

Annual Report of Water Use Activities in the Twin Platte NRD

2021



Platte Basin Meeting
July 21, 2022
Lake McConaughey Visitor
Center – Ogallala, NE
9:00 am MT



Annual Report of Water Use Activities in the Twin Platte NRD

I. SUMMARY

A. This report is to review activities within the TPNRD during calendar year 2021. This report has been compiled for the 2021 Basin-wide meeting. Beginning with this 2021 annual report, the TPNRD will start incorporating a more robust assessment of the effects of various water use activities. The first two items to be more rigorously assessed will be the effect of transfers (see Section IV) since the final date of the historic period in the previous Robust Review and the effect of the TPNRDs program to incentivize producers to agree to temporarily not irrigate portions of their certified irrigated acres, which began in 2017 (see Section XI.E). For this year’s initial assessment, the watershed model was run using the same methodology from the previous Robust Review for the acres decertified due to transfers, the acres newly certified due to transfers, and the acres not irrigated due to the temporary not irrigated program. Transfers were assessed beginning in the year they occurred through the end of the future projection in 2063, and temporary not irrigated acres were assessed for the years 2017-2021.

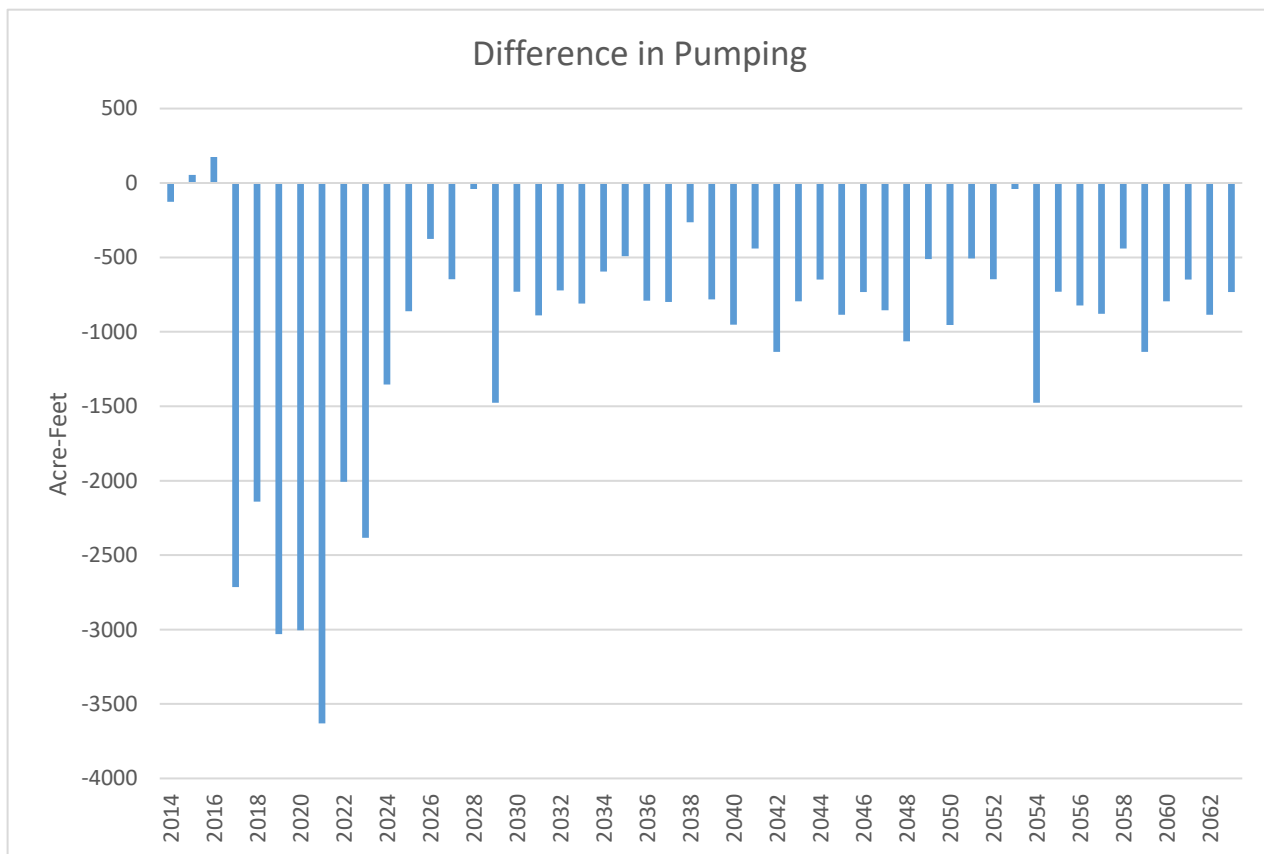


Figure 1. Change in groundwater pumping due to transfers and temporary not irrigated program.

The parcel-based changes in net groundwater pumping (change in pumping and recharge) were translated to the COHYST model grid and the change in streamflow due to these activities was estimated by adding the net pumping values to the baseline Robust Review future scenario in the Groundwater Evaluation Toolbox (See. Figure 2).

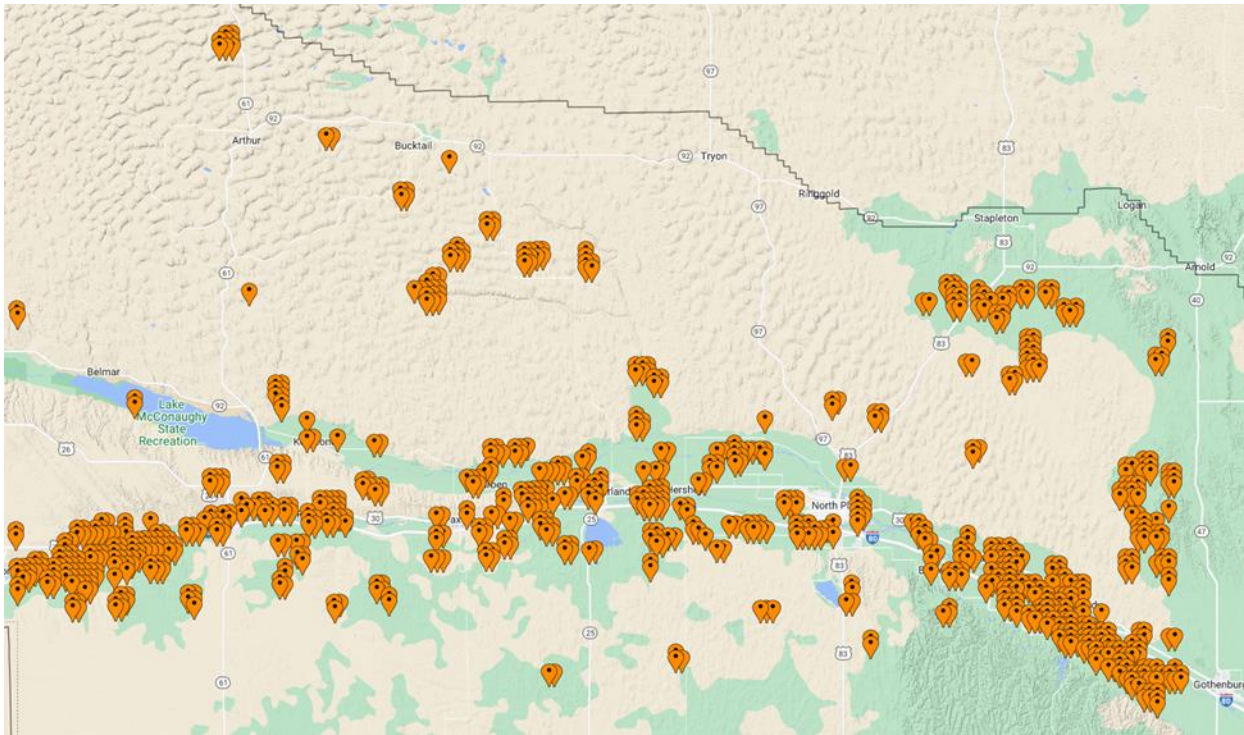


Figure 2. Locations of acres either certified or decertified due to transfers and location of temporary not irrigated acres.

