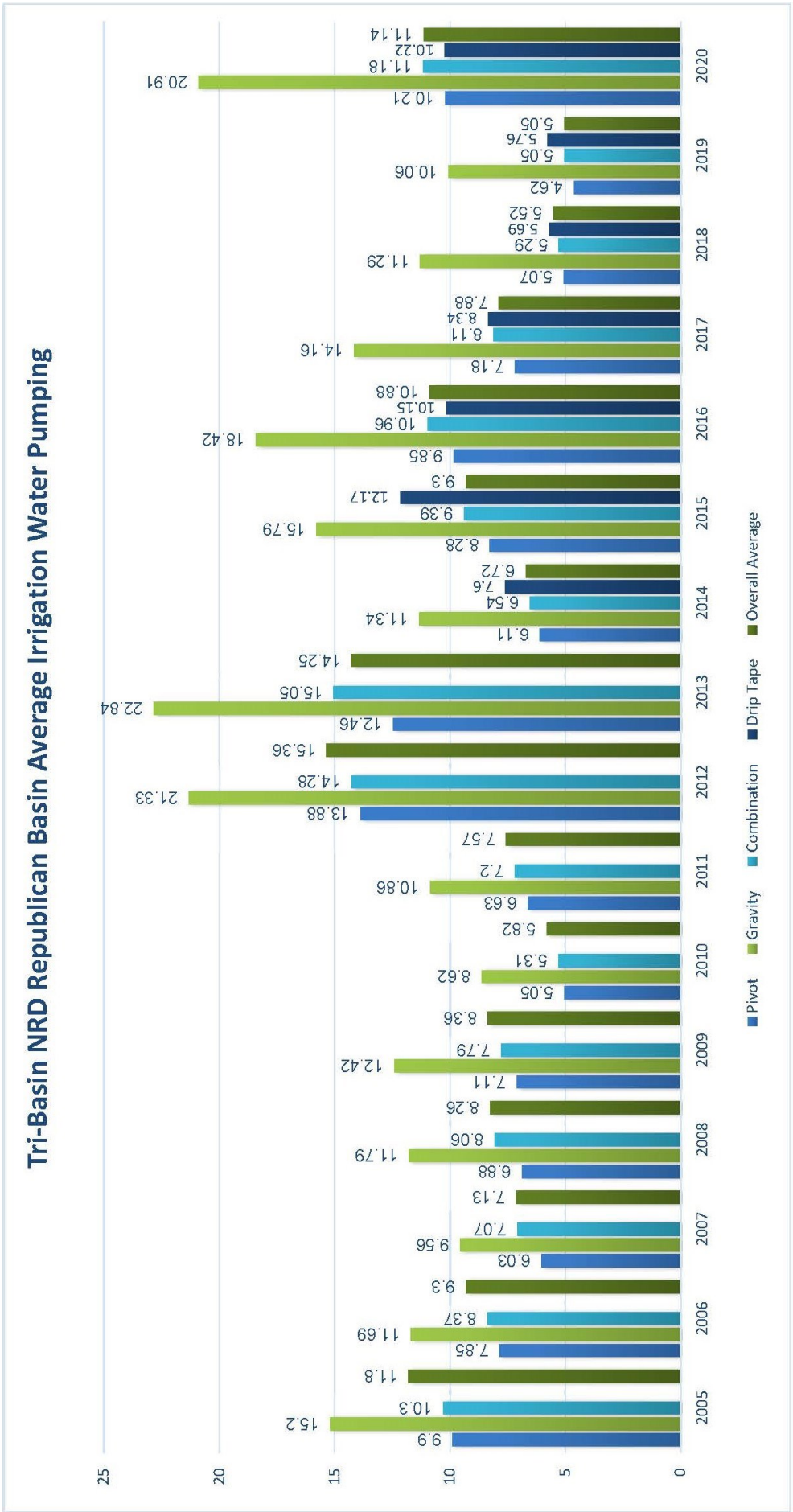
Tri-Basin NRD Republican Basin Water Use						Phelps County	
YEAR	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Certified Irrigated Acres	90,650.57	90,814.58	90,823.25	90,822.02	91,180.93	91,186.60	**91,236.21**
Pivots							
Actual Reported Acres	50,670.04	51,898.96	53,338.05	55,447.14	55,100.54	56,220.80	56,882.10
Gallons Used	8,303,306,913	11,443,663,774	15,208,478,608	10,910,834,987	6,762,281,160	7,482,177,323	15,603,732,760
Average acre Inches	6.03	8.12	10.50	7.25	4.52	4.90	10.10
Gravity							
Actual Reported Acres	7,431.08	7,894.43	7,652.13	6,145.48	5,529.48	5,184.00	5,960.70
Gallons Used	2,358,776,689	3,343,075,013	4,134,425,635	2,295,801,707	1,765,607,050	1,504,333,084	3,461,445,077
Average acre Inches	11.69	15.60	19.90	13.76	11.76	10.69	21.39
Combination							
Actual Reported Acres	22,523.31	23,976.76	23,270.96	22,411.53	22,387.63	21,745.80	22,997.00
Gallons Used	3,596,843,384	5,701,876,965	7,562,355,869	4,819,237,536	2,958,296,992	3,141,038,609	6,985,259,208
Average acre Inches	5.88	8.76	11.97	7.92	4.87	5.32	11.19
Drip Tape							
Actual Reported Acres	435.40	435.40	670.40	732.40	732.40	856.00	733.40
Gallons Used	79,980,790	133,860,021	189,132,035	155,429,742	100,822,467	135,178,288	200,010,610
Average acre Inches	6.76	11.32	10.39	7.82	5.07	5.82	10.04
Total Irrigation Use							
Actual Reported Acres	81,059.83	84,205.55	84,931.54	84,736.55	83,750.05	84,006.60	86,573.20
Gallons Used	14,338,907,776	20,622,475,773	27,094,392,147	18,181,303,972	11,587,007,669	12,262,727,304	26,250,447,655
Average acre Inches	6.51	9.02	11.75	7.90	5.10	5.38	11.17
Misc [gallons used]							
Wildlife Areas		14,106,000	45,054,000	58,903,200	43,286,200	21,822,300	96,073,100
Other Uses						5,000	349,200
Total Gallons Used	**14,338,907,776**	**20,636,581,773**	**27,139,446,147**	**18,240,207,172**	**11,630,293,869**	**12,284,554,604**	**26,346,869,955**

Tri-Basin NRD Republican Basin Water Use						Gosper County	
YEAR	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Certified Irrigated Acres	57,631.53	57,808.36	57,809.99	57,689.54	57,710.19	57,710.03	**57,495.14**
Pivots							
Actual Reported Acres	34,731.48	34,890.31	35,728.47	36,932.09	36,354.3	35,626.34	36,422.80
Gallons Used	6,214,034,271	7,540,338,329	8,270,724,930	7,646,156,083	5,415,780,801	4,561,602,106	9,304,414,461
Average acre Inches	6.59	7.96	8.53	7.62	5.5	4.72	9.41
Gravity							
Actual Reported Acres	5,313.43	4,590.33	4,193.53	3,398.67	3,371.67	3,183.67	3,600.60
Gallons Used	1,735,788,826	1,936,717,927	1,618,658,819	1,485,661,126	900,908,023	712,867,325	1,892,260,153
Average acre Inches	12.03	15.54	14.21	16.10	9.84	8.25	19.35
Combination							
Actual Reported Acres	14,543.61	14,714.00	14,829.31	14,498.23	14,483.43	13,409.90	14,731.30
Gallons Used	3,063,979,197	4,145,559,266	3,830,557,883	3,437,938,742	2,228,362,381	1,809,296,480	4,508,068,545
Average acre Inches	7.76	10.38	9.51	8.73	5.67	4.97	11.27
Drip Tape							
Actual Reported Acres	360.77	360.77	510.37	538.76	538.76	622.80	623.80
Gallons Used	84,044,100	123,091,700	133,466,835	131,221,335	92,376,011	95,243,727	171,248,794
Average acre Inches	8.58	12.57	9.63	8.97	6.31	5.63	10.11
Total Irrigation Use							
Actual Reported Acres	54,949.29	54,555.41	55,261.68	55,367.75	54,748.12	52,842.71	55,378.50
Gallons Used	11,097,846,394	13,745,707,222	13,853,408,466	12,700,977,286	8,637,427,217	7,179,009,638	15,875,991,953
Average acre Inches	7.44	9.28	9.23	8.45	5.81	5.00	10.56
Misc [gallons used]							
Wildlife Areas		76,368,100					
Other Uses					201,000		
Total Gallons Used	**11,097,846,394**	**13,822,075,322**	**13,853,408,466**	**12,700,977,286**	**8,637,628,217**	**7,179,009,638**	**15,875,991,953**

Tri-Basin NRD Republican Basin Water Use						Republican Basin	
YEAR	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Certified Irrigated Acres	189,647.14	189,969.10	189,982.99	189,882.31	190,260.62	190,299.74	**190,134.46**
Pivots							
Actual Reported Acres	110,167.30	111,440.18	114,081.37	123,397.37	122,644.94	122,506.24	125,623.90
Gallons Used	18,265,952,905	25,044,477,479	30,516,367,107	24,043,460,867	16,891,986,484	15,375,374,563	34,842,484,719
Average acre Inches	6.11	8.28	9.85	7.18	5.07	4.62	10.21
Gravity							
Actual Reported Acres	16,562.42	16,069.56	15,303.82	12,168.37	11,070.87	10,226.27	11,922.10
Gallons Used	5,098,787,630	6,890,551,459	7,655,866,568	4,678,084,493	3,392,536,472	2,794,020,832	6,767,690,280
Average acre Inches	11.34	15.79	18.42	14.16	11.29	10.06	20.91
Combination							
Actual Reported Acres	46,901.74	49,057.92	48,152.59	41,887.58	41,839.28	40,231.60	42,899.80
Gallons Used	8,323,136,467	12,503,108,931	14,331,145,595	9,227,302,409	6,007,033,683	5,519,165,412	13,022,759,762
Average acre Inches	6.535280715	9.39	10.96	8.11	5.29	5.05	11.18
Drip Tape							
Actual Reported Acres	833.17	833.17	1,217.77	1,308.16	1,308.16	1,560.80	1,394.20
Gallons Used	171,967,090	275,343,121	335,480,870	296,252,777	201,957,978	244,124,527	387,030,104
Average acre Inches	7.60	12.17	10.15	8.34	5.69	5.76	10.22
Total Volume Pumped							
Actual Reported Acres	174,464.63	177,400.83	178755.55	178,761.48	176,863.25	174,524.91	181,840.00
Gallons Used	**31,859,844,092**	**44,713,480,990**	**52,838,860,140**	**38,245,100,546**	**26,493,514,617**	**23,932,685,334**	**55,019,964,865**
Basin IPA	6.73	9.28	10.89	7.88	5.52	5.05	11.14
Wildlife Acres	0	194,513,100	55,281,000	117,603,200	96,034,200	21,830,300	96,073,100
Other Use [Non Irrigation]	0	0	0	0	241,459	5,000	349,200
Basin Total Gallons Used	**31,859,844,092**	**44,907,994,090**	**52,894,141,140**	**38,362,703,746**	**26,589,790,276**	**23,954,520,634**	**55,116,387,165**
Basin Acre Feet	**97,774.271**	**137,817.573**	**162,326.159**	**117,730.815**	**81,601.070**	**73,513.724**	**169,145.98**
Harlan County Acres							342.20
Harlan County Wells				19,580,400	20,133,900	17,748,400	
* Lower Republican Reports volume on these wells							

Tri-Basin NRD Republican Basin Water Use						Union Township	
YEAR	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Certified Irrigated Acres	8,184.02	8,163.02	8,164.49	8,167.47	8,169.29	8,169.29	8,169.29
Pivots							
Actual Reported Acres	7029.67	7176.67	7,156.70	7,224.67	7,007.70	6,941.00	6,802.90
Gallons Used	955,549,803	1,290,179,868	1,650,537,892	1,439,253,491	1,107,044,683	1,024,037,708	1,767,525,855
Average acre Inches	5.0	6.6	8.50	7.34	5.82	5.43	9.57
Gravity							
Actual Reported Acres				45.00	45.00	45.00	45.00
Gallons Used				10,749,400	8,066,600	6,333,100	11,486,400
Average acre Inches				8.80	6.60	5.18	9.40
Combination							
Actual Reported Acres	462.8	462.8	462.80	462.80	417.00	171.00	426.00
Gallons Used	46,298,000	71,712,700	64,802,400	59,907,800	37,224,800	24,930,100	73,908,300
Average acre Inches	3.7	5.7	5.20	4.77	3.29	5.37	6.39
Drip Tape							
Actual Reported Acres							
Gallons Used							
Average acre Inches							
Total Irrigation Use							
Actual Reported Acres	7,492.47	7,639.47	7,619.50	7,732.47	7,469.70	7,157.00	7,273.90
Gallons Used	1,001,847,803	1,361,892,568	1,715,340,292	1,509,910,691	1,152,336,083.00	1,055,300,908	1,852,920,555
Average acre Inches	**4.92**	**6.57**	**8.29**	**7.19**	**5.68**	**5.43**	**9.38**

Appendix B: Tri-Basin NRD – Republican Basin Annual Report



Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2006 Dates of Recharge Diversion	1/24/06 to 2/13/06	8/8/06 to 2 /13/06	12/22/06 to 12/31/06
Elwood Reservoir Diversions			
AF, in	6131	627	
$/af			
$/other			
Notes	gravity, Appears to be no charges	gravity, Appears to be no charges	gravity, JO costs, NGPC was billed for 50% of the JO costs
Elwood Releases			
AF, in			
$/af			
$/other			
Notes			
E65 Canal			
AF, in			
$/af			
$/other			
Notes			
Phelps Canal			
AF, in			
$/af			
$/other			
Notes			
Funk Lagoon			
AF, in			
$/af			
Notes			
Funds			
Total $	N/A	N/A	$16,752.44
PRRIP			
NDNR			
TBNRD			
NGPC			$16,752.44

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2007 Dates of Recharge Diversion	5/30/07 to 6/25/07	7/9/07 to 7/11/07	7/31/07 to 8/8/07
Elwood Reservoir Diversions			
AF, in			
$/af			
$/other			
Notes	gravity, JO costs	gravity, Not billed	gravity, JO Costs
Elwood Releases			
AF, in			
$/af			
$/other			
Notes			
E65 Canal			
AF, in			
$/af			
$/other			
Notes			
Phelps Canal			
AF, in			
$/af			
$/other			
Notes			
Funk Lagoon			
AF, in			
$/af			
Notes			
Funds			
Total $	$57,819.51	N/A	$17,686.39
PRRIP			
NDNR			
TBNRD			
NGPC	$57,819.51		$17,686.39

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2008-2009 Dates of Recharge Diversion	5/23/08 to 6/11/08	7/18/08 to 7/21/08	8/10/08 to 8/19/08	6/21/09 to 8/21/09
Elwood Reservoir Diversions				
AF, in				
$/af				
$/other				
Notes	4240 af gravity, 2543 pumped, $ pump & hydro	pumped, $pump & hydro	gravity, $ for hydro offset	diversions stopped once irrigation decision was made
Elwood Releases				
AF, in				
$/af				
$/other				
Notes				
E65 Canal				
AF, in				
$/af				
$/other				
Notes				
Phelps Canal				
AF, in				
$/af				
$/other				
Notes				
Funk Lagoon				
AF, in				
$/af				
Notes				
Funds				
Total $	$66,568.32	$12,878.02	$10,498.40	$25,572.80
PRRIP				
NDNR				
TBNRD	$33,284.16	$6,439.01	$5,249.20	$12,786.40
NGPC	$33,284.16	$6,439.01	$5,249.20	$12,786.40

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2012-2013 Dates of Recharge Diversion	9/28/11 to 1/5/12	12/4/12 to 3/11/13	9/19/13 to 10/31/13					
Elwood Reservoir Diversions								
AF, in			12385					
$/af			35					
$/other								
Notes			Pumped					
Elwood Releases								
AF, in								
$/af								
$/other								
Notes								
E65 Canal								
AF, in				2615				
$/af				35				
$/other								
Notes				Canal to NP 23.7-3.2, Cottonwood WPA, and 36.2S				
Phelps Canal								
AF, in						3890	2000	3897
$/af						25	25	NA
$/other								
Notes						down to MP 13.3	Funk Lagoon	Phelps below 13.3 to 51.1 plus 19.1, 38.6. No payment for these diversions.
Funk Lagoon								
AF, in								
$/af								
Notes								
Funds								
Total $	$138,954.00	$102,200.00	$433,475.00	$91,525.00	$97,250.00	$50,000.00	NA	
PRRIP	$69,477.00	$102,200.00			$48,625.00	$50,000.00		
NDNR	$41,686.20		$260,085.00	$54,915.00	$29,175.00			
TBNRD	$27,790.80		$173,390.00	$36,610.00	$19,450.00			
NGPC								

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2014 Dates of Recharge Diversion	6/10/14 to 7/7/14	11/26/14 to 11/30/14			12/9/14 to 12/27/14		11/26/14 to 12/31/14
Elwood Reservoir Diversions							
AF, in	13237	1763	37		8309.2		
$/af	39	39	NA		41		
$/other							
Notes	Pumped, 15,000 af contract with amendment	Pumped, finished con-tract 11-26 to 11-30	Not billed but pumped into Elwood		Pumped, 5000 af contract + 5000 af am-mendment		
Elwood Releases							
AF, in							
$/af							
$/other							
Notes							
E65 Canal							
AF, in				70		567.1	
$/af				NA		38	
$/other							
Notes				Not billed, part of Elwood filling, down to MP 5.9		down to MP 20.1	
Phelps Canal							
AF, in							2346
$/af							27
$/other							
Notes							down to MP 13.3
Funk Lagoon							
AF, in							
$/af							
Notes							
Funds							
Total $	$516,243.00	$68,757.00	NA	NA	$340,677.20	$21,549.80	$63,339.30
PRRIP							$31,669.65
NDNR	$258,121.50	$34,378.50			$170,338.60	$10,774.90	$31,669.65
TBNRD	$258,121.50	$34,378.50			$170,338.60	$10,774.90	
NGPC							