Figure 3 presents the results of the model simulation. Streamflow benefits are greatest during the period during and immediately following the 2017-2020 temporary not irrigated program. As this program continues (there was additional sign up in 2021), those benefits will extend further out into the future. The longer-term improvements to streamflow reflect the transfers that occurred during 2014-2020 and appear to average about 400 acre-feet per year. The benefits of the temporary not irrigated program. Add to this value during early years of the simulation and appears to average approximately 1,000 acre-feet per year during and immediately following the 2017-2020 program period that was simulated.

II. DEFINITIONS

A. Offset - A reduction in irrigated acres, or consumptive use at one or more locations that serves to compensate for a transfer of water to a new location. There can be no new depletions to the river.

B. Variance - This would be an exception to the current adopted Rules and Regulations of the TPNRD. An example could be exceptions to the stay on new irrigated acres and new consumptive uses while providing for adequate offsets or transfers to assure there are no net increases in depletion to the river, impacts to the river, or impacts to existing (ground or surface) users.

C. Transfers - Allows for changes in consumptive use of water without causing an increase in depletions to the river or an impact to existing (ground or surface water) users. When

determining depletions and accretion to the river, the TPNRD uses the agreed upon methodology of the Platte Basin NRD’s which ensures that the timing, location, and amount of depletions to the river are being met.

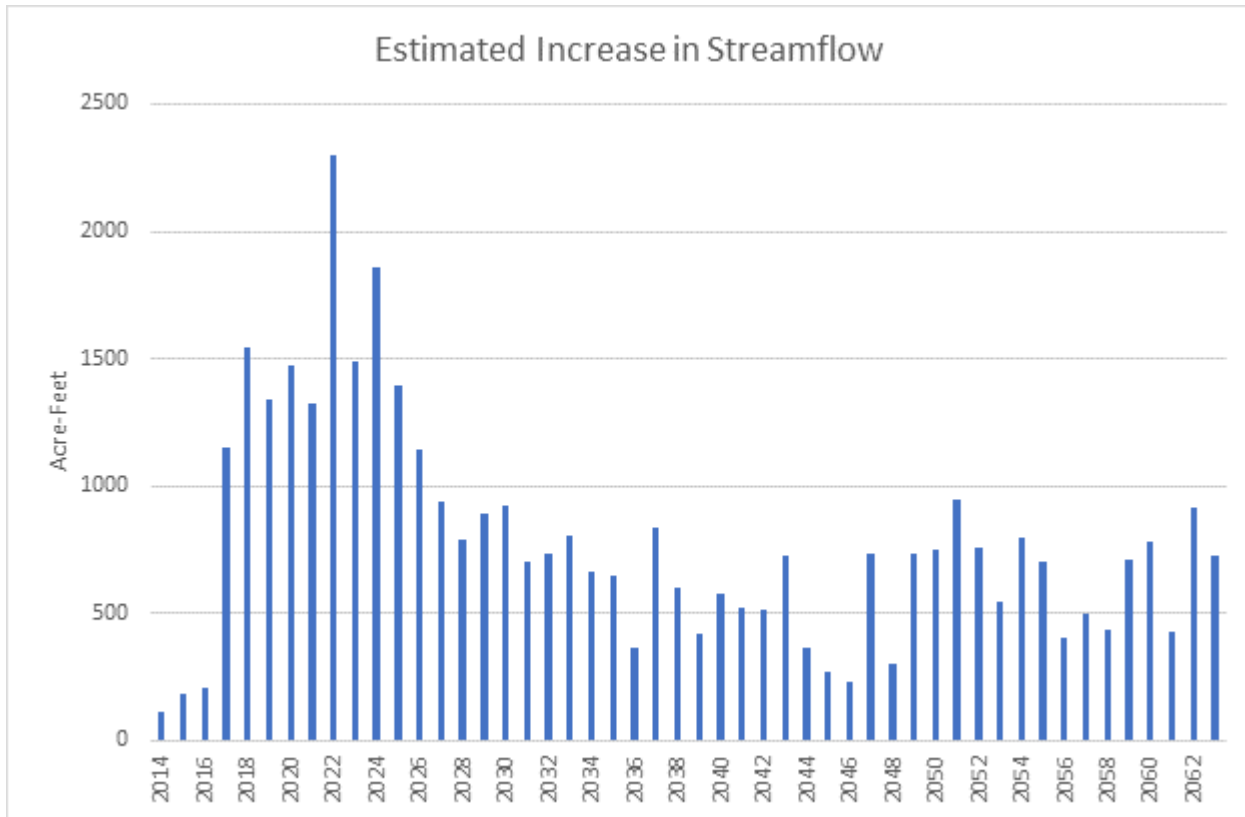


Figure 3. Estimated benefit from transfer and temporary not irrigated programs.

III. CERTIFIED ACRES

A. The District began certifying ground water irrigated acres in December 2005. The initial certification process ended with the effective date of the amendments to the Rules and Regulations on December 16, 2010. A map showing the location and number of certified irrigated acres can be found in Appendix A. Annually the TPNRD had been tracking any new certifications and any acres that have permanently removed their irrigation rights through the modification of the certified irrigated acres process.

B. To be certified as irrigated, lands were required to be irrigated one time between 2000 and 2004. If this could not be determined by using infrared photography, then documentation is to be provided to the TPNRD office and placed on file. Changes are not made without proper proof and approval from the TPNRD Board of Directors. Other possible changes in irrigated acres, also with Board approval, could be from acres being transferred from one county to another county. Those acres that are in the CRP program could certify their irrigated acres but could not be transferred until they come out of the program, unless they paid any fees associated with leaving the CRP program early. Please refer to Table 1 below.

Table 1. Certified Irrigated Acres by County

<u>Certified Irrigated Acres by County</u>	<u>2018</u>	<u>2019</u>	<u>2019</u>	<u>2021</u>
Arthur	11,296	11,296	11,296	11,364
Keith	116,158	116,171	116,171	114,931
Lincoln	183,344	183,302	183,302	183,557
McPherson	10,100	10,100	10,100	10,227
Totals	321,242	320,898	320,898	320,079

IV. APPROVED TRANSFERS

A. The TPNRD allows for transfers of certified irrigated acres to occur if a transfer does not conflict with the TPNRD Rules and Regulations. Transfers are prohibited from crossing river basin boundaries. For example, a landowner may own land in both the North Platte and South Platte River Basins, but he cannot de-certify the acres from the South Platte River Basin and transfer those acres to a pivot that is in the North Platte River Basin. Transfers may take place from the North Platte River Basin into the Platte River Basin as long as the de-certified acres are being transferred downstream. The same is true with transferring certified irrigated acres from the South Platte River Basin into the Platte River Basin.

B. Transfers can occur within flow lines (see map in Appendix B). These flow lines limit the impact on existing (ground or surface water) users. These lines were developed using the major diversion points in the TPNRD, and the movement of ground water to the rivers. A transfer can cross these lines moving west to east but not move upstream or east to west, which would increase the chance of impacting an existing (ground or surface water) user. This transfer rule helps determine there will be no new depletions to the North, South, and Platte Rivers, and any required offsets will be located upstream of the new water use.