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2015 (cont.) Dates of Recharge Diversion	11/23/15 to 12/18/15			11/16/15 to 12/31/15		12/19/15 to 2/1/16
Elwood Reservoir Diversions						
AF, in	3227		5776			
$/af	42.6		42.6			
$/other						
Notes	For NDNR/ TBNRD, 11-16-15 Agreement for 4500 af total Canal and Elwood		For PRRIP, May 2015 Agree-ment and Amendment No 1			
Elwood Releases						
AF, in						1119
$/af						
$/other						
Notes						Released from Elwood to E65 Canal. Subtracted from NDNR/State El-wood Acct for recharge in E65 Canal, No charge in the contract
E65 Canal						
AF, in					1273	
$/af					39.5	
$/other						
Notes					For NDNR/ TBNRD, 11-16 -15 Agree-ment for 4500 af total Canal and Elwood, down to MP 20.1	
Phelps Canal						
AF, in				747.5	2243	
$/af				28.1	28.1	
$/other						
Notes				down to MP 13.3, 25% of diversions for NDNR, 11-18-15 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 11-26-14 Agreement	
Funk Lagoon						
AF, in						
$/af						
Notes						
Funds						
Total $	$137,599.28	$50,308.96	$246,288.64	$20,989.80	$62.969.40	NA
PRRIP			$246,288.64		$62.969.40	
NDNR	$68,799.64	$25,154.48		$20,989.80		
TBNRD	$68,799.64	$25,154.48				
NGPC						

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2016 (Cont. on pg. 48) Dates of Recharge Diversion	1/1/16 to 2/14/16		3/16/16 to 4/13/16		3/16/16 to 3/20/16		9/15/16 to 12/31/16	
Elwood Reservoir Diversions								
AF, in								
$/af								
$/other								
Notes								
Elwood Releases								
AF, in								
$/af								
$/other								
Notes								
E65 Canal								
AF, in			500	28				
$/af			41.1					
$/other								
Notes			Fullfills 3-17-16 agreement (ammendment NO.1), down to MP 20.1	Not Billed, excess diversion as part of 500 af agreement				
Phelps Canal								
AF, in	489.25	1467.75	157.5	472.5			1080.5	3241.4
$/af	29.2	29.2	29.2	29.2			29.2	29.2
$/other								
Notes	down to MP 13.3, 25% of diversions for NDNR, 11-18-15 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 12-11-15 Agreement	down to MP 13.3, 25% of diversions for NDNR, 11-18-15 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 12-11-15 Agreement			down to MP 13.3, 25% of diversions for NDNR, 9-20-2016 Agreement	down to MP 13.3, 75% of diversions for PRRIP, 9-26-2016 Agreement
Funk Lagoon								
AF, in								
$/af								
Notes								
Funds								
Total $	$14,286.10	$42,858.30	$4,599.00	$13,797.00	$20,550.00	NA	$31,550.60	$94,648.88
PRRIP		$42,858.30		$13,797.00				$94,648.88
NDNR	$14,286.10		$4,599.00		$10,275.00		$31,550.60	
TBNRD					$10,275.00			
NGPC								

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2016 (Cont.) Dates of Recharge Diversion	12/10/16 to 12/31/16			12/9/16 to 12/31/16	
Elwood Reservoir Diversions					
AF, in	1152	2880	1728		
$/af	44.4	44.4	44.4		
$/other					
Notes	For TBNRD, 12-7-2016 Agreement with $127,036 limit for TBNRD and 60% NDNR/40% TBNRD split	For TBNRD, 12-7-2016 Agree-ment with $127,036 limit for TBNRD and 60% NDNR/40% TBNRD split	For NDNR, 12-7-2016 Agreement with $190,554 limit for NDNR and 60% NDNR/40% TBNRD split		
Elwood Releases					
AF, in					
$/af					
$/other					
Notes					
E65 Canal					
AF, in				335.9	503.8
$/af				41.1	41.1
$/other					
Notes				For TBNRD, 12-7-2016 Agreement with $127,036 limit for TBNRD and 60% NDNR/40% TBNRD split, Water down to MP 19.3	For NDNR, 12-7-2016 Agreement with $190,554 limit for NDNR and 60% NDNR/40% TBNRD split, Water down to MP 19.3
Phelps Canal					
AF, in					
$/af					
$/other					
Notes					
Funk Lagoon					
AF, in					
$/af					
Notes					
Funds					
Total $	$51,091.20	$127.728.00	$76,636.80	$13,805.49	$20,706.18
PRRIP		$127.728.00			
NDNR			$76,636.80		$20,706.18
TBNRD	$51,091.20			$13,805.49	
NGPC					

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2017 (Cont. on pg. 50) Dates of Recharge Diversion	1/1/17 to 1/30/17		1/1/17 to 1/31/17	1/1/17 to 2/14/17		1/1/17 to 2/14/17	1/1/17 to 2/14/17	9/15/17 to 10/12/17	
Elwood Reservoir Diversions									
AF, in	1631.6	2447.4							
$/af	45.7	45.7							
$/other									
Notes	For TBNRD, 1-23-17 Amendment for $164,800 limit.	For NDNR, 1-23-17 Amendment for $247,200 limit.							
Elwood Releases									
AF, in									
$/af									
$/other									
Notes									
E65 Canal									
AF, in				599.4	899.1				
$/af				42.3	42.3				
$/other									
Notes				For TBNRD, 1-23-17 Amendment for $164,800 limit. Water to MP 19.3	For NDNR, 1-23-17 Amendment for $247,200 limit. Water to MP 19.3				
Phelps Canal									
AF, in						338.50	1015.40	1353.50	451.20
$/af						30.1	30.1	30.1	30.1
$/other									
Notes						down to MP 13.3, 25% of diversions for NDNR, 9-20-2016 Agreement, 2,666 af limit	down to MP 13.3, 75% of diversions for PRRIP, 9-26-2016 Agreement, 8,000 af limit	down to MP 13.3, 75% of diversions for PRRIP, 10-20-17 Agreement	down to MP 13.3, 25% of diversions for NDNR, 9-20-2016 Agreement, 2,666 af limit
Funk Lagoon									
AF, in									
$/af									
Notes									
Funds									
Total $	$74,531.49	$111,797.23	$208,789.58	$25,372.60	$38,058.90	$10,182.08	$30,543.23	$40,713.28	$13,572.10
PRRIP			$208,789.58				$30,543.23	$40,713.28	
NDNR		$111,797.23			$38,058.90	$10,182.08			$13,572.10
TBNRD	$74,531.49			$25,372.60					
NGPC									

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2017 (Cont.) Dates of Recharge Diversion	11/28/17 to 12/22/17	12/15/17 to 12/22/17				12/1/17 to 12/31/17	
Elwood Reservoir Diversions							
AF, in	6953.6	657.5	986.3				
$/af	45.7	50.7	50.7				
$/other							
Notes	For PRRIP,10-20-17 Agreement, 8,000 af limit, All diversion to PRRIP until 12-15-17 when NDNR/ TBNRD signed agreement, then 50%/50% split with them	For TBNRD, 12-15-17 Agreement, 50/50 split with PRRIP and then 40% of that split to TBNRD, 13,500 af limit for State and TBNRD combined	For NDNR, 12-15-17 Agreement, 50/50 split with PRRIP and then 60% of that split to State, 13,500 af limit for State and TBNRD combined				
Elwood Releases							
AF, in							
$/af							
$/other							
Notes							
E65 Canal							
AF, in				66.6	100		
$/af				42.3	42.3		
$/other							
Notes				For TBNRD, 12-15-17 Agreement, Contract No. 1024, 40% split to TBNRD, 60% to NDNR, 13,500 af limit for State and TBNRD combined	For NDNR, 12-15-17 Agreement, Contract No. 1024, 60% of that split to NDNR, 40% split to TBNRD, 13,500 af limit for State and TBNRD combined		
Phelps Canal							
AF, in						1317.70	439.20
$/af						30.1	30.1
$/other							
Notes						down to MP 13.3, 75% of diversions for PRRIP, 10-20-17 Agreement	down to MP 13.3, 25% of diversions for NDNR, 9-20-2016 Agreement, 2,666 af limit
Funk Lagoon							
AF, in							
$/af							
Notes							
Funds							
Total $	$317,640.45	$33,322.10	$49,985.68	$2,819.18	$4,233.00	$39,636.42	$13,211.14
PRRIP	$317,640.45					$39,636.42	
NDNR			$49,985.68		$4,233.00		$13,211.14
TBNRD		$33,322.10		$2,819.18			
NGPC							

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2018 (Cont. on pg. 52) Dates of Recharge Diversion	1/3/18 to 3/22/18		1/5/18 to 2/8/18			1/1/18 to 2/12/18
Elwood Reservoir Diversions						
AF, in			3854.9	1542	2313	
$/af			47.1	52.2	52.2	
$/other						
Notes			For PRRIP,10-20-17 Agreement, 8,000 af limit,1-8-18 Ammend-ment took limit to 12,000 af, 50%/50% split with NDNR/ TBNRD	For TBNRD, 12-15-17 Agreement, 50/50 split with PRRIP and then 40% of that split to TBNRD, 13,500 af limit and/or $362,948 limit for State and TBNRD combined	For NDNR, 12-15-17 Agreement, 50/50 split with PRRIP and then 60% of that split to State, 13,500 af limit and/or $362,948 limit for State and TBNRD combined	
Elwood Releases						
AF, in						
$/af						
$/other						
Notes						
E65 Canal						
AF, in	360.5	540.8				
$/af	43.6	43.6				
$/other						
Notes	For TBNRD, 12-15-17 Agreement, Contract No. 1024, 40% split to TBNRD, 60% to NDNR, 13,500 af limit for State and TBNRD combined. Diversions down to MP 19.3	For NDNR, 12-15-17 Agreement, Contract No. 1024, 60% of that split to NDNR, 40% split to TBNRD, 13,500 af limit for State and TBNRD combined. Diversions down to MP 19.3				
Phelps Canal						
AF, in						1066.00
$/af						31
$/other						
Notes						10-20-17 Agreement. No agreement with NDNR, PRRIP got all diversions. Diversions down to MP 13.3. NOTE: Total diverions were reduced by 200 af for water left in the Phelps Canal at the start of irrigation sea-son.
Funk Lagoon						
AF, in						
$/af						
Notes						
Funds						
Total $	$15,717.80	$23,578.88	$181,373.05	$80,492.40	$120,738.60	$33,024.68
PRRIP			$181,373.05			$33,024.68
NDNR		$23,578.88			$120,738.60	
TBNRD	$15,717.80			$80,492.40		
NGPC						

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2018 (Cont.) Dates of Recharge Diversion	11/19/18 to 12/31/18	11/21/18 to 12/20/18	11/22/18 to 12/20/18	12/3/18 to 12/31/18		
Elwood Reservoir Diversions						
AF, in				11061		
$/af				47.1		
$/other						
Notes				11-26-18 SWA Ammendment No. 2, took limit to 30,000 af. All for PRRIP. NDNR and TBNRD wanted the remainder of their contract in E65 Canal		
Elwood Releases						
AF, in						
$/af						
$/other						
Notes						
E65 Canal						
AF, in					196.8	295.1
$/af					43.6	43.6
$/other						
Notes					Contract 1024, for TBNRD, down to MP 19.3	Contract 1024, for NDNR, down to MP 19.3
Phelps Canal						
AF, in	2191.80	1001.00				
$/af	31	31				
$/other						
Notes	10-27-19 WSA w/ PRRIP, Diversions down to MP 13.3	11-15-17 WPA WSA with TBNRD, from MP 13.3 to MP 34.2.				
Funk Lagoon						
AF, in			1952.4			
$/af			25.5			
Notes			11-15-17 WPA WSA with TBNRD, Delivery to Funk Lagoon			
Funds						
Total $	$67,901.96	$31,010.98	$49,786.20	$520,401.23	$8,580.48	$12,866.36
PRRIP	$67,901.96			$520,401.23		
NDNR						$12,866.36
TBNRD		$31,010.98	$49,786.20		$8,580.48	
NGPC						

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

Dates of Recharge Diversion	1/1/19 to 1/24/19	1/1/19 to 1/28/19	1/1/19 to 1/31/19	
Elwood Reservoir Diversions				
AF, in				
$/af				
$/other				
Notes				
Elwood Releases				
AF, in				
$/af				
$/other				
Notes				
E65 Canal				
AF, in			297	445.5
$/af			44.9	44.9
$/other				
Notes			Contract 1024 w/ 1-7-19 Ammendment, for TBNRD, down to MP 19.3	Contract 1024 w/ 1-7-19 Ammendment, for NDNR, down to MP 19.3
Phelps Canal				
AF, in	712.1			
$/af	31.9			
$/other				
Notes	10-27-19 WSA w/ PRRIP, Diversions down to MP 13.3			
Funk Lagoon				
AF, in				
$/af				
Notes				
Funds				
Total $	$22,723.11	$347.879.80	$13,338.27	$20,007.41
PRRIP	$22,723.11	$347.879.80		
NDNR				$20,007.41
TBNRD			$13,338.27	
NGPC				

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2019 (Cont. on pg. 60 & 61) Dates of Recharge Diversion	1-1-19 to 1-24-19	1-1-19 to 1-28-19	1-1-19 to 1-31-19	
Elwood Reservoir Diversions				
AF, in		7178.7		
$/af		48.46		
$/other				
Notes		11-26-18 SWA Ammendment No. 2, took limit to 30,000 af. All for PRRIP. NDNR and TBNRD wanted the remainder of their contract in E65 Canal		
Elwood Releases				
AF, in				
$/af				
$/other				
Notes				
E65 Canal				
AF, in			297	445.5
$/af			44.91	44.91
$/other				
Notes			Contract 1024 w/ 1-7-19 Amendment, for TBNRD, down to MP 19.3	Contract 1024 w/ 1-7-19 Amendment, for NDNR, down to MP 19.3
Phelps Canal				
AF, in	712.10			
$/af	31.91			
$/other				
Notes	10-20-17 WSA w/ PRRIP, Diversions down to MP 13.3			
Funk Lagoon				
AF, in				
$/af				
Notes				
Funds				
Total $	$ 22,723.11	$ 347,879.80	$ 13,338.27	$20,007.40
PRRIP	$ 22,723.11	$ 347,879.80		
NDNR				$20,007.40
TBNRD			$ 13,338.27	
NGPC				

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2019 (Cont.) Dates of Recharge Diversion	5-10-19 to 5-16-19			5-10-19 to 5-20-19
Elwood Reservoir Diversions				
AF, in	941.3	123.2	184.9	
$/af	48.46	53.77	53.77	
$/other				
Notes	For PRRIP. 11-26-18 SWA Ammendment No. 2 , took limit to 30,000 af for PRRIP. 1-3-19 WSA Amendment to 1024 extends cost cap to $402,247 for TBNRD-NDNR. 50% split until TBNRD-NDNR full then all to PRRIP. These deliveries fullfilled both ammendments.	For TBNRD. 11-26-18 SWA Amendment No. 2 , took limit to 30,000 af for PRRIP. 1-3-19 WSA Amendment to 1024 extends cost cap to $402,247 for TBNRD-NDNR. 50% split until TBNRD-NDNR full then all to PRRIP. These deliveries fullfilled both ammendments. TBNRD 40%, NDNR 60% of their 50% of total diversions	For NDNR. 11-26-18 SWA Ammendment No. 2 , took limit to 30,000 af for PRRIP. 1-3-19 WSA Amendment to 1024 extends cost cap to $402,247 for TBNRD-NDNR. 50% split until TBNRD-NDNR full then all to PRRIP. These deliveries fullfilled both ammendments. TBNRD 40%, NDNR 60% of their 50% of total diversions	
Elwood Releases				
AF, in				
$/af				
$/other				
Notes				
E65 Canal				
AF, in				
$/af				
$/other				
Notes				
Phelps Canal				
AF, in				
$/af				
$/other				
Notes				
Funk Lagoon				
AF, in				
$/af				
Notes				
Funds				
Total $	$ 45,615.40	$ 6,624.46	$ 9,942.07	$ 6,557.12
PRRIP	$ 45,615.40			
NDNR			$ 9,942.07	
TBNRD		$ 6,624.46		$ 6,557.12
NGPC				

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2019 (Cont.) Dates of Recharge Diversion	7-9-19 to 7-29-19	9-12-19 to 9-28-19	12-16-19 to 12-31-19	12-16-19 to 12-31-19	12-20-19 to 12-31-19
Elwood Reservoir Diversions					
AF, in	4955.2	5463.9			
$/af	48.46	48.46			
$/other					
Notes	For PRRIP. 6-24-19 WSA (30,000 af limit annualy)	For PRRIP. 6-24-19 WSA (30,000 af limit annualy)			
Elwood Releases					
AF, in					
$/af					
$/other					
Notes					
E65 Canal					
AF, in			250.4	375.6	
$/af			44.91	44.91	
$/other					
Notes			E65 Canal recharge down to MP 23.7-0.3-TBNRD under contract #1150, 60/40 split TBNRD/DNR	E65 Canal recharge down to MP 23.7-0.3 -DNR under contract #1150, 60/40 split TBNRD/DNR	
Phelps Canal					
AF, in					
$/af					
$/other					
Notes					
Funk Lagoon					
AF, in					
$/af					
Notes					
Funds					
Total $	$ 240,128.99	$ 264,780.59	$ 11,245.46	$ 16,868.20	$ 12,101.63
PRRIP	$ 240,128.99	$ 264,780.59			
NDNR				$ 16,868.20	
TBNRD			$ 11,245.46		$ 12,101.63
NGPC					