C. Transfers are not allowed off any land that is located within the one-mile boundary of villages, and the two-mile boundary of a city. Transfers are allowed into this area from outside this area on a permanent basis. Transfers are not allowed within this area unless it is in the same field, such as a producer de-certifying his corners to put under an existing $\frac{3}{4}$ pivot to fully go around.

D. Transfers can move from a higher Stream Depletion Factor (SDF) to a lower SDF at a one-to-one rate. If a transfer is requested to move from a lower SDF to a higher SDF, then the present and future conditions are entered into the agreed upon CIR calculator and the number of transferable acres are calculated by obtaining a zero (0.0) ac-ft depletion to the river. By reducing the acres eligible to be transferred to a new location, the impact to the river remains the same over a 50-year period.

E. For calendar year 2021, the District approved twenty transfers. The total number of acres involved in these transfers considered to be new or moved to a new location was 781.00 acres. The total number of acres involved in these transfers considered for offset or de-certified acres was 745.96 acres. Each transfer resulted in no net increase in stream

depletions. The majority of these transfers are at a one-to-one rate; sometimes transfers can be at a more-to-one ratio. For transfers that were not at a one-to-one ratio, an additional 2.0 acres were dried up. Producers are also allowed to de-certify acres at the current location and place those acres into the TPNRD water bank account which allows the producer unlimited time to re-locate those acres to a new location. In 2021 there were additional acres temporarily placed into the TPNRD water bank account when they did not immediately have a location to transfer the acres, and some acres that were relocated out of the water bank. The only stipulations are that the TPNRD will get any credit for those acres being not irrigated in the short-term, and they must comply with the TPNRD Rules and Regulations when they are ready to be re-located. Currently there are 365.95 acres in the water bank. The average length of duration is usually less than one year. Late modification of certified irrigated acres in 2021 accounted for 103.0 newly certified acres. Detailed data regarding the location, timing, and amount associated with each transfer can be found in Appendix C.

F. Definition - Transfers - Allows for changes in consumptive use of water without causing an increase in depletions to the river or an impact to existing (ground or surface water) users. When determining depletions and accretion to the river, the TPNRD uses the agreed upon methodology of the Platte Basin NRD's which ensures that the timing, location, and amount of depletions to the river are being met.

V. WELL CONSTRUCTION PERMITS

A. See Table 2 Summary Table for Well Permits at the end of this section.

B. Supplemental Ground Water Wells - The TPNRD has issued Supplemental Ground Water Wells (coded SG). These are ground water wells that supplement an already existing ground water well. There are no increased acres associated with these wells. For example, a well may irrigate two pivots; that producer could apply for a variance for another ground water well (supplemental well). For calendar year 2021, the TPNRD issued zero Supplemental Ground Water Well Permits with no new consumptive use.

C. Supplemental Surface Water Wells - The TPNRD has issued Supplemental Surface Water Well Permits (coded SS) in the past and is no longer permitting these wells. These are ground water wells that can be used only when their surface water needs are not being met. There is a legal binding contract between the producer and the NRD. These wells are only to be used when the surface water rights have been exhausted. If a producer is found abusing this contract, the ground water well will immediately be in violation, and a cease and desist order will be issued for that well. For calendar year 2021, the TPNRD issued zero Supplemental Surface Water Well Permits.

D. Replacement Wells - The TPNRD has issued Replacement Well Permits (coded RP). These are replacement wells for a well that has already been registered, and for one reason or another has failed or is no longer producing as originally intended. For calendar year 2021, the TPNRD issued twelve replacement well permits. For details of these permits refer to Appendix D.

E. Temporary Wells - The TPNRD has issued Temporary Well Permits (coded TP). These are wells that are intended to serve for a limited time. For example, the TPNRD allowed a TP well to be used when a road project was underway north of Ogallala so there would be water to help compact the surface of the ground. For 2021, there were zero Temporary Water Well Permits issued.