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2020 Dates of Recharge Diversion	1-1-20 to 2-14-20	1-1-20 to 2-14-20	1-1-20 to 2-23-20	3-19-20 to 4-14-20	3-26-20 to 4-14-20	
Elwood Reservoir Diversions						
AF, in						
$/af						
$/other						
Notes						
Elwood Releases						
AF, in						
$/af						
$/other						
Notes						
E65 Canal						
AF, in	465.5	698.3			253.9	380.8
$/af	46.26	46.26			46.26	46.26
$/other						
Notes	E65 Canal re-charge down to MP 23.7-0.3-TBNRD under contract #1150, 60/40 split TBNRD/DNR	E65 Canal re-charge down to MP 23.7-0.3 -DNR under contract #1150, 60/40 split TBNRD/DNR			E65 Canal re-charge down to MP 23.7-0.3-TBNRD under contract #1150, 60/40 split TBNRD/DNR	E65 Canal re-charge down to MP 23.7-0.3 -DNR under contract #1150, 60/40 split TBNRD/DNR
Phelps Canal						
AF, in				910.40		
$/af				32.87		
$/other						
Notes				9-25-19 WSA w/ PRRIP, Diversions down to MP 13.3		
Funk Lagoon						
AF, in						
$/af						
Notes						
Funds						
Total $	$21,534.03	$32,303.36	$30,766.20	$29,924.85	$11,745.41	$17,615.81
PRRIP				$29,924.85		
NDNR		$32,303.36				$17,615.81
TBNRD	$21,534.03		$30,766.20		$11,745.41	
NGPC						

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2020 (Cont.) Dates of Recharge Diversion	7-20-20 to 9-22-20	9-21-20 to 9-22-20	11-17-20 to 12-3-20		Total
Elwood Reservoir Diversions					
AF, in					35731.2
$/af					
$/other					
Notes					
Elwood Releases					
AF, in					0
$/af					
$/other					
Notes					
E65 Canal					
AF, in					0
$/af					
$/other					
Notes					
Phelps Canal					
AF, in		20.90	1054.40		0.00
$/af		32.87	32.87		
$/other					
Notes		9-25-19 WSA w/PRRIP, Diversions down to MP 13.3	9-25-19 WSA w/ PRRIP, Diversions down to MP 13.3		
Funk Lagoon					
AF, in					0
$/af					
Notes					
Funds					
Total $	NA	$686.98	$34,658.13		$0.00
PRRIP		$686.98	$34,658.13		$2,474,063.04
NDNR					$4,805,557.16
TBNRD					$3,892,154.61
NGPC					$1,663,764.56

Appendix D: Tri-Basin NRD Water Conservation Incentive Program

3/12/19

Introduction: The Tri-Basin NRD Water Conservation Incentive Program (WCIP) is intended to address two natural resources management issues: ensuring sustainability of groundwater supplies and protecting streamflows from diminishment due to groundwater pumping. The goal of this voluntary program is to reduce groundwater pumping and increase irrigation water use efficiency in Tri-Basin NRD.

The Program: Tri-Basin will allow landowners to enroll up to 8000 NRD-certified irrigated acres in the program. The enrollment period will be from March 26 through April 19, or until the program acre enrollment limit is reached. Once the enrollment limit is reached, water savings to the district could reach 650 acre-feet per year. Incentives in this program will likely be most attractive to landowners in phase two and phase three groundwater quantity management areas, so the water-use reductions should be greatest where the need is greatest (there are approximately 30,000 certified irrigated acres in Tri-Basin's phase two and phase three townships).

In exchange for their participation, landowners will be paid for the equivalent of one acre-inch of water credit per acre per year, with the opportunity to sell additional credits to the NRD at a set price. In addition to NRD purchases, landowners will have the opportunity to sell water credits on the open market at any agreed-upon price (private transactions require NRD board approval). Tri-Basin will maintain an "electronic bulletin board" to facilitate connections between buyers and sellers. Landowners will also be granted flexibility to irrigate any acres within enrolled parcels and to share (pool) allocations between parcels. Pooling agreements will be required to enable sharing allocations between parcels under different ownership.

The Contract: The NRD and the landowner will sign a five-year agreement. The agreement commits the landowner to limiting water use (allocation) on parcels that they select. The allocation will be equal to the UNL average corn crop consumptive irrigation requirement, which is nine inches per acre per year in Kearney County, ten inches per acre per year in Phelps County and eleven inches per acre per year in Gosper County (allocation will be limited to current allocation of nine inches per acre per year in Union Township in Gosper County). Landowners will be required to have flowmeters installed on all wells serving participating parcels and to report water use annually to the NRD. Tri-Basin NRD will offer cost share on flowmeters for participants. Tri-Basin NRD will spot check flowmeter readings on 20% of participating parcels annually. As a condition of their participation, landowners will agree to subject enrolled parcels to (most of) the same rules that apply to all landowners in Phase three groundwater quantity management areas. An instrument will be filed with the county clerk recording these contracts, to provide notice to potential buyers of water use limitations associated with program participation.

In exchange for their participation, the NRD agrees to buy one acre-inch per acre per year from every acre enrolled in the contract. Landowners will have two payment options: an annual payment of $5 per acre-inch credit for one acre-inch per year, or payment at the end of the contract period for up to five acre-inches of credits per acre (assuming the landowner has that much unused allocation) at a rate of $4 per acre-inch. The NRD may also choose to purchase additional credits from participants. NRD purchases of additional acre-inches will be prioritized in Groundwater Quantity Management Phase 2 and Phase 3 areas and 50%+ stream depletion zones. The NRD will have the right of first refusal to purchase unused allocations from landowners, so landowners would need NRD board approval before they make private sales.

Landowners will also have the option to irrigate any and all acres within participating parcels. They can also pool acre-inches between parcels under the same ownership (pooling water credits associated with parcels under different ownership, but the same management will

Appendix C: CNPPID Groundwater Recharge Diversions Summary - 2020 Republican Basin

2015 (cont. on 46) Dates of Recharge Diversion	1/1/15 to 2/14/15		1/14/15 to 1/21/15		5/11/15 to 8/24/15		
Elwood Reservoir Diversions							
AF, in			1028.8		6800		9007
$/af			42.6		42.6		42.6
$/other							
Notes			Finished out 10,000 af contract, pumped		For NDNR/ TBNRD,finished out Amend-ments No 1 thru No 4 (Total 17,000 AF)		For PRRIP
Elwood Releases							
AF, in							
$/af							
$/other							
Notes							
E65 Canal							
AF, in				94.9		200	
$/af				39.5		39.5	
$/other							
Notes				in Canal to MP 5.9		Into Cotton-wood WPA, part of Amend-ment No 1	
Phelps Canal							
AF, in	1654	543.7					
$/af	28.1	28.1					
$/other							
Notes	down to MP 13.3, up to 4000 af, then PRRIP to get 100%	down to MP 13.3, PRRIP only					
Funk Lagoon							
AF, in							
$/af							
Notes							
Total $	$46,447.13	$15,267.10	$43,868.03	$3,750	$289,952.00	$7,904.00	$384,058.48
PRRIP	$23,223.56	$15,267.10					$384,058.48
NDNR	$23,223.56		$21,934.02	$1,875.22	$144,976.00	$3,950.00	
TBNRD			$21,934.02	$1,875.22	$144,976.00	$3,950.00	
NGPC							

require a separate NRD-approved pooling agreement). Pools are only allowed for multiple parcels in the same basin and with the same groundwater quantity management phase status. Water use will be deducted from landowner water credit "accounts."

If a producer overuses their allocation, they will need to purchase credits from other landowners to eliminate their deficit. Otherwise they will be prohibited from irrigating enrolled parcels until the deficit is eliminated. The only way a landowner can cancel a contract would be to pay the NRD for the full contracted amount (refund any payments that we've already made to them and pay the NRD the amount we would have paid them at the end of the contract period).

Terminology

Accounts- An account will track the number of acre-inches of water available for pumping on a parcel. Each parcel will have a separate account, unless landowners form pool accounts.
Allocations- Allocation amounts would be based on estimated safe yields from aquifers that would not result in long-term declines in groundwater levels. An initial allocation will be equal to the University of Nebraska's average annual irrigation water consumption requirement for corn (that amount is nine inches per acre in Kearney County, ten inches per acre in Phelps County and eleven inches per acre in Gosper County).
Credits (Water Use Credits)- Credits are accumulated on a per-NRD-certified irrigated acre per-parcel basis. Allocation credits are granted at the beginning of each allocation period.
Debits- Debits would be made against accounts based on actual pumping or water credits marketed and sold to the NRD or other water users.

ATTACHMENT D
NeDNR Report

CONTENTS

I. INTRODUCTION

This report is intended to satisfy the Nebraska Department of Natural Resources' (NeDNR's) tracking and reporting requirements as described in the "Monitoring and Studies" section of the integrated management plan (IMP) for those portions of the Tri-Basin Natural Resources District (NRD) located within the Republican River Basin. This report has been filed annually following the adoption of the IMP in June 2012. The IMP requires that NeDNR track and report on the following items on an annual basis:

a) Any surface water permits issued;
b) Any dam safety permits issued;
c) Any groundwater transfer permits issued;
d) Reports of water diverted and, when available, water stored by surface water users; and
e) The associated offsets for any new permits issued.

This report covers activities that occurred from January 1, 2020, to December 31, 2020. Data from streamgages within Tri-Basin NRD are also provided with this report along with calculations of streamflow depletions using the Republican River Compact Administration (RRCA) model.

The information contained in this report will assist in measuring the success of the IMP in meeting its goals and objectives.

II. ACTIVITIES TO BE REPORTED ANNNUALLY

A. Summary

Items reported annually include any surface water or groundwater permitting activity occurring during the reporting period, including surface water use data. The NeDNR field offices use pump-site inspections of surface water appropriations to monitor surface water use when time and conditions allow.

B. NeDNR Permitting

In 2020, NeDNR did not issue any new surface water permits, dam safety permits, nor any new groundwater transfer permits in the Republican River Basin portion of the Tri-Basin NRD.

C. Water Diverted by Surface Water Users

In 2020, no water was reported as having been diverted from natural flow for irrigation purposes. Insufficient streamflow at irrigation time, not needing to irrigate due to sufficient rainfall, or using groundwater instead of surface water were reasons cited for not irrigating with surface water rights in 2020.

There are no Federal reservoirs or non-Federal reservoirs with capacities greater than 200 AF within the Republican River Basin region of Tri-Basin NRD. Evaporation from small reservoirs (capacity to store 15 to 200 AF) is estimated on an annual basis to comply with the RRCA. The total estimated net evaporation for small reservoirs in the Republican River Basin portion of the Tri-Basin NRD for 2020 was 260 AF. Net evaporation is calculated by multiplying the presumptive average annual surface area of each small reservoir by the net evaporation measured at the nearest United States Bureau of Reclamation reservoir climate and evaporation station. The presumptive average annual surface area of each small reservoir is 25% of the area at the principal spillway elevation, as measured in 2012. The presumptive average surface area may change from year to year based on evaluations by the Dam Safety section of NeDNR.

D. Associated Depletion Offsets

No offsets were necessary in 2020.

E. Estimated Depletions

There is no information to include on estimated depletions from permitted new or expanded water use or accretions from associated offsets for 2020.

III. STREAMGAGE DATA

Data for streamgages located on Muddy Creek at the Furnas-Gosper County line, Muddy Creek at Arapahoe, Turkey Creek at the Furnas-Gosper County line, and Turkey Creek at Edison, can be found in Figure 1. Please note that all data the following dates are provisional and may be subject to change upon further review: Turkey Creek at Edison, March 11, 2021–present; Turkey Creek at Furnas-Gosper County Line, February 6, 2021–present; Muddy Creek at Arapahoe and Muddy Creek at Furnas-Gosper County Line, January 1, 2021–present.

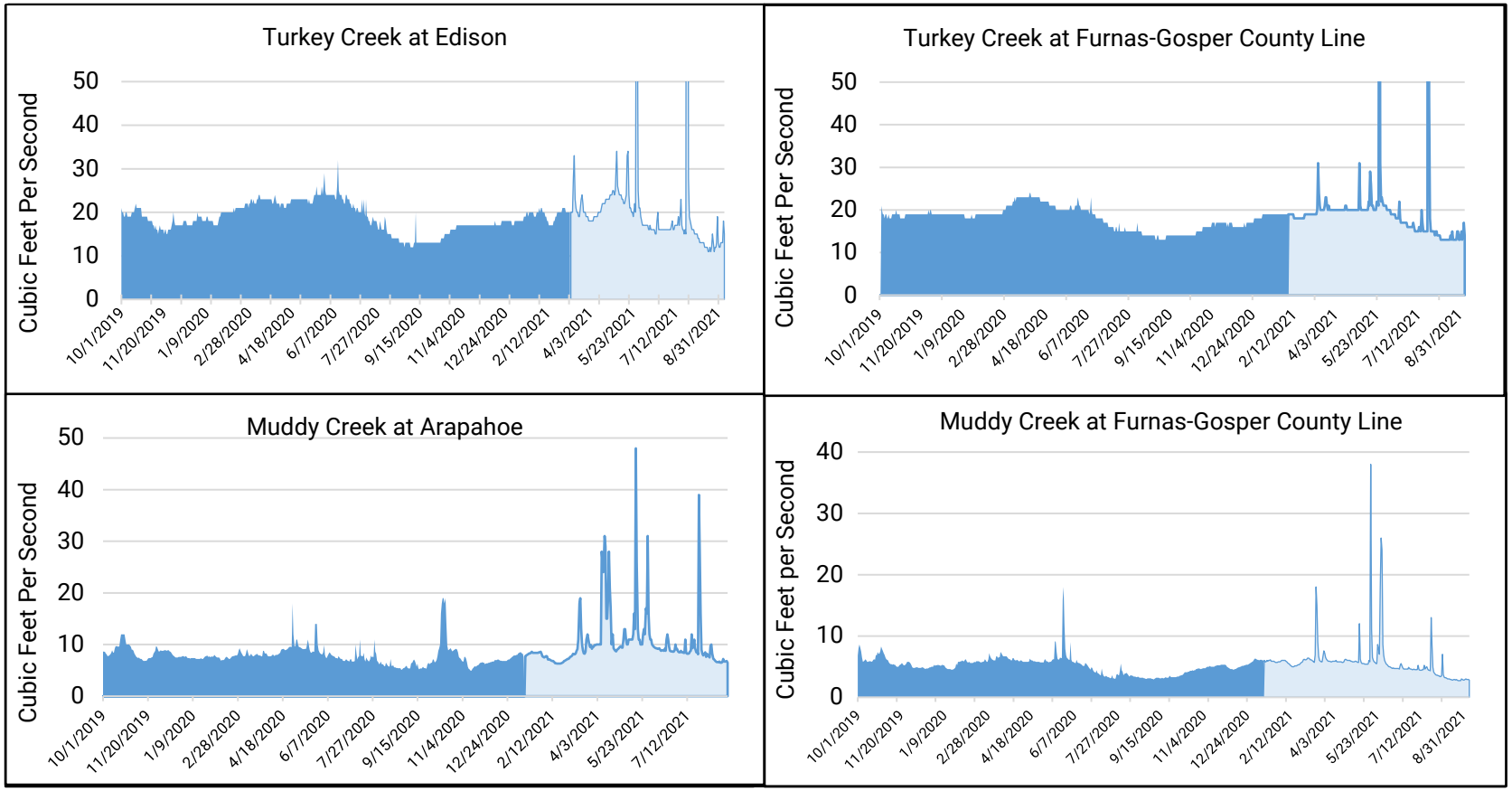


Figure 1. Measured flow at 4 streamgages in the Republican River Basin of Tri-Basin NRD. Data shown in dark blue are those that have been finalized since NeDNR's 2020 report. Data shown in light blue are preliminary. Due to high variability of flow, flows measured above 50 cfs were truncated at 50 cfs for visualization purposes. Streamgage data can be downloaded from https://nednr.nebraska.gov/RealTime/Gage/Index.

IV. STREAMFLOW DEPLETION CALCULATIONS

This section of the report includes information on the calculated depletions to streamflow due to groundwater pumping within the Tri-Basin NRD and the imported water credit (Table 1 and Figure 3). The data shown on in Table 1, Figure 2, and Figure 3 were calculated using the August 2020 RRCA accounting procedures. These calculations were completed using historical Tri-Basin NRD pumping data, groundwater mound, and recharge data as inputs to the RRCA groundwater model. Net effect to baseflow for each calendar year was calculated by totaling the imported water credit (mound accretions) and the streamflow depletion at the southern boundary of the Tri-Basin NRD. The net effects are summarized into a rolling three-year average to assess the progress towards achieving and sustaining a hydrologically balanced condition in accordance with the IMP. The three-year average net effect is positive for 2020 (Table 1 and Figure 3). In accordance with the IMP, these data will be used to assess the Tri-Basin NRD's progress to meet Goal A, Objective 1, of the IMP. In instances where the balance is negative, Tri-Basin NRD and NeDNR will set an objective for an offset up to 1000 acre-feet, and Tri-Basin NRD could begin augmentation pumping the same year. This report includes the final data approved by the RRCA through calendar year 2020.

Table 1. Calendar years 2012 to 2020 modeled streamflow depletion, mound accretion, and net effect to baseflow in acre-feet and previous three-year average net effect to baseflow for 2014 through 2020. A negative value represents depletion, and a positive value represents accretion.

Year	Streamflow Depletion (AF)	Mound Accretion (AF)	Net Effect (AF)	3-year Average Net Effect (AF)
2012	-8,783	10,674	1,891	--
2013	-9,174	9,476	302	--
2014	-9,588	9,455	-133	687
2015	-9,636	9,836	200	123
2016	-9,794	10,078	284	117
2017	-9751	10,256	505	330
2018	-10,089	11,203	1,114	634
2019	-10,717	12,931	2,214	1,278
2020	-10,457	12,298	1,841	1,723

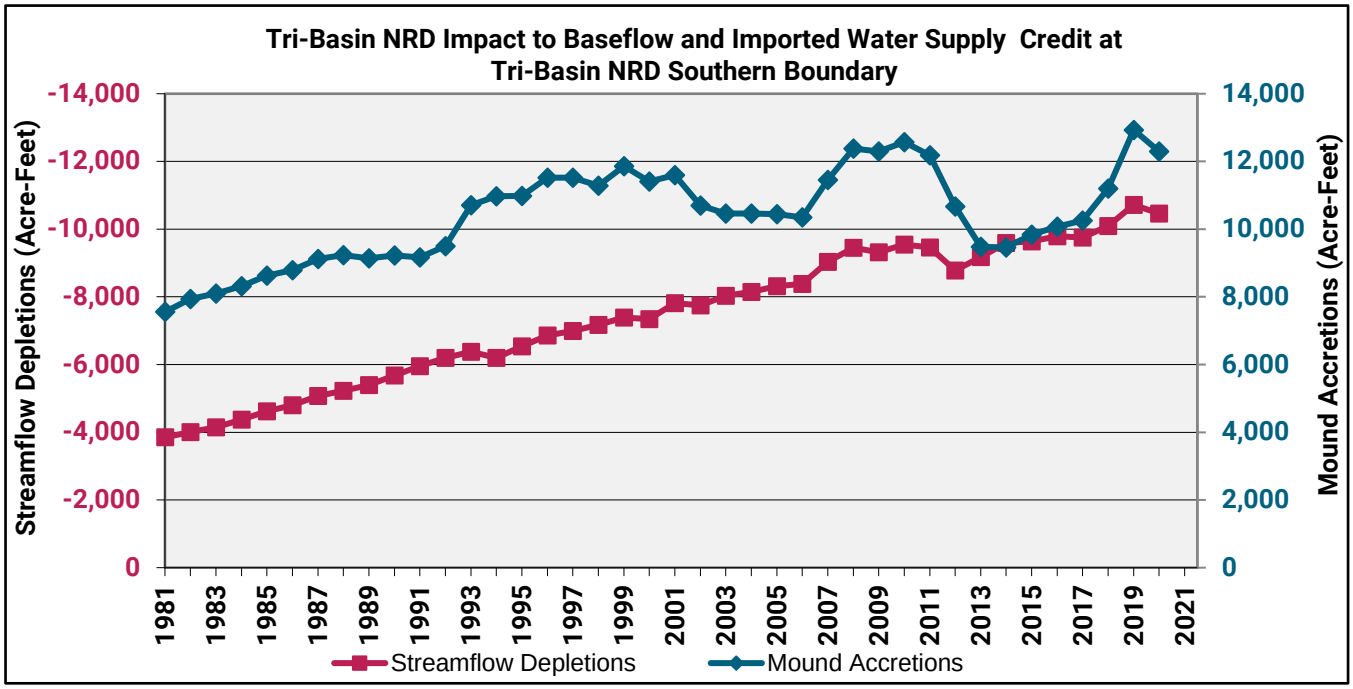


Figure 2. Modeled annual streamflow depletions and mound accretion for calendar years 1981 through 2020. These data were calculated using the August 2020 RRCA accounting procedures and the RRCA groundwater model. In order to show both streamflow depletions and mound accretions for comparison in one chart, the negative values on the left vertical axis pertain to the red line, representing stream depletion values, and positive values on the right vertical axis pertain to the blue line, representing mound accretions.

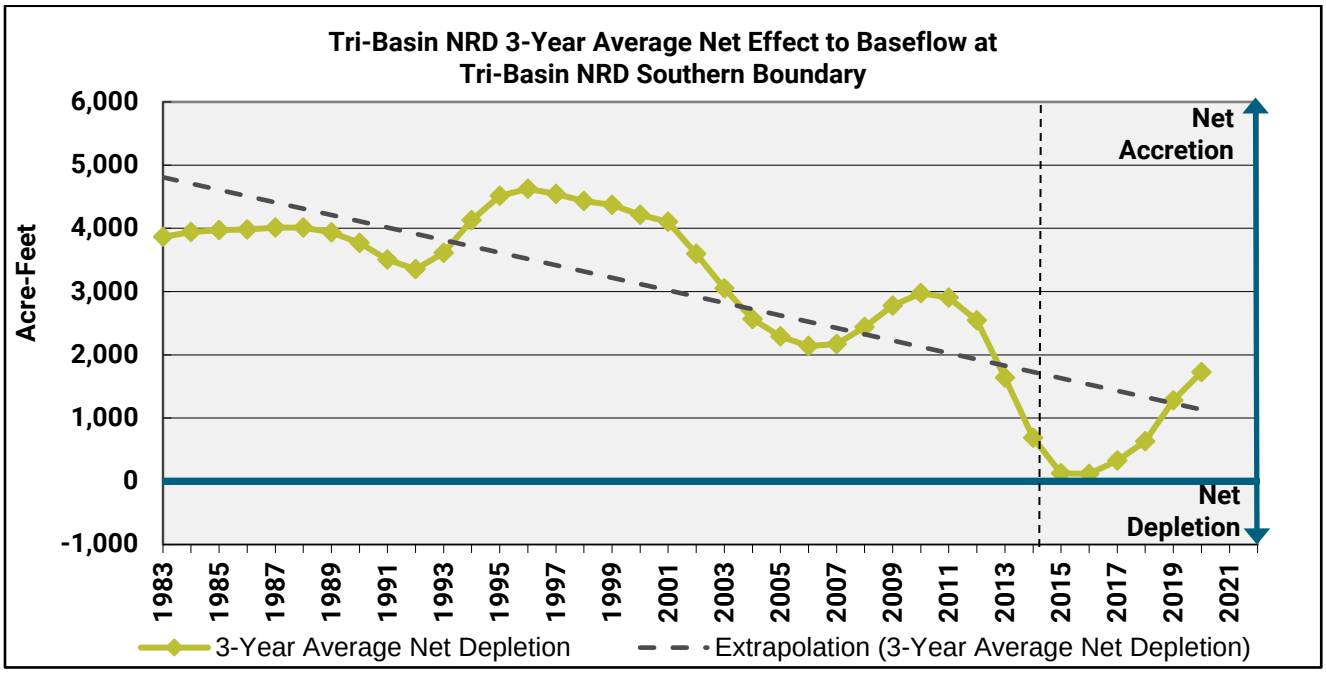


Figure 3. Rolling three-year average net effect to baseflow for calendar years 1981 through 2020, as the total of modeled values of streamflow depletion and mound accretions using the August 2020 RRCA Accounting Procedures and the RRCA groundwater model.

ATTACHMENT E
Projection Handout

Figures A and B show a range of possible outcomes for the mound credit and streamflow depletions for Tri-Basin Natural Resources District (TBNRD), projected forward from 2020 (dotted black line) based upon different potential hydrologic conditions. Figure A represents a dryer climate cycle, and Figure B represents more climate variation. Figure C shows net accretion for both modeled projections.

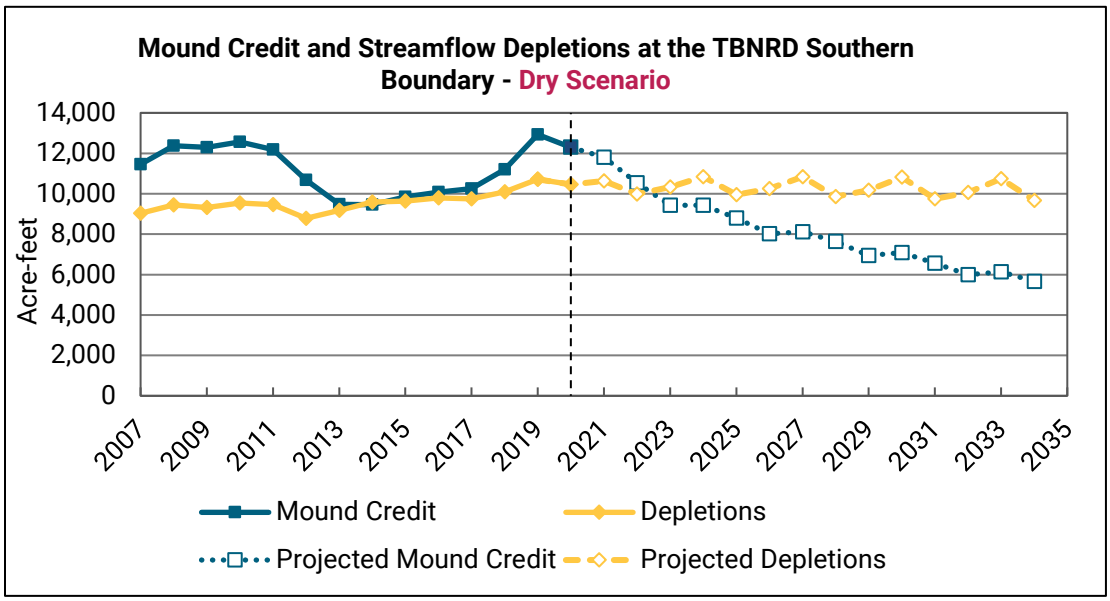


Figure A. Mound credit and groundwater depletions to streamflow (AF) at the TBNRD Southern Boundary. Data from 2011-2013 were projected forward from 2020 to represent a potential outcome under a dryer climate cycle.

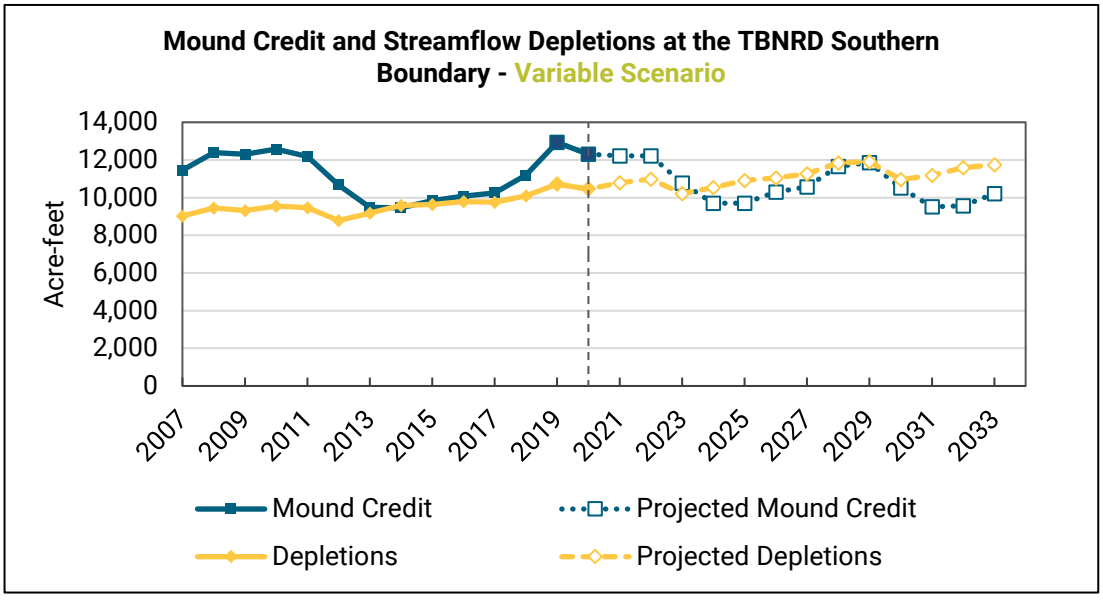


Figure B. Mound credit and groundwater depletions to streamflow (AF) at the TBNRD Southern Boundary. Data from 2010-2016 were projected forward from 2020 to represent a potential outcome under a variable climate cycle.

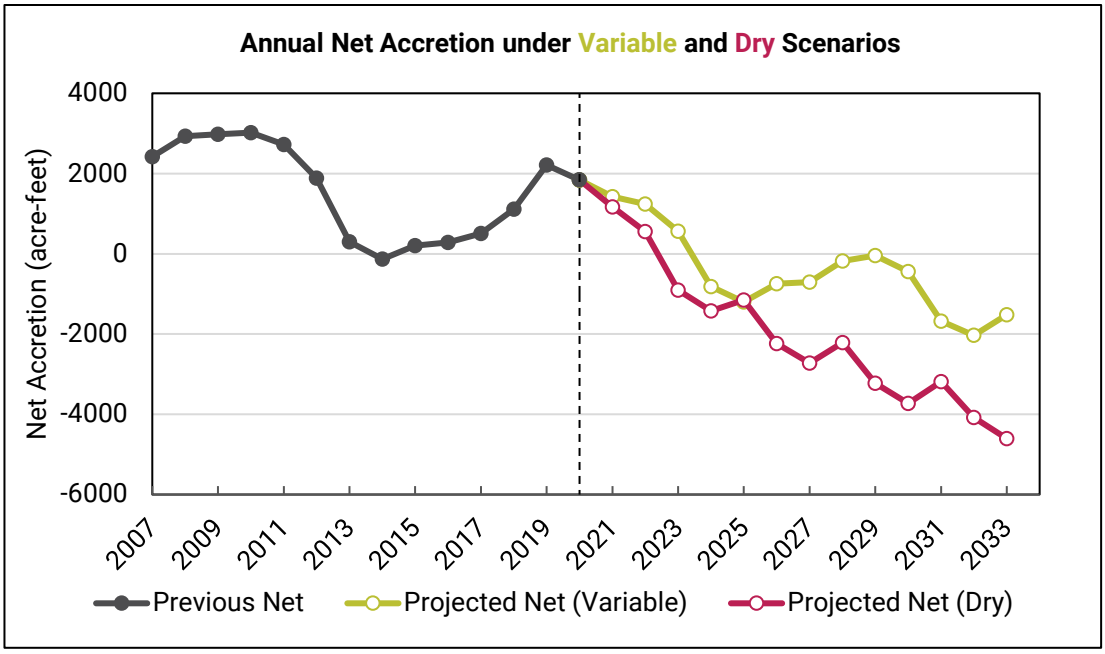


Figure C. Projected net accretion (AF) under variable and dry scenarios at the TBNRD Southern Boundary, calculated as the mound credit minus depletions for each of the two scenarios depicted in Figures A and B. The dry and variable projections are described in the captions for Figures A and B.

ATTACHMENT F
Marked-up Draft IMP

DRAFT Second Generation

INTEGRATED MANAGEMENT PLAN
For those portions of Tri-Basin NRD located within the Republican River Basin
Jointly Developed by
Tri-Basin Natural Resources District
and the
Nebraska Department of Natural Resources

Commented [CF1]: Formatting and editorial suggestions are listed at the end of this document

CHAPTER 1: EFFECTIVE DATE

Commented [CF2]: Add a Table of Contents, Glossary, and List of Abbreviations

I. This Integrated Management Plan (IMP) was adopted by the Tri-Basin Natural Resources District (Tri-Basin NRD) on ~~May 9, 2012~~MONTH DAY, 202X, and by the Nebraska Department of Natural Resources (NDNR) on MONTH DAY, 202X~~June 4, 2012~~. This IMP became effective on MONTH DAY, 202X~~July 1, 2012~~.

CHAPTER 2: INTRODUCTION

I. Tri-Basin NRD encompasses portions of the Republican, Platte and Little Blue River Basins (see map #1). Each of the three counties in the NRD also contains numerous non-tributary wetlands, known as "rainwater basins." Their watersheds range in size from a couple hundred acres up to the 28,000 acre Sacramento Creek basin. The district also contains a large area spanning portions of all three basins that is characterized by groundwater levels that are higher than historic "pre-development" groundwater elevations.

II. Tri-Basin NRD Mission Statement

Tri-Basin NRD's mission is to **"manage, conserve and protect the district's land and water resources."** This mission will be accomplished by protecting the quality and quantity of surface water and groundwater, reducing soil erosion and flooding, promoting agricultural best management practices, and through forestry and wildlife habitat preservation. These tasks can only be accomplished by working cooperatively with local residents and agencies of local, state and federal government.

III. Tri-Basin NRD and NDNR IMP Vision Statement

The vision (overall goal) for Tri-Basin NRD and the NDNR is to work cooperatively with district residents and others to promote good stewardship of land and water resources in a manner that strives to balance uses and supplies and protect existing users of groundwater and surface water for both the near term and long term.

CHAPTER 3: AUTHORITY AND BACKGROUND

I. Authority

The Republican Basin integrated management plan was jointly prepared by the Board of Directors of Tri-Basin Natural Resources District (Tri-Basin NRD) and the Nebraska Department of Natural Resources (NDNR) in accordance with Sections 46-715 through 46-720, R.S.Supp., 2004.

II. Background

The Republican River originates in eastern Colorado and traces a course through southern Nebraska on the way to its confluence with the Kansas River. The Republican River does not pass through Tri-Basin NRD, but approximately 40% of the district lies within the Republican watershed (see Map #1 in Appendix A). Several tributaries of the Republican originate in or pass through the district. Base flows in some of these tributaries (Muddy Creek, Elk Creek, Turkey Creek and Spring Creek) have increased through time, likely due to a rise in the groundwater table. This rise resulted primarily from delivery and irrigation with surface water from the Platte River by Central Nebraska Public Power and Irrigation District (CNPPID) and its customers in the Platte Basin in Gosper, Phelps and Kearney Counties. The increase in baseflows in these tributaries has been so significant that it has created annual credits in excess of 10,000 acre-feet annually in Republican Basin Compact Accounting for the State of Nebraska.