F. De-Watering Wells - The TPNRD has issued De-Watering Well Permits (coded DW). These are wells that are intended to serve a limited time defined as less than 90 days. For example, the TPNRD allowed de-watering wells to be used in conjunction with the Village of Sutherland lowering ground water levels so they could lay new water pipes from their new well field. For calendar year 2021, the TPNRD issued zero De-Watering Well Permits.

G. New Well Permits - The TPNRD has issued New Well Permits (coded NP). These are wells that are intended to be used to irrigate acres being transferred from the original location to a new location where there is not an existing irrigation well. For example, the TPNRD might allow flood irrigated acres to be de-certified at their original location and transferred to a new location (if there are no new depletions) where they could be placed under a pivot that does not have a well associated with it. For calendar year 2021, the TPNRD issued ten New Well Permits. For details of these permits refer to Appendix D. For these two new well permits there was no new consumptive use, and when possible, the Board required well decommissioning or modifying the existing wells to pump less than 50 gpm (use for the old wells could be converted into livestock wells).

H. Commercial/Industrial Wells - The TPNRD can issue Commercial/Industrial Well Permits (coded IN). These are wells where commercial or industries may have needed wells or need another source of water due to water quality issues. Another example is for a livestock operation that needs a well to water their livestock, and for the operation of their confined animal operation. For calendar year 2021, the TPNRD issued one Industrial Well Permit.

I. OTHER PERMITS - Currently there are no other permits to report.

Table 2. Summary Table for Well Permits

Well Permit Type		Total
Supplemental Ground Water Wells - SG		0
Supplemental Surface Water Wells - SS		0
Replacement Wells - RP		12
Temporary Wells - TP		0
De-Watering Wells - DW		0
New Well - NP		10
Commercial/Industrial - IN		1

Total		23
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VI. VARIANCES

A. Variances can be pursued for a variety of reasons (i.e. a new ground water well permit for acres that have been historically irrigated using a different well; a transfer is a type of variance). The TPNRD Board reviews variances each month (except December) on a case-by-case basis. For a summary of variances pertaining to new wells, refer to Table 2 above. For a summary of variances pertaining to transfers of certified irrigated acres, refer to Appendix C.

VII. MUNICIPAL ACCOUNTING

A. Determining the baseline use - for all cities and villages located in the TPNRD - pumping and discharge rates were requested as far back as could be documented. For all the communities in the TPNRD, except the City of North Platte, discharge to a sewage pond or river was used; therefore, 100% consumption of pumped figures was used. For North Platte and Ogallala, the actual discharge figures were used. Discharge numbers were subtracted from pumping numbers to determine the annual amount of consumptive use per city or village. The Department of Economic Development estimated population figures were used in non-census years; if not available then the city and village provided population figures, and when census figures were available, those figures were used. Then the annual consumption was divided by population to determine the baseline per person per year. Then the baseline use per person was divided by 365.25 days to figure the baseline use per person per day. Please refer to Table 3 for the summary of each city and village water uses.

B. Reporting Data for Cities and Villages with a Municipal Transfer Permit - North Platte

1. The City of North Platte is the only community in the TPNRD that has a Municipal Transfer Permit from the State. They have submitted pumping and discharge records for activities through December 2020. See Table 3 below for a summary chart of the City of North Platte’s annual consumptive use compared to its permitted municipal transfer permit figures. The pumping records of the municipalities are reported in fiscal years (beginning August 1 and ending July 31); therefore FY19-20 is only half completed. Baseline amounts for cities with transfer permits are developed differently than cities without transfer permits. The amount of use described in the Municipal Transfer Permit amounts become the baseline per the TPNRD’s Rules and Regulations. Any deviation from that amount on an annual basis is represented in Table 3.

2. The specifics of the pumping and discharge rates for the City of North Platte can be seen in Table 3 below, the summary report is that the city pumps a considerable amount less than is allowed under its transfer permit, even in periods of record drought.