In 1943 the States of Colorado, Kansas and Nebraska, with the approval of Congress, entered into the Republican River Compact (hereinafter the Compact). The Compact provides for the equitable apportionment of the "virgin water supply" of the Republican River Basin. Following several years of dispute about Nebraska's consumptive use of water within the basin, Kansas filed an original action in the United States Supreme Court against the states of Nebraska and Colorado in 1998. After several rulings by the Court and it's Special Master and several months of negotiation, all three states entered into a comprehensive Settlement Agreement. That Agreement was approved by the Court on May 19, 2003 and the Special Master's final report approving the Joint Groundwater Model developed by all three states for use in computing stream flow depletions resulting from groundwater use was submitted to the Court on September 17, 2003.

In July, 1996, the Tri-Basin NRD and the other three Natural Resources Districts in the Republican River Basin, initiated a joint action planning process with the Department of Water Resources (DWR), a predecessor agency of NDNR, pursuant to then Section 46-656.28 of Nebraska statutes. In accordance with that process, DWR made a preliminary determination in 1996 that "there was reason to believe that the use of hydrologically connected ground water and surface water resources is contributing to or is in the reasonably foreseeable future likely to contribute to disputes over the Republican River Compact." When the studies required by Section 46-656.28 had been completed, NDNR issued its conclusions on May 20, 2003 in the form of a

Commented [CF3]: In the background section, add information about the following:

(1) The first generation IMP

(2) The Supreme Court decision, including how it changed how Imported Water Supply is calculated (since that is relevant to the hydrologically balanced assessment)

(3) The basin-wide plan (can probably use the wording from the intro in the other 3 republican IMPs, 5th generation)

report entitled: "Republican River Basin, Report of Preliminary Findings." Those conclusions included the following determination:

"Pursuant to Section 46-656.28 (this section was repealed by LB 962 in 2004) and the preliminary findings in this report, the NDNR determined that present and future Compact disputes arising out of the use of hydrologically connected ground water and surface water resources in the Republican River Basin can be eliminated or reduced through the adoption of a joint action plan."

Following four hearings on that report, NDNR made final the preliminary conclusions in the report and the four basin Natural Resources Districts were so informed. The Tri-Basin NRD and the other three Districts each then adopted orders to proceed with developing a joint action plan for integrated management of hydrologically connected surface water and ground water resources in the basin; preparation of a joint action plan for the Tri-Basin began soon thereafter. The objective of that joint action plan for the Republican River Basin portion of Tri-Basin is as follows:

> *"The key objective of the Plan is to maintain, at sufficient levels to offset depletions to the Republican River caused by ground water pumping within the Tri Basin NRD, the Republican River Compact credit (the "imported water credit" to the Republican Mainstem Basin that originates within the Tri-Basin NRD) that Nebraska receives because of discharges from the "ground water mound" to the surface water supplies in the Republican River Basin. To achieve this objective, the Tri Basin NRD will utilize the ground water management authorities available to it to maintain the water levels in its portion of that "ground water mound" at or above the average water levels for the years 1981 through 1985."*

This objective created the basis for creation of a joint action plan for the Republican River portion of the Tri-Basin NRD, as described in Neb. Rev. Stat. Sec. 46-720 (4) (a). Tri-Basin NRD and NDNR agreed on the objective for a joint action plan on July 13, 2004.

The Tri-Basin NRD and NDNR are modifying that original joint action plan and incorporating new goals and objectives into this integrated management plan pursuant to Neb. Rev. Stat. Sec. 46-720 (4) (a).

CHAPTER 4: MAP AND MANAGEMENT AREA BOUNDARIES

Commented [CF4]: I would suggest moving the map to this section of the plan

I. Maps depicting the district, its management areas, depletive effects of groundwater pumping on Republican Basin streamflows and river basins are located in Appendix A. The Tri-Basin NRD Board of Directors declared the entire district as an Integrated Water Management Area on July 16, 2004. The area subject to this IMP is the Republican Basin within Tri-Basin NRD (Map 1).

CHAPTER 5: REPUBLICAN BASIN IMP GOALS

I. Goals

Pursuant to Section 46-715, R.S. Supp., 2004, the goals and objectives of an integrated management plan must have as a purpose "sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare" of the residents of Tri-Basin Natural Resources District are assured for both the short term and long term. The following goals and objectives are adopted by the Tri-Basin NRD and the NDNR to achieve that purpose. The goals of the Tri-Basin NRD Republican Basin Integrated Management Plan are:

A. Tri-Basin NRD will assist the State of Nebraska, in cooperation with other Natural Resources Districts, in maintaining compliance with the Republican River Compact as adopted in 1943 and as implemented in accordance with the settlement approved by the United States Supreme Court on May 19, 2003 and other lawful interstate compacts, decrees and agreements relevant to management of the integrated water resources of the district. Furthermore, with respect to interstate compacts, agreements and court decrees, Tri-Basin NRD and NDNR agree:

1. That ground water and surface water users within Tri-Basin NRD will only be expected to reduce their water use or make up for depletions to streamflow if streamflow depletions are determined to be in excess of the imported water supply.
2. The Tri-Basin NRD and NDNR agree that any reductions in to streamflow depletions will not be required to exceed 2,000 acre-feet per year for the first ten years of this IMP.
3. That neither Tri-Basin NRD nor NDNR will require this integrated management plan to be amended solely for the purpose of changing the responsibility of water users within the Tri-Basin NRD due to the failure of other NRDs to implement or enforce their integrated management plans as needed to meet their share of the responsibility to keep Nebraska in compliance with these interstate agreements, and
4. That Tri-Basin NRD and NDNR will strive to ensure that any economic impacts resulting from Tri-Basin NRD and NDNR's management of Republican Basin virgin water supplies will be distributed in an equitable manner, minimizing to the extent possible, adverse economic, social and environmental consequences.

Commented [BJ5]: Mitigate? I don't think this has to be regulatory. I assume the standard is still the net depletions at their southern boundary.

Commented [CF6]: Modify. Discuss how this will change now that the first ten years have passed. Is 2,000 still a reasonable cap?

At a minimum, delete the part about the first ten years.

Commented [BJ7]: I'm not sure that the limit (2000 Af) is necessary now that we have experience with the net depletions calculations under the new RRCA methodology. Remember when this was written we were not sure if we would prevail on the 5-run solution. I think we can just focus on mitigating any net depletion (depletion-mound credit at the southern boundary)

Commented [BJ8]: Maybe could restate or reinforce this concept with language from the basin wide plan

B. Tri-Basin NRD and NDNR will continue to support the development and maintenance of digital water management models, databases, stream gauges, observation wells and other tools and facilities needed to accurately measure and clearly depict the current state of groundwater and surface water resources as well as potential future water resource trends and conditions. These tools will be essential for decision makers as they consider whether and how to regulate consumption of integrated water resources. They will also serve as one mechanism to monitor and measure the progress of this plan.

C. Tri-Basin and DNR will, with limited exceptions allowed by law, limit groundwater pumping within the Republican Basin portion of the NRD to 2005 levels.

CHAPTER 6: REPUBLICAN BASIN IMP OBJECTIVES

I. IMP Objectives

Tri-Basin NRD and NDNR agree to accomplish the following objectives for the Republican River Basin portion of the district in order to achieve the goals of this joint IMP.

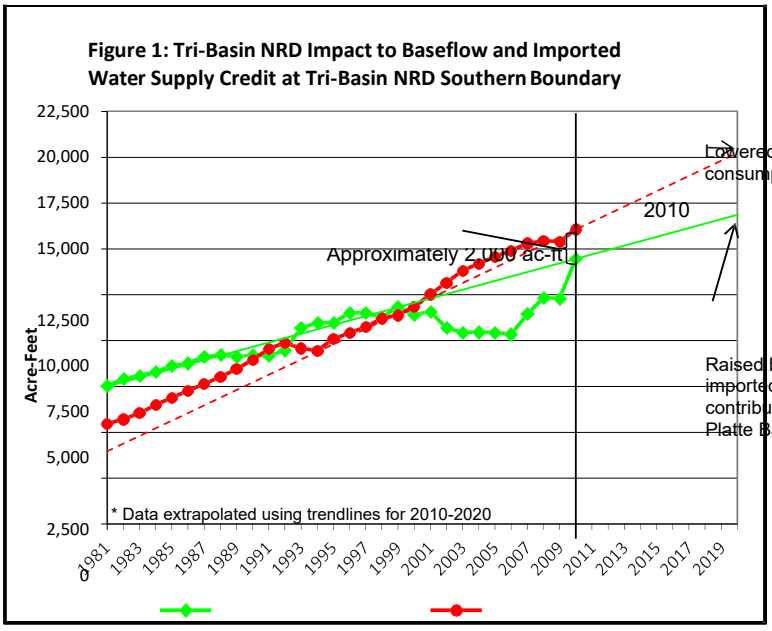
Goal A. Objectives

1. Revise existing NRD integrated water management rules and regulations, to the extent necessary, to insure that the NRD will incrementally achieve and sustain a hydrologically "balanced" condition so that, in combination with imported water contributions from the Platte basin, streamflow augmentation and other management actions, Tri-Basin NRD water users will not cause a net depletion to streamflow. Figure 1 shows Tri-Basin NRD's impact to baseflow in the Republican River Basin and the imported water mound credit. Under a hydrologically balanced condition in the context of this plan, baseflow impacts and the mound credit will be equal.

Commented [BJ9]: I'm fine with your suggested wordsmithing below. I don't think it changes the purpose/intent of this objective. We can see what John thinks

Commented [CF10]: Consider how this objective will need to change given that TBNRD is currently already in a hydrologically balanced condition, thanks to the change in how Imported Water Supply is calculated. Does it make sense to say that the NRD will "incrementally achieve" a hydrologically balanced condition, now that the NRD is already there?

Also, consider the definition and description of hydrologically balanced. Does it still make sense to say that under a hydrologically balanced condition, baseflow impacts and the mound will be equal? Or would something like "under a hydrologically balanced condition in the context of this plan, the mound credit will equal or exceed baseflow impacts"? "equal or exceed" seems to me to better fit the actual test done, and the description of "not cause a net depletion" earlier in this same paragraph.



Data Source: Republican River Compact Administration Groundwater Model utilizing analysis points at the southern boundary of the Tri-Basin NRD

2. Develop and implement plans, in collaboration with CNPPID, its customers and other affected water users, that continue and, to the extent possible, increase groundwater recharge and stream baseflow enhancement from Platte Basin surface water supplies in amounts sufficient to sustain existing groundwater uses and to maintain imported water contributions to the Republican River Basin.

3. Tri-Basin NRD will manage consumptive groundwater use to the greatest extent legally and physically practical in order to maintain groundwater levels at or above 1981-85 average levels.

4. Utilize methods outlined in Chapter 8 of this plan to evaluate streamflow depletions and mound accretions at the southern boundary of the Tri-Basin NRD.

Goal B Objectives

1. Develop and maintain the necessary analytical tools and other programs and projects needed to implement this IMP.

Commented [CF11]: Redo this figure. This version was based on the old way of calculating imported water supply, pre-supreme court case. Perhaps start from the most recent version from NeDNR's annual report?

Could include vertical lines showing adoption of 1st generation and 2nd generation IMPs, for context

Commented [CF12]: Chapter numbering could change. If so, update this.

Commented [CF13]: Since the objectives are associated with goals, consider listing each goal above its associated objectives

2. Ensure that data collected as a result of monitoring activities is readily available to both Tri-Basin NRD and NDNR.

Goal C Objectives

1. Ensure that Republican streamflows needed for existing surface water appropriations and ground water uses will not be depleted by water uses developed after September 15, 2004. This objective will be accomplished by offsetting depletions caused by new water uses via water conservation incentives, stream baseflow enhancement and other depletion offset projects, mandated reductions in water uses, or some combination of these three methods.
2. Tri-Basin NRD and NDNR will prohibit landowners, with limited exceptions for *de minimis* uses such as livestock wells and domestic wells that are not capable of pumping more than 50 gallons per minute, from initiating new or expanded uses of water that increase beneficial consumptive use of water within the Republican River Basin within Tri-Basin NRD. New consumptive uses of groundwater are those non *de minimis* uses which will result in an additional depletion to streamflows relied in the Republican River Basin.
3. Tri-Basin NRD will certify all land irrigated with groundwater and track transfers and changes in use. The NDNR will also continue to track surface water diversions, surface water transfers and those groundwater transfers that are within its responsibility.

CHAPTER 7: ACTION ITEMS TO ACHIEVE GOALS AND OBJECTIVES

The action items described in this section are intended to be consistent with the requirements of Neb. Rev. Stat. § 46-715(4).

I. Non-Regulatory Action Items

A. Information and Education Programs

1. Tri-Basin NRD and NDNR will provide educational materials to the public and carry out educational activities that will inform the public about the following issues, among others: hydrologically connected groundwater and surface water, invasive species management, conversion of irrigated acres to dryland agriculture or wildlife habitat, limited irrigation cropping systems, soil residue and tillage management, alternative crops and funding sources for programs that enhance water supply.

2. These educational materials and activities will include public meetings held jointly as needed, pamphlets, and website information.

B. Incentive Programs

1. Tri-Basin NRD and DNR, alone or in cooperation with other parties, intend to establish and implement financial, incentive, and qualified projects as described in *Neb. Rev. Stat.* §§ 2-3226.04 to reduce beneficial consumptive use of water within the Tri-Basin NRD. These projects include, but are not limited to (1) acquisition by purchase or lease of surface water or ground water rights, including storage water rights with respect to a river or any of its tributaries, (2) acquisition by purchase or lease or the administration and management, pursuant to mutual agreement, of canals and other works, including reservoirs, constructed for irrigation from a river or any of its tributaries, (3) vegetation management, including, but not limited to, the removal of invasive species in or near a river or any of its tributaries, and (4) the augmentation of river flows.

2. As a condition for participation in an incentive program, water users or landowners may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established.

3. Tri-Basin NRD and NDNR intend to continue to promote existing conservation programs that result in reductions in use of integrated water resources, such as the Conservation Reserve Enhancement Program (CREP) and Environmental Quality Incentives Program (EQIP), which are primarily funded by the U.S. Department of Agriculture. Tri-Basin NRD and the NDNR may establish and implement financial or other incentive programs to reduce beneficial consumptive use of water within the Tri-Basin NRD. Such incentive programs may include any program authorized by NRD rules and policies, state law or federal programs.

Commented [CF14]: Do you want to include something about WCIP in this action item, now that it exists? Or perhaps under C? In which location would it fit better?

C. Water Banking

1. A water banking process may be developed to enable the Tri-Basin NRD to more readily achieve the objectives of this IMP, to better protect groundwater supplies. It would also give irrigators another tool to improve their irrigation efficiency. Purposes of the water bank would be: to offset existing consumptive water uses, help Tri-Basin NRD track temporary and permanent reductions of irrigated land and to quantify any water use credits that result from these reductions, help water users find offsets for new consumptive water uses and reconfigure irrigated acres to achieve maximum water use efficiency. The NRD board is considering whether to develop a water bank and how to structure its administration. If Tri-Basin NRD purchases or otherwise acquires certified

Commented [CF15]: Formatting suggestion: for long lists like this that spill onto several lines, consider converting it to a bulleted list.

groundwater irrigated acres or other groundwater uses or surface water appropriations, the NRD could hold the transferred water uses in its water bank for purposes of:

(a) offsetting new or expanded consumptive uses;

(b) saving to meet statutory requirements or interstate agreement obligations;

(c) saving to meet future incremental targets toward achieving a hydrologically balanced condition, as described in Ch. 5, I. A.;

(d) future sales to individuals as depletion offsets for development of new consumptive uses of groundwater within the Tri-Basin NRD; or

(e) enabling irrigators to aggregate certified groundwater-irrigated acres for the purpose of improving irrigation efficiency. Transfers for this purpose are likely to reduce groundwater pumping, but may or may not result in reductions in depletions to streamflows.

2. In determining the amount of accretions to the stream that will be placed into the water bank due to the transfer of groundwater or surface water uses, Tri-Basin NRD and NDNR will agree on the best available tools or methods to utilize for calculating these accretions (i.e. the bankable volume of water). The process used to determine the accretions to be put into the water bank will consider the impact to streamflows through a fifty (50) year period and will be consistent with the methods used to evaluate transfers as described in Chapter 8, section II.C.5. (c) of this IMP. Additionally, these calculations will determine the timing and location of streamflow changes resulting from transfers to the water bank, as well as any impacts to existing groundwater or surface water users.

(a) If the Tri-Basin NRD intends to purchase, lease or otherwise acquire a surface water appropriation for deposit in the water bank, Tri-Basin NRD will contact NDNR prior to such purchase. The NDNR will conduct a field investigation of the surface water appropriation and notify Tri-Basin NRD of the results within ninety (90) days. Tri-Basin NRD will work collaboratively with NDNR in performing analyses to evaluate the bankable volume of water resulting from purchase, lease or acquisition by other means of surface water appropriations. If surface water appropriations are transferred to another purpose or point of use, Tri-Basin NRD will follow the appropriate statutes and rules and regulations of NDNR for approval of such transfers.

Commented [CF16]: John, are any updates needed to this part? Does any of it need changed from its current hypothetical, future-looking description to reflect current status?

(b) Tri-Basin NRD may obtain and maintain permanent easements on property from which surface water or groundwater uses that have been retired for purposes of the water bank.

(c) All deposits, withdrawals and other activities (purchases, sales, leases, transfers and assignments) related to the water bank will be reported to NDNR annually

(d) Any water banking activity carried out by Tri-Basin NRD will follow the procedures for any groundwater regulatory action (e.g. transfers, certification or municipal and non-municipal industrial accounting) applicable to such activity. Any surface water related water banking activity carried out by the Tri-Basin NRD must follow the appropriate state statute and NDNR rules and regulations.

D. Riparian vegetation management
Tri-Basin NRD and NDNR will work with available resources to identify occurrences of invasive riparian plants. When infestations are detected, available resources may be directed toward eradication of these plants.

E. Encourage use of conservation best management practices

Tri-Basin NRD and NDNR will review available, reputable, relevant scientific studies that quantify consumptive water use reductions that result from applying water saving conservation practices and seek to determine the effect of such changes on water consumption within the Republican Basin portion of the district.

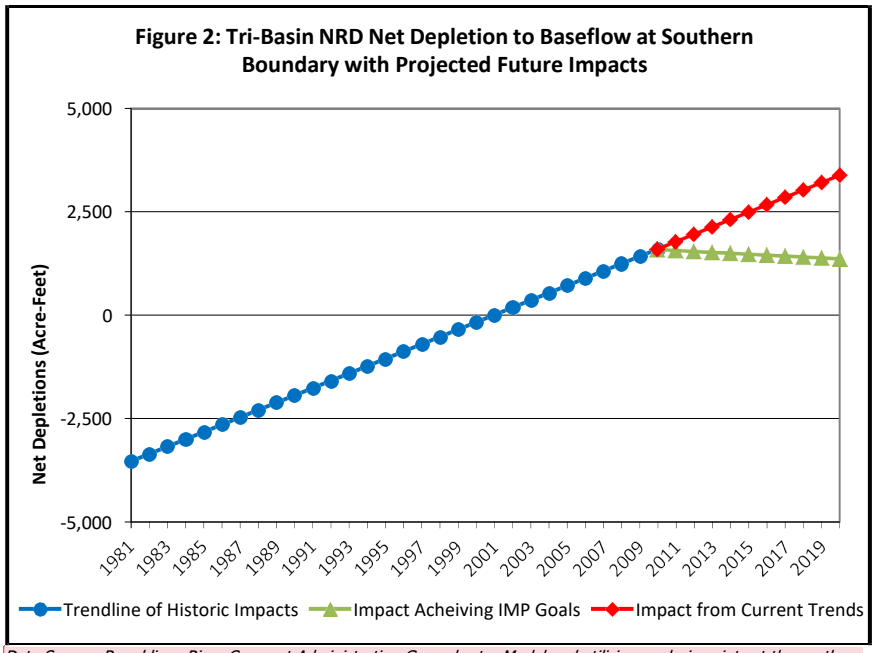
II. Groundwater Regulatory Action Items (controls)

The groundwater controls that have been adopted and implemented by Tri-Basin NRD are those found in the *Rules and Regulations – Ground Water Management in the Tri-Basin Natural Resources District*. The Tri-Basin NRD will periodically review the controls being implemented to carry out the goals and objectives of this IMP. Tri-Basin NRD reserves the right to adopt additional controls identified in state statutes and may adjust or modify the rules used to carry out the listed controls if the board of directors determines that such modifications will help the district achieve the goals and objectives of this IMP. Any adjustments or modifications to the rules must not be in conflict with the goals and objectives of this IMP. Prior to the removal of the listed controls, the Tri-Basin NRD and NDNR must amend this IMP.

Commented [CF17]: Should this be "modify" rather than "amend"?

Goal A Objective 1 of this IMP is to establish a hydrologically "balanced" condition in which Tri-Basin NRD water users will not cause a net depletion to streamflow of the Republican basin when evaluated on a three-year rolling average basis. Anticipated progress toward this goal within the first ten years is charted in Figure 2. The graph shows the trendline of historic net depletions caused by Tri-Basin NRD through 2010 (blue circles). It also shows projected net depletions to streamflow through 2020 with (green triangles) and without (red diamonds) a 2000 acre-feet reduction in net depletions to Republican tributary streamflows. Tri-Basin NRD's progress toward meeting this objective will be evaluated annually using the methods outlined in Chapter 8. Progress may also be forecast for milestone years five years and ten years after approval and initial implementation of this IMP. In the event that Tri-Basin NRD does not achieve sufficient reductions in depletions to match the downward trend shown in the graph, Tri-Basin NRD will take additional regulatory actions agreed upon between the Tri-Basin NRD and NDNR designed to meet Goal A Objective 1 of this IMP.

Figure 2: Tri-Basin NRD Net Depletion to Baseflow at Southern Boundary with Projected Future Impacts



Data Source: Republican River Compact Administration Groundwater Model and utilizing analysis points at the southern boundary of the Tri-Basin NRD

If a 2000 acre-foot annual streamflow depletion reduction is not sufficient to achieve a hydrologically balanced condition after the first ten years, then a subsequent additional incremental reduction in streamflow depletions will be

Commented [CF18]: Update this whole paragraph to reflect that Tri-Basin is currently in a hydrologically balanced condition. It needs to describe it in terms of what will need to happen if depletions are found to exceed accretions in future assessments.

Commented [CF19]: Will need to be revised to fit whatever changes are agreed-up on to figure 2 (see comments below)

Commented [CF20]: Redo or eliminate this figure. This is based on the old way of computing imported water supply. Also, in recent years we have moved away from trendline-based projections to modeled projections.

Commented [CF21]: What does this paragraph need to say given that tri-basin is currently in a hydrologically-balanced condition and that the first 10 years of the plan are no longer relevant?

Commented [BJ22]: The point of this section being in the controls is that if the hydrologically balanced condition is not being achieved then the NRD will mitigate its depletions until that balance is achieved. It augmentation and/or incentives are not sufficient to achieve the "balanced" outcome then regulatory measures would be necessary. Those regulatory measure could a variety of actions by the NRD (allocation reductions, shutdowns, etc.)

identified by the Tri-Basin NRD and NDNR. Once a balanced condition is achieved, The Tri-Basin NRD will maintain such condition on a three-year rolling average basis through continuing implementation of the IMP.

Impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated prior to September 15, 2004 may also be addressed prior to a subsequent increment with the intent of achieving a balanced condition.

Tri-Basin NRD and NDNR have already taken several steps intended to protect interconnected groundwater and surface water resources. The following three (3) groundwater regulatory actions are currently being implemented in the Republican Basin portion of the Tri-Basin NRD and will continue to be implemented in the future: (1) moratorium on drilling new wells for new water uses, (2) certification of irrigated land and other non *de minimis* consumptive water uses and (3) regulation of transfers of groundwater and of certified irrigated land. In addition, Tri-Basin NRD will continue to require landowners in the Republican basin portion of the district to meter groundwater pumping and annually report their flowmeter readings in order to monitor and track current and future groundwater uses.

1. Moratorium

   There is a moratorium on the issuance of new water well construction permits for development of new groundwater uses and on development of new or expanded groundwater uses. The Tri-Basin NRD may grant a variance from the moratorium if there is an offset for the new or expanded use or if there will not be an increase in consumptive use due to the new or expanded use. In granting a variance, Tri-Basin NRD will consider the timing, location and amount of the depletion and the corresponding offset so there will not be an adverse impact on existing groundwater or surface water users.

2. Certification of Irrigation Uses

   All groundwater irrigation uses have been certified by the Tri-Basin NRD. If modifications to certified irrigated acres are necessary, the Tri-Basin NRD will consider the timing, location and amount of any depletion associated with the modification and any associated offset to ensure that no additional adverse impacts on existing groundwater or surface water users occur as a result of Tri-Basin NRD-authorized transfers.

Commented [CF23]: Why is this description in the controls section if it is not a control? Would it make sense to move it into the monitoring and studies section with the other information about the hydrologically balanced assessment?

Commented [CF24]: Discuss what this paragraph means. It is not clear to me.

Commented [BJ25]:

Commented [BJ26R25]: I believe this is here because the old method showed an imbalance. The agreed action level was up to 2000 AF and if that was insufficient to achieve the balance this paragraph was there to say the NRD may go beyond the 2000 AF in the first increment. This should no longer be necessary.

3. Transfers

(a) General Guidelines for Transfers

(i) The purpose of a transfer is to allow for the consumptive use of groundwater to be changed either in location or purpose without causing an increase in depletions to the Republican River or its perennial tributaries or an impact to other existing surface water or groundwater users.

(ii) The types of transfers that the Tri-Basin NRD will permit and regulate or take action on through the Tri-Basin NRD's Ground Water Management Rules and Regulations are (1) physical transfers of groundwater off of overlying land; (2) transfers of the type of use or addition of use; (3) transfers of certified irrigated acres; (4) physical transfers of groundwater or certified irrigated acres between the Tri-Basin NRD and Republican Basin NRDs; (5) municipal transfer permits (if the applicant does not have a municipal transfer permit from NDNR); (6) industrial transfer permits (if the applicant does not have an industrial or municipal transfer permit from NDNR); and (7) transfers out of state.

(iii) Permits will be required from Tri-Basin NRD for the categories of transfers listed in 1-7 above. The specifics of the transfer permitting process, including the evaluation criteria, are described in Tri-Basin NRD's Ground Water Management Rules and Regulations. The evaluation criteria for a transfer permit include, but are not limited to, the following considerations: (1) whether the proposed transfer will cause an impact to existing groundwater or surface water users; (2) whether the proposed transfer will cause an increase in depletions to the Republican River or its perennial tributaries (see map 3 in Appendix A); (3) whether the proposed transfer will result in an increase in consumptive use; (4) the amount, location and timing of any changes in depletions or accretions to the river due to the proposed transfer; (5) whether the proposed transfer will adversely affect the state's ability to comply with the Republican River Compact; (6) whether the proposed transfer is consistent with the purpose for which the Integrated Management Area was designated; and (7) whether the proposed transfer will protect the public interest and not be detrimental to the public welfare.

(iv) Tri-Basin NRD and NDNR will agree on the methodology used to determine whether proposed transfers will affect the state's ability to comply with the Republican River Compact and ensure that Republican streamflows needed for existing surface water appropriations and ground water uses will not be depleted by water uses developed after September

Commented [CF27]: John, would you say the information in the transfers section is still current and consistent with your NRD's rules?

15, 2004. The methodology will evaluate the effects of transfers on the Republican River and its perennial tributaries, including the timing, amount and location of the depletion and the associated offset. Actions taken by Tri-Basin NRD related to the approval of transfer permits will be documented and shared annually with NDNR.

(b) Guidelines for Types of Transfers

(i) Physical transfer of groundwater off of the overlying land – (1) permits will not be required for the physical transfer of groundwater for domestic or range livestock uses; (2) the transfer cannot result in an increase in consumptive use unless an offset is provided and (3) the registration must be changed to reflect the new or additional use.

(iii) Transfers of certified irrigated acres – The Tri-Basin NRD board of directors will only approve transfers of certified irrigated acres within the Republican Basin portion of the district if requesting landowners agree to meet the following requirements. (1) The certified acres being transferred will be decertified on the original parcel and an equal or lesser number of acres will be certified on the destination parcel, and (2) certified irrigated acre transfers will not result in any net increase in consumptive use. The second condition will be satisfied in the following manner: (a) if the proposed destination for the certified acres being transferred has a stream depletion factor (SDF) that is equal or less than ten percent greater than the SDF of the original certified acres location, the same number of acres can be certified at the new location. If the destination parcel for the certified acres has a stream depletion factor that is ten percent or more greater than the original location of the certified acres, the number of acres that can be transferred will be decreased by an amount proportional to the increase in the stream depletion factor; (b) the parcel that the certified acres originated from will remain in dryland agricultural use, or another lower consumptive use land practice approved by Tri-Basin NRD; and (c) no certified acre transfers will be allowed from land that has surface water or commingled water sources to land that will have groundwater as the sole source of irrigation water.

Commented [CF28]: Fix numbering. Currently skips "(ii)"

(iv) Transfers from Outside to Inside the Tri-Basin NRD and from Inside to Outside the Tri-Basin NRD – Landowners who wish to transfer groundwater or certified irrigated acres from outside Tri-Basin NRD into the district, or vice versa, must: (1) secure a permit from Tri-Basin NRD; (2) the transfer request must conform with the rules and regulations of the NRD from which the transfer is coming from or going to; and (3) an agreement must be reached between the Tri-Basin NRD and the other

NRD involved in the transfer specifying that the use being retired in one district will remain retired for the duration of the transfer.

(v) Municipal Transfer Permits – (1) Any municipal transfers issued after the effective date of this IMP will require a transfer permit from the Tri-Basin NRD; (2) copies of variances or Tri-Basin NRD permit applications for municipal uses shall be forwarded to Department for review, to ensure that compliance with the Republican River Compact will be maintained; and (3) a water well construction permit shall not be issued until the board has granted a variance to the moratorium on the issuance of new water well construction permits and has approved the transfer permit.

(vi) Industrial Transfer Permits – (1) Groundwater transfers without an industrial transfer permit from NDNR will require a transfer permit from the Tri-Basin NRD; (2) copies of variances or Tri-Basin NRD permit applications for industrial uses shall be forwarded to NDNR for review, to ensure that compliance with the Republican River Compact will be maintained; and (3) a water well construction permit shall not be issued until the board has granted a variance to the moratorium on the issuance of water well construction permits and has approved the transfer permit.

(vii) Transfers Out of State – (1) The NDNR will consult with Tri-Basin NRD when considering applications filed to transfer groundwater out of state, pursuant to Neb. Rev. Stat. § 46-613.01. Tri-Basin NRD will take action to approve or deny the transfer request based on the same criteria that transfers within the district are subject to prior to the issuance of a transfer permit by NDNR; and (2) a water well construction permit shall not be issued until the board has granted a variance to the moratorium on the issuance of new water well construction permits and has approved the transfer permit.

4. Metering

Tri-Basin NRD requires metering and annual reporting by all *non deminimus* groundwater users. This requirement will be maintained in accordance with Chapter 6 of the Tri-Basin NRD Groundwater Management Rules and Regulations for the duration of this IMP.

Tri-Basin NRD will adopt or revise groundwater management rules and regulations as needed to carry out the three (3) action items (a) through (c) described below.

5. Municipal Use and Accounting

(a) Tri-Basin NRD will calculate average baseline water use for each municipality and municipal wellfield within the Republican Basin portion of the district based on historical pumping data and wastewater discharge data. An appropriate interval for a historical water use baseline will be determined by Tri-Basin NRD and NDNR based on availability of data, climate records and other relevant factors.

(b) Annual groundwater pumping and wastewater discharges by each municipality will be tracked through a reporting and database system administered by Tri-Basin NRD.

(c) Annual water use will be determined by subtracting wastewater discharge volumes from groundwater pumping volumes. A three-year rolling average of annual water use will be compared to the baseline average to determine overall changes in municipal water use.

(d) Tri-Basin NRD will evaluate and address depletions to streamflow resulting from all increases in municipal water use due to: increases in governmental consumptive use, increases in population and new or expanded single commercial/industrial consumptive uses of less than twenty-five (25) million gallons per year. If a municipality holds a municipal and rural domestic transfer permit granted by NDNR, then Tri-Basin NRD must offset depletions to streamflow due to the increased water use above baseline water use, as long as total municipal water use remains lower than limits listed in the municipal and rural domestic transfer permit.

(e) The municipality will offset all increases in water use and new or expanded single commercial/industrial consumptive water uses greater than twenty-five (25) million gallons per year.

6. Non-Municipal Industrial Use and Accounting

(a) Tri-Basin NRD will calculate average baseline water use for each industry not supplied with municipal water within the Republican Basin portion of the district. The baseline average will be based on historical pumping data and wastewater discharge data. An appropriate interval for a historical water use baseline will be determined by Tri-Basin NRD and NDNR based on availability of data, climate records and other relevant factors.

(b) Annual groundwater pumping and wastewater discharges by each industry meeting the criteria in 5.(a) above will be tracked through a reporting and database system administered by Tri-Basin NRD.

(c) Annual water use will be determined by subtracting wastewater discharge volumes from groundwater pumping volumes. A three-year rolling average of annual water use will be compared to the baseline average to determine overall changes in industrial water use.

(d) Tri-Basin NRD will evaluate and address depletions to streamflow resulting from all expanded single commercial/industrial consumptive uses of less than twenty-five (25) million gallons per year. If an industry holds an industrial transfer permit granted by NDNR, then Tri-Basin NRD must offset depletions to the streamflow due to increased water use above the baseline water use, as long as total industrial water use remains lower than limits listed in the industrial transfer permit.

(e) Industries will offset all new water uses and expanded single commercial/industrial consumptive water uses greater than twenty-five (25) million gallons per year.

7. Large User Permits

Any industrial water user or public water supplier, with the exception of municipalities, who desires to withdraw and consume groundwater shall, prior to: 1) changing the use of an existing groundwater well or wells; 2) commencing construction of any new or replacement groundwater well; or 3) modifying existing infrastructure for the purpose of expanding consumptive use of groundwater, apply to Tri-Basin NRD for permission to authorize such withdrawal and consumption of groundwater.

8. Variances

Tri-Basin NRD may grant a variance for good cause shown for any of the above-listed groundwater regulatory actions. Any variance granted by Tri-Basin NRD will consider the timing, location and amount of any depletion associated with the variance and insure that such depletion is offset to ensure that there will not be an adverse impact to existing groundwater or surface water users or to the state's ability to comply with the Republican River Compact.