Table 3. Summary Table for Cities and Village Pumping and Discharge Rates

Platte Basin Municipal Water Usage Summary								
	<u>Brady</u>	<u>Maxwell</u>	<u>North Platte</u>	<u>Hershey</u>	<u>Sutherland</u>	<u>Paxton</u>	<u>Ogallala</u>	<u>Brule</u>
Years figured in Baseline	2003-2006	2001-2006	2001-2006	2001-2006	2001-2006	2001-2006	2001-2006	2001-2006
Baseline (Pump-Discharge)(ga)	64,937,333	22,256,400	4,000,000,000	79,392,560	108,548,020	58,623,800	206,294,400	26,740,000
Baseline Population	371	317	23,817	694	1,184	559	4,751	339
Baseline (gal/capita/day)	479	192	193	313	251	285	119	217
Discharge: Stream, Lagoon	Lagoon	Lagoon	Stream	Lagoon	Lagoon	Stream	Stream	Lagoon
FY 20-21 Use (Pump-Discharge)	52,245,344	16,776,000	980,554,100	118,262,415	28,634,081	43,951,000	220,324,000	23,986,553
2016 Population	428	312	24,000	665	1,238	583	4,391	326
2021 (gal/capita/day)	334	147	112	487	63	206	137	201
Transfer Permit	No	No	Yes	No	No	No	No	No
# of Wells	2	2	19	2	3	3	4	2
City of North Platte's consumptive use per capita is not figured using their transfer permit amount but their actual pumped amount								

C. Reporting Data for Cities and Villages without a Municipal Transfer Permit

1. Each City and Village of Brady, Maxwell, Hershey, Sutherland, Paxton, Ogallala, and Brule without a transfer permit has submitted their pumping and discharge records (where applicable) through December 2020, and those amounts have been entered into a database to determine the annual use and any deviation from the baseline amount on an annual basis. Refer to Table 3 above to see the summary of their 2020 pumping compared to the baseline pumping.

2. The specifics of the pumping and discharge rates for the Villages and Cities of Brady, Maxwell, Hershey, Sutherland, Paxton, Ogallala, and Brule can be seen in Table 3 above. The summary report shows the overall trend that the villages and cities pump a considerable amount less than their baseline use, even in periods of record droughts. Important to note that 2012 & 2020 were some of the driest years on record, and a couple of the municipalities pumped more than their baseline, but they are still well below their overall pumping credit compared to their baseline.

VIII. INDUSTRIAL ACCOUNTING

A. Definitions

1. Industrial Water Well - Commercial Use - Golf Course Wells - The definitions under ground water Title 456 shall include, but not be limited to, maintenance of golf course turf.

a. Baseline - There are seven golf courses using 14 of the 60 registered commercial and/or industrial wells in the TPNRD. Working with the representatives and understanding how they operate to determine the best way to report their baseline use has been a challenge, but a systematic approach has been developed. It has been determined that the total irrigated acres will be the baseline when working with the golf course wells in the TPNRD. Each golf course worked with NRD staff to delineate the acres that were historically

irrigated between 2000 through 2006. The seven golf courses in the TPNRD have not expanded since prior to 2000; therefore, their baseline use of acres irrigated has not changed. On an annual basis, the TPNRD staff works with the golf course staff to verify they have not increased consumptive use or depletions to the river. For details of these industrial (golf course) well baselines, refer to Table 4 below.

Table 4. Summary of the Golf Courses in the TPNRD (reported in acres)

RegCD	S	T	R	Name	Base	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020
G-101808	22	15	40	Bayside Investments	63.3	63.3	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03
G-102429	22	15	40		63.3	63.3	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03
G-090154	9	13	38	West Wind Golf Co	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-030632	9	13	38		122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-160987	9	13	38		122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-160986	9	13	38		122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-160985	9	13	38		122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-013763	9	13	38		122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-160985	9	13	38		122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4
G-077670	7	12	330	Lake Maloney Golf Assn	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11	81.11
G-137635	18	13	35	Indian Meadows	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27.002
G-077773	10	13	30	Iron Eagle