III. Surface Water Regulatory Action Items (controls)

The following surface water controls as authorized by Neb. Rev. Stat. § 46-716 will be implemented and/or continued by the Department:

1. Metering of all surface water diversions at the point of diversion from the stream will continue to be required. For surface water canals that are not part of a Bureau of Reclamation project, farm turnouts also will be required to be metered. All meters shall have a totalizer and shall meet DNR standards for installation, accuracy and maintenance. All appropriators will be monitored closely to ensure that neither the rate of diversion nor the annual amount diverted exceeds that allowed by the applicable permit or by statute.

2. The DNR's moratorium on the issuance of new surface water permits was made formal by Order of the Director dated July 14, 2004, and will be continued. Exceptions may be granted to the extent permitted by statute or to allow issuance of permits for existing reservoirs that currently do not now have such permits. Such reservoirs are limited to those identified through the FSS required inventory of over fifteen (15) acre-feet capacity reservoirs.

3. All proposed transfers of surface water rights shall be subject to the criteria for such transfers as found in *Neb. Rev. Stat.* §§46-290 to 46-294.04 and related DNR rules or the criteria found in *Neb. Rev. Stat.* §§46-2,120 to 46-2,130 and related DNR rules.

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

5. During Compact Call Years, as determined through the forecast set forth in Neb. Rev. Stat. § 46-715(6), DNR will regulate and administer surface water in the basin as necessary to ensure Compact compliance.

CHAPTER 8: MONITORING AND STUDIES SECTION

I. Introduction

The objective of the monitoring and studies section of this IMP is to gather and evaluate data, information, and methodologies that could be used by Tri-Basin NRD and NDNR to:

A. increase understanding of the surface water and hydrologically connected groundwater systems;
B. to test the validity of the conclusions and information upon which the IMP is based and
C. to assist decision makers in properly managing the water resources within the district to ensure that the district reaches and maintains a hydrologically balanced condition.

Tri-Basin NRD and NDNR will utilize data from a variety of sources to monitor and measure the progress made by the district and its constituents toward achieving the goals and objectives of this IMP.

II. Monitoring

A. Various methods will be employed to monitor the progress of the implementation of this IMP. Part one of this section describes the tracking and reporting of water use activities within district boundaries by Tri-Basin NRD and NDNR. Part two of this section describes analyses that will evaluate progress that has been made in: 1) offsetting streamflow depletions that result from new or expanded consumptive groundwater or surface water uses initiated after September 15, 2004; and 2) establishing a balance between consumption of virgin water supplies of the Republican Basin within the district and imported water credits originating from within the district.

Part One: Tracking and Reporting of Water Related Activities

(a) Tracking

(i) Tri-Basin NRD works closely with county assessors to track the location and number of irrigated acres in the district. Tri-Basin NRD will continue to gather data on crops planted and harvested, tillage systems and other soil and water conservation practices. Tri-Basin NRD will be responsible for maintaining up-to-date records of and ensuring compliance with rules regulating the following activities within the district: a) certification of groundwater uses and any changes to these certifications; b) approved transfers of groundwater and certified irrigated land, including all of the information included in the application and approval of the transfer; c) compilation of groundwater pumping (flow meter) data that is reported to or gathered by the Tri-Basin NRD; d) issuance of water well construction ; e) any other permits issued by the Tri-Basin NRD; f) any conditions associated with any permits that are issued; g) information gathered through the municipal and non-municipal industrial accounting process; h) any variances issued, including specific conditions attached to the variance and the

reasoning behind approval of the variance; i) groundwater level data collected from wells and test holes; j) conservation easements and other agreements between Tri-Basin NRD or other agencies and landowners to temporarily or permanently cease irrigation on land within the Republican Basin portion of the district; and k) specifics on water banking activities. Tri-Basin NRD will also continue to work with landowners to track the location and number of currently irrigated acres, along with crops and tillage systems used on those lands, using crop reports.

(i) Tri-Basin NRD will continue to monitor the location of headwaters of Republican River tributaries that originate within this district. The locations of these headwaters are identified every spring and fall using GPS locators. A significant movement of any of these headwaters upstream or downstream could indicate changes in local groundwater levels. Tri-Basin will also continue to measure groundwater levels in wells at numerous locations around the district as a means to evaluate the extent of the groundwater mound and imported water contributions from the Platte to the Republican Basins (see Map 4 in Appendix A).

(ii) The NDNR will be responsible for tracking the following activities within the district on an annual basis: a) any surface water permits issued; b) any dam safety permits issued; c) any groundwater transfer permits issued; d) reports of water diverted, and when available stored by surface water users and e) the associated offsets for any new permits issued.

(iv) Tri-Basin NRD and NDNR will use available resources to inventory the number of acres of cropland on which water-saving conservation practices, such as minimum tillage methods, are being applied. The parties may also attempt to quantify changes in the coverage of these practices over time, and their impact on net consumptive water use attributable to irrigation.

(v) Tri-Basin NRD and NDNR will continue to cooperatively operate several stream gages within the district. Average streamflow trends measured by these gages will be monitored by the Tri-Basin NRD and NDNR (see Map 4, Appendix A).

(b) Reporting

(i) A meeting will be held annually to review progress being made toward achieving the goals and objectives of the IMP. Additional, items discussed during this meeting may include annual tracking by NDNR and Tri-Basin NRD of data and information as described above. This information or portions of this information may also be used for assessing compliance by Nebraska with the Republican River Compact.

Commented [CF29]: Add to this section language about data for the basin-wide plan annual report. See page 20 (under B.,2.) of the LRNRD 5th generation IMP for example language

Commented [CF30]: The other 3 republican IMPs now include a March 1 deadline for sending NeDNR data for the RRCA data exchange. I would suggest including that in this one, too.

(ii) Reports on permitted activities from Tri-Basin NRD and Department should include information on the location, estimated amount, and timing of depletions caused by each permitted new or expanded water use, as well as the associated offset and the location, estimated amount and timing of the offset's accretions to the river. The reported information will be utilized as appropriate in the evaluation process as described in part two below.

Part Two: Measuring the Success of this IMP in Meeting the Goals and Objectives of this IMP

(a) Measuring the success of the IMP in addressing Goal A.

(i) The NDNR will annually calculate the depletions to streamflow due to groundwater pumping within the Tri-Basin NRD, the imported water credit, and accretions to streamflow due to Tri-Basin NRD management actions. Calculation of the depletions to streamflows and imported water credit will be calculated using the RRCA groundwater model. Other actions taken by the Tri-Basin NRD to reduce depletions or augment streamflows will be evaluated using methods consistent with the RRCA accounting procedures. These calculations will be summarized into a rolling three-year average to assess the progress toward achieving a hydrologically balanced condition. If the Tri-Basin NRD and NDNR jointly determine that sufficient progress is not being made toward achieving a hydrologically balanced condition then additional controls or management actions will be implemented as described in section 7.II of this IMP.

(b) Measuring the success of the IMP in addressing Goal B.

(i) Tri-Basin NRD and NDNR will annually meet to discuss studies and tools that could be developed to assist with enhancing integrated management activities.

(ii) Additionally, Tri-Basin NRD and NDNR will make available data collected as part of ongoing monitoring activities. These data may be used to evaluate the accuracy of calibration of the Republican River Compact Administration (RRCA) Model. If concerns arise, they may be brought to the attention of the RRCA.

(c) Measuring the success of the IMP in addressing Goal C.

(i) Evaluate all newly permitted activities, variances, and changes in municipal and industrial uses to determine if significant changes in the amount, timing and location of streamflow have occurred.

Commented [CF31]: This does not currently specify that the calculations will be based on the depletions and accretions at the NRD's southern border. Should it?

Commented [CF32]: Add to this section information about Tri-Basin's obligation if the NRD is not in a hydrologically balanced condition, as discussed at the 2017 annual meeting.

From the 2017 annual meeting notes:
"Jesse proposed, and participants discussed, how to proceed in future years when NeDNR's analysis (as described in the IMP) indicates at TBNRD is not in a hydrologically balanced condition. It was discussed and agreed-upon by NeDNR and TBNRD that NeDNR will provide a preliminary assessment in August or September, that the parties will set an objective each year for offsets of up to 1000 af (if needed, based on the volume of the 3-year average net depletion indicated by the preliminary analysis), and that TBNRD could then begin augmentation pumping the same year if needed. John was amenable to the proposed methodology"

From the NeDNR annual report the last few years:
"In instances where the balance is negative, Tri-Basin NRD and NeDNR will set an objective for an offset up to 1000 acre-feet, and Tri-Basin NRD could begin augmentation pumping the same year"

Commented [CF33R32]: Also, this methodology appears to cap the max annual offset at 1000 af (vs the 2000 af cap mentioned elsewhere in the IMP). Discuss which it should be and make sure it's consistent throughout the document.

Commented [CF34R32]: Also consider spelling out how the fact that the test is a 3-year average will be taken into account when determining the offset amount

Commented [CF35]: This is where I would suggest moving the information about the hydrologically balanced assessment that is currently housed within the controls section.

Commented [CF36]: Revise to reflect that Tri-Basin is currently in a hydrologically balanced condition.

For example,
"These calculations will be summarized into a rolling three-year average to assess progress toward sustaining or achieving a hydrologically balanced condition. If Tri-Basin NRD is not in a hydrologically balanced condition and Tri-Basin NRD and NeDNR jointly determine that sufficient progress is not being made toward achieving a hydrologically balanced condition, then…."

Commented [CF37]: If section numbering changes, change this

(i) If Department and Tri-Basin NRD agree that changes in the amount, timing or location of streamflow resulting from uses developed after September 15, 2004 have significantly negatively impacted existing users, Tri-Basin NRD and NDNR will work collaboratively with affected parties to identify, plan and implement regulatory or voluntary actions that will effectively address these impacts. Tri-Basin NRD and NDNR will consider the socioeconomic benefits derived from the various uses impacted by such changes in streamflow as they develop plans to address negative streamflow impacts.

In performing all analyses, NDNR and Tri-Basin NRD will use the best data and science that is readily available. The NDNR and Tri-Basin NRD will work with other agencies and interested parties, as appropriate, to identify gaps in their analyses and determine whether studies should be undertaken to address these gaps.

III. STUDIES

A. The NDNR and Tri-Basin NRD will jointly pursue and evaluate studies. contingent upon budget and staff resources, to evaluate their effectiveness in achieving the goals and objectives of this IMP.

B. The following topics for potential studies have been identified by Department and Tri-Basin NRD: 1) potential for reducing consumptive water use and evaluation of streamflow depletion impacts of various crop rotations; 2) potential for reducing consumptive water use and evaluation of streamflow depletion impacts of various methods of riparian vegetation management; 3) potential for reducing groundwater pumping through irrigation scheduling; 4) conducting an update of previous surveys of the type and location of irrigation systems throughout the district; 5) potential for reducing consumptive water use and evaluation of streamflow depletion impacts of various tillage practices; 6) potential for reducing consumptive water use and evaluation of streamflow depletion impacts of other agricultural and land management best management practices; and 7) potential for reducing consumptive water use and evaluation of streamflow depletion impacts of various means of enhancing conjunctive water resources management.

C. Tri-Basin NRD intends to work with other agencies and private landowners to reduce the density and coverage of infestations of noxious weeds and invasive plants in riparian areas within the district. The Tri-Basin NRD will also work with landowners, agencies, and others to implement sustainable, long-term riparian land management plans that have as their goal returning these lands to their native condition. Progress made toward meeting this objective will be measured in terms of acres of riparian land treated using herbicides and other methods to reduce invasive plant infestations and upon which sustainable, long-term management plans are being implemented that will

improve the condition of riparian ecosystems. Tri-Basin NRD and NDNR will evaluate available, reputable, relevant scientific studies that quantify consumptive water use by invasive plants to determine whether and to what extent invasive plants consume water at higher rates than native vegetation. Said reviews will be conducted as needed prior to or during annual meetings between NDNR and Tri-Basin NRD. After such reviews have been conducted, NDNR and Tri-Basin NRD will determine an appropriate amount of water use credit that should be deducted from the deficit between the imported water credit originating from Tri-Basin NRD and consumptive use of Republican Basin virgin water supplies within Tri-Basin NRD when infestations of such plants are eradicated or significantly reduced in coverage.

CHAPTER 9: REVIEW OF AND MODIFICATIONS TO THE IMP

II. Amending the IMP

Commented [CF38]: Broaden this to "Modifying the IMP" since other modifications are possible besides amendments

A. The Tri-Basin NRD and NDNR will jointly determine whether amendments need to be made to this IMP as necessary. Proposed amendments to this IMP will be discussed at the annual progress review meeting or, as necessary, at other meetings between the Tri-Basin NRD and NDNR.

B. Modifications to this IMP will require agreement between Tri-Basin NRD and NDNR regarding proposed changes. After the proposed changes have been agreed to, a joint hearing on whether to adopt those changes will be held. Following the joint hearing, the Tri-Basin NRD and NDNR will, by order, adopt amendments to this IMP.

C. Nothing in this IMP will compel Tri-Basin NRD or NDNR to continue to pursue the goals and objectives of this IMP if changes are made in state or federal law that make the integrated management planning process unnecessary or irrelevant.

CHAPTER 10: INFORMATION CONSIDERED

NDNR Title 454 "Rules for Practice and Procedures", Chapter 13 "Integrated Management Plans" specifies that certain information be considered during development of joint IMPs. Title 454, Chapter 13 reads as follows:

1 TYPES DATA CONSIDERED. The following types of scientific data and other information will be considered in the adoption of a plan for the integrated management of hydrologically connected surface and groundwater pursuant to Neb. Rev. Stat. § 46-717.

1.1 Historical data on streamflows within the proposed integrated management plan area.

1.2 Past, present and potential future surface water use within the proposed integrated management plan area.

1.3 Groundwater supplies within the proposed integrated management plan area including hydraulic conductivity, saturated thickness, and other groundwater reservoir information, and/or groundwater models if available.

1.4 Local recharge characteristics and rates from any sources, if available.

1.5 Precipitation and the variations including trends within the proposed integrated management plan area.

1.6 Crop water needs within the proposed integrated management plan area.

1.7 Water data collection programs.

1.8 Past, present, and potential groundwater uses within the proposed integrated management plan area.

1.9 Proposed water conservation and supply augmentation programs within the proposed integrated management plan area.

1.10 The availability of supplemental water supplies, including the opportunity for groundwater recharge within the proposed integrated management plan area.

1.11 Surface and groundwater concerns within the proposed integrated management plan area.

1.12 Opportunities to integrate and coordinate the use of water from different sources of supply within the proposed integrated management plan area.

1.13 Existing and potential sub irrigation uses within the proposed integrated

Commented [CF39]: Review this section to make sure it is up to date and complete. Consider adding statute, the compact and related documents, and the basin-wide plan. Also the supreme court decision, since it is relevant to the mound credit for this IMP. See the LRNRD, MRNRD, or URNRD for examples of other information considered that was included in those.

management plan area.

1.14 The relative economic value of different uses of surface and groundwater proposed or existing within the proposed integrated management plan area.

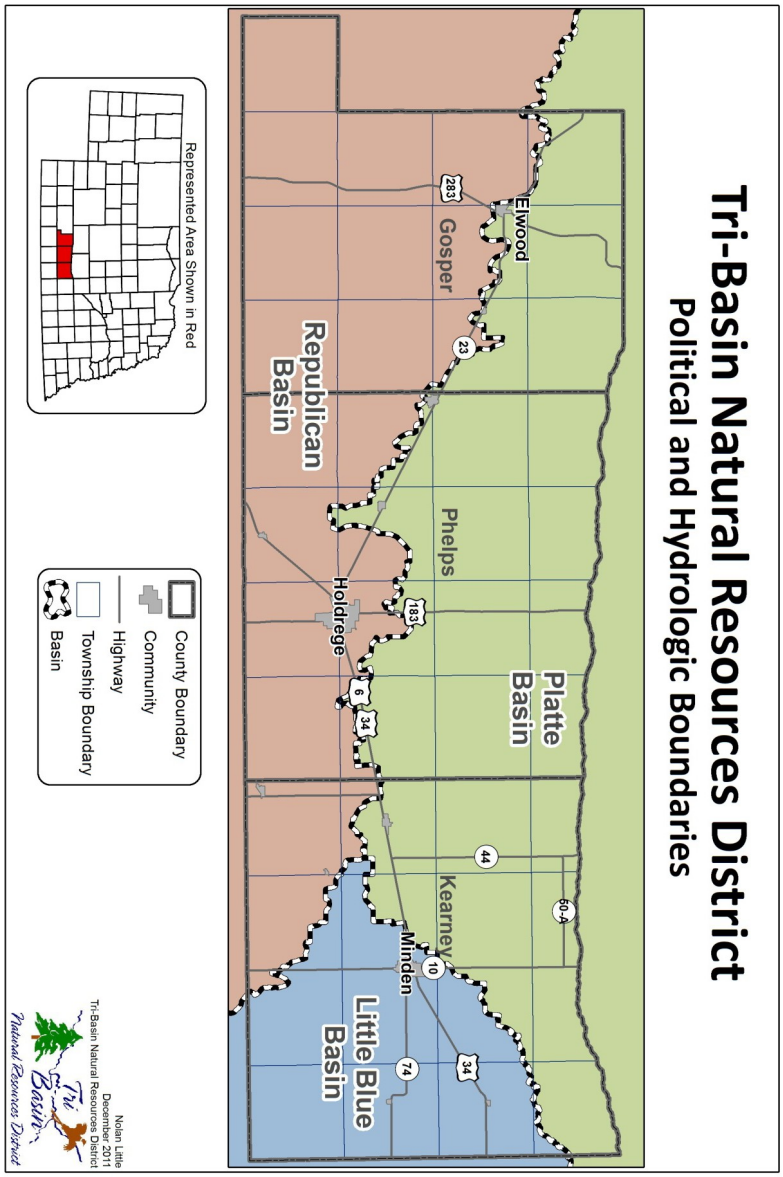
1.15 Rules and regulations for groundwater management developed by the natural resourced district(s) affected by the integrated management plan.

Additional information used in the preparation and to be used in the implementation of this integrated management plan can be found in Chapters 2 and 3 of the 1996 Tri-Basin NRD Ground Water Management Plan and additional data and information on file with Tri-Basin NRD and NDNR.

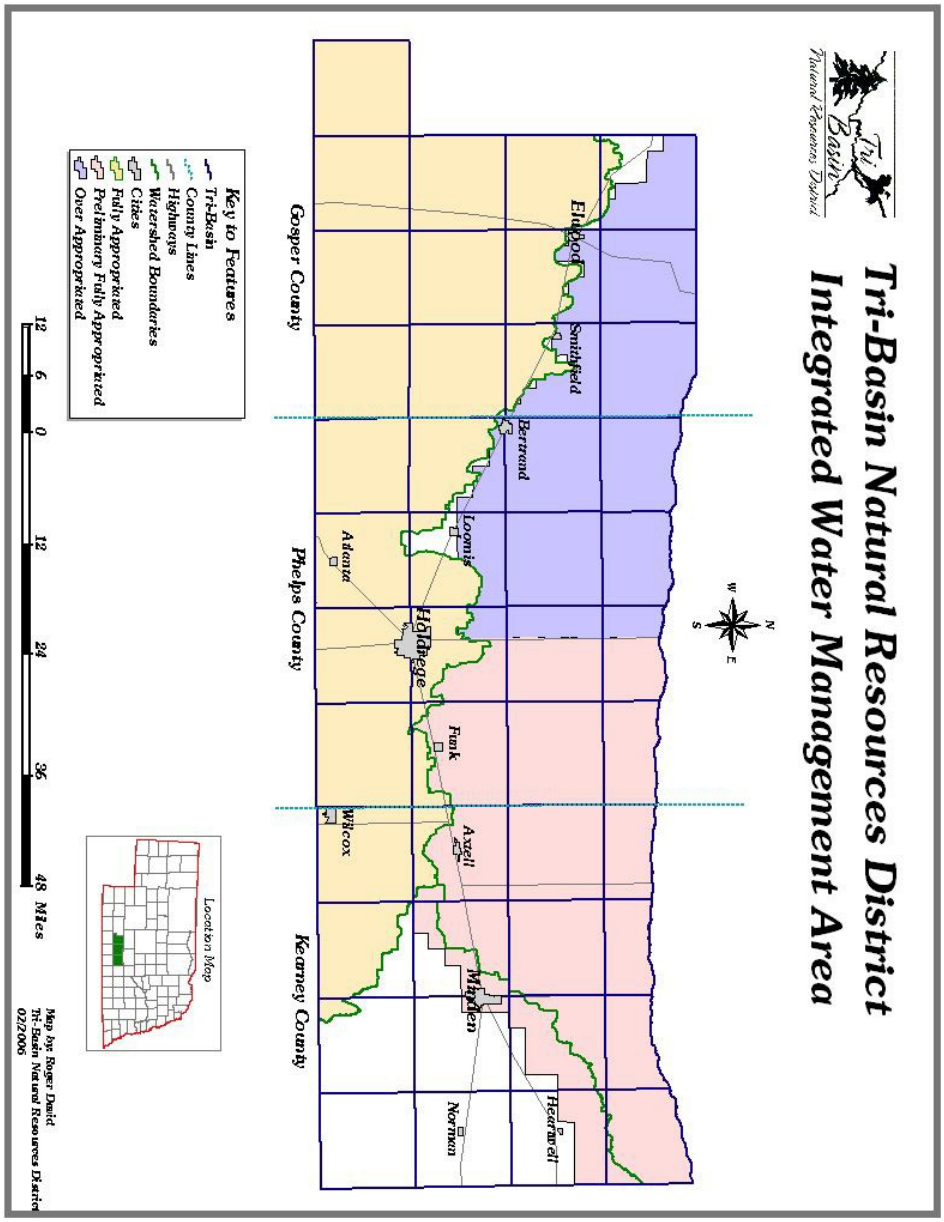
Appendix A

Maps

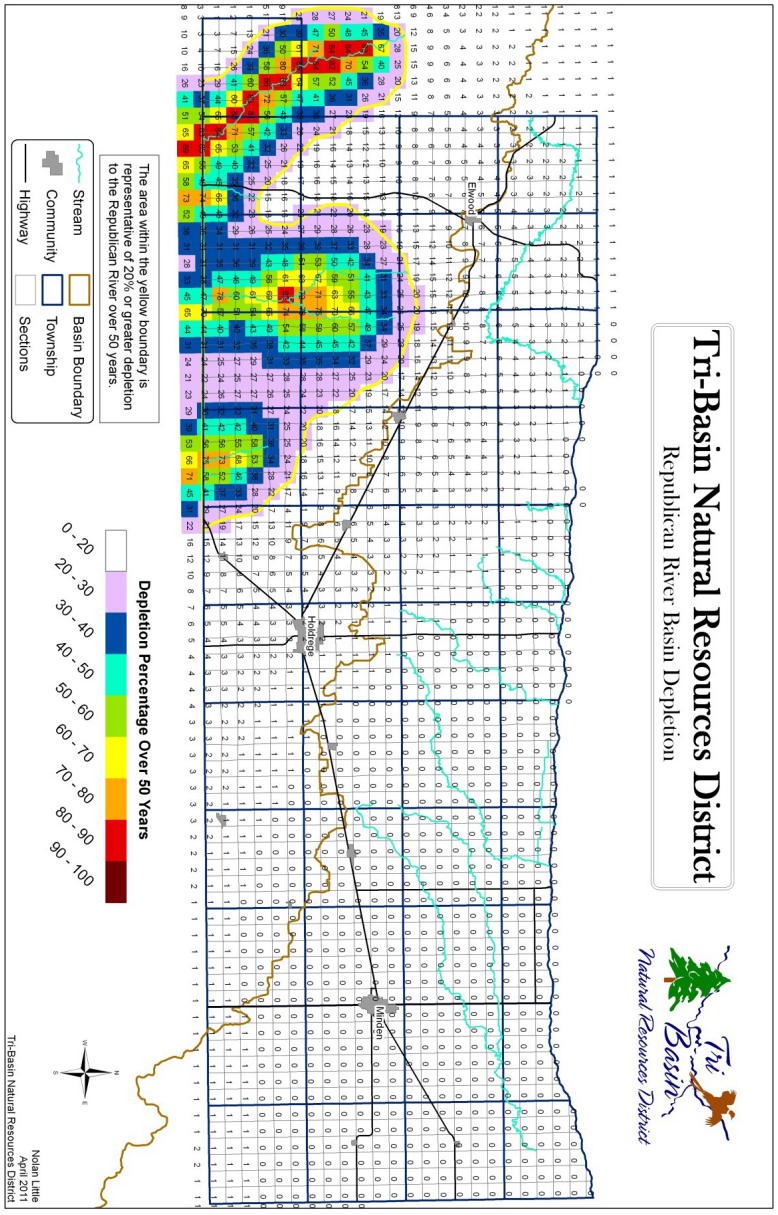
Commented [BJ40]: I would be clear with the maps which map applies to the area covered by this IMP. Other IMPs contain specific maps related to the sw and gw control areas and that might be a good clarification here.



2- DRAFT Markup of Suggested Changes for Second Generation IMP

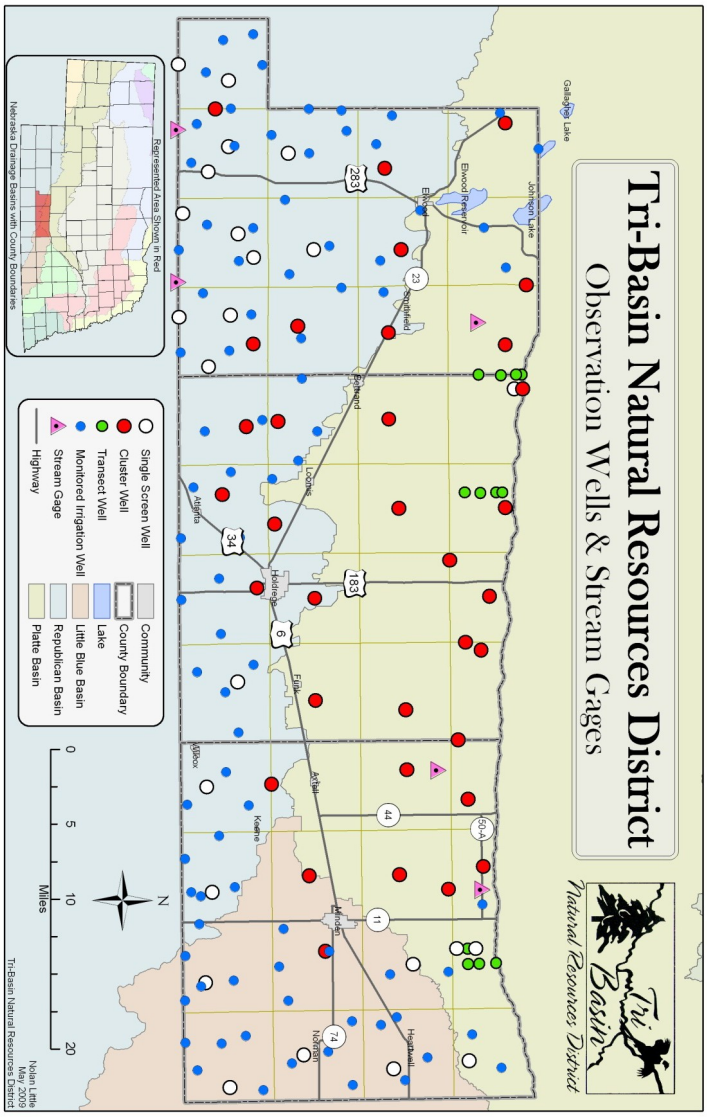


3- DRAFT Markup of Suggested Changes for Second Generation IMP



Commented [CF41]: This SDF map is out of date. New SDF information was calculated as part of determining the hydrologically connected area for the basin as part of the basin-wide plan development process.

3- DRAFT Markup of Suggested Changes for Second Generation IMP



Commented [CF42]: John, is this current?

4- DRAFT Markup of Suggested Changes for Second Generation IMP

FORMATTING AND EDITORIAL SUGGESTIONS FOR SECOND GENERATION

- Use indentation and text formatting to differentiate headings from body text.
- Apply headings consistently for all subsections. Some roman numerals currently have headings (such as II. Tri-Basin NRD Mission Statement) but some roman numerals launch straight into the body text with no heading. For navigation purposes, I would suggest including a heading for each subsection.
- Apply spacing between content consistently for all sections/subsections. For example, on some pages there are spaces between the roman numeral headers and the body text, but on other the body text immediately follows the heading.
- Apply spacing consistently between items in a bulleted or numbered list. Some lists currently have horizontal spaces between them, while others do not.
- Change "NDNR" to "NeDNR" throughout the document.
- Use abbreviations consistently throughout the document: write out the full term on first usage, followed by the abbreviation in parentheses. Then use the abbreviation for the rest of the document.
- Ensure all statute references are formatted the same throughout the document, and that they are complete (including *Neb. Rev. Stat.* and section symbol(s) on each)
- I would suggest adding Oxford commas throughout the document. Most Water Planning publications include them, and they can add clarity to writing; however, whether to add them or not is a matter of preference for the group to decide. The most important thing is to make sure they are either used or not used consistently throughout the document.
- Proofread throughout the document. Fix typos, etc.
- Use consistent figure and table reference format throughout.
- Rename the maps as "figures" for consistency with the charts.
- Include standard figure and table captions on all figures throughout. Figure captions go below a figure; table captions go above the table.
- Make sure that if a figure is included, it is also referenced somewhere throughout the plan.
- Move maps and other figures to the relevant section of the plan, rather than in a separate appendix
- Any time "utilize" appears, verify that "utilize" is the accurate word choice. "Utilize" = to use something for a purpose other than for what it was originally intended. "Utilize" is not a synonym of "use." When in doubt, use "use."

- Fix numbering format. When this was converted from the PDF, the roman numerals in some places got squished horizontally, making ii and iii difficult to read.
- Formatting suggestions for charts:
    - (1) eliminate hard-to-read text overlapping graphics
    - (2) Move "figure #" label from the chart header to the caption.
    - (3) consider removing the italics to make the captions easier to read.
- Fix header and footer formatting. The conversion from PDF seems to have messed up the headers and footers in certain areas such that they are difficult to edit and not linked to previous sections where they should be.

5- DRAFT Markup of Suggested Changes for Second Generation IMP

Attachment G
LRIP/MP/GWMP/R&R Guidance Handout

NEBRASKA
DEPT. OF NATURAL RESOURCES

Guidelines for Submitting District Plans and Rules to the Nebraska Department of Natural Resources (NeDNR)

Type of Document[1] and Information to be Included in Document	**Interval in which to Submit Proposed Plan or Rules to NeDNR**[2]	**Materials to Email to NeDNR**[3]	**NeDNR Review Time**	**Authority for Submittal to NeDNR for Review**
Ground Water Management Plan and any amendments See *Neb. Rev. Stat*. § 46-709.	Whenever updated or amended. Each district shall maintain a ground water management plan based upon the best available information (*Neb. Rev. Stat*. § 46-709).	**Proposed plan:** Copies of the proposed plan, with red-line changes: • PDF document • Microsoft Word document Other materials: • Descriptive listing of information that the NRD utilized pursuant to *Neb. Rev. Stat.* § 46-710 • Cover letter stating intent to make changes and a brief summary of substantive changes **Final plan:** • PDF of the final, adopted plan, requested within 60 days of the hearing	**90 days for review and comment** (*Neb. Rev. Stat*. § 46-711 (1)). *Neb. Rev. Stat.* 46-711 (2) describes activities the NRD must do prior to setting the hearing date if the Director of NeDNR disapproves of the submitted plan.	The Director of Natural Resources shall review any ground water management plan or plan modification submitted by a district (*Neb. Rev. Stat.* § 46-711 (1)). Prior to establishment by a district of a management area other than a management area being established in accordance with § 46-718, the district's management plan shall have been approved by the Director of Natural Resources (*Neb. Rev. Stat.* § 46-712 (2)).
Long Range Implementation Plan See *Neb. Rev. Stat.* § 2-3277; also *Natural Resources District Long Range Implementation Plan Guidelines* (1978, available upon request).	Shall be **reviewed and updated annually** and **filed with the Department on or before October 1 of each year** (*Neb. Rev. Stat*. § 2-3277).	Copies of the proposed plan: • PDF document • Microsoft Word document with red-line changes Other materials: • Cover letter stating intent to make changes and a brief summary of substantive changes	Shall be accorded a **30-day period** for review and comment (*Neb. Rev. Stat*. § 2-3279).	A copy of the long-range implementation plan and all revisions and updates thereto as adopted shall be filed with the department, the Governor's Policy Research Office, and the Game and Parks Commission on or before October 1 of each year. (*Neb. Rev. Stat*. § 2-3277).

[1] This reference guide is for convenience and guidance only. It does not represent a complete list of items NRDs are required to file with NeDNR, nor does it list all pertinent state statutes.
[2] Please address all formal submittals to the Agency Director, with carbon copies to the Water Planning Division Manager and to dnr.report@nebraska.gov.
[3] For exceptions, call NeDNR's Water Planning Division to discuss (402-471-2363).

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Master Plan See *Neb. Rev. Stat*. § 2-3276.	**At least once every ten years** (Neb. Rev. Stat. § 2-3276).	Copies of the proposed plan: • PDF document • Microsoft Word document with red-line changes Other materials: • Cover letter stating intent to make changes and a brief summary of substantive changes	Shall be accorded a **30-day period** for review and comment (*Neb. Rev. Stat*. § 2-3279).	No state funds shall be allocated or disbursed to a district unless that district has submitted its master plan in accordance with §§ 2-3229 and 2-3276 to 2-3280 and until the disbursing agency has determined that such funds are for plans, facilities, works, and programs which are in conformance with the plans of the agency (*Neb. Rev. Stat*. § 2-3280).
Rules and Regulations and any amendments See *Neb. Rev. Stat*. § 46-707 (1). Also any **Ground Water Management Area designation** See *Neb. Rev. Stat*. § 46-712.	Whenever updated or amended.	**Proposed Document** Copies of the proposed document: • PDF document • Microsoft Word document with red-line changes Other materials: • Cover letter stating intent to make changes and a brief summary of substantive changes **Final Document** • PDF of the final, adopted Document, requested within 105 days of the hearing	Requested **no later than when it is made available to the public in advance of noticing the hearing**. Notice of the hearing shall be published in a newspaper published or of general circulation in the affected area at least once each week for three consecutive weeks, the last publication of which shall be not less than seven days prior to the hearing (*Neb. Rev. Stat*. § 46-743 (2)); The full text of all controls, rules, or regulations shall be available to the public upon request not later than the date of first publication (*Neb. Rev. Stat*. § 46-743 (5)).	Before any rule or regulation is adopted pursuant to this subsection, a public hearing shall be held within the district. Notice of the hearing shall be given as provided in section 46-743 (*Neb. Rev. Stat*. § 46-707). In order to establish a management area, the district shall fix a time and place for a public hearing…. Notice of the hearing shall be published as provided in section 46-743, and the hearing shall be conducted in accordance with such section (*Neb. Rev. Stat*. § 46-712 (2)). **The hearing shall include testimony of a representative of the Department of Natural Resources** (*Neb. Rev. Stat*. § 46-743 (7)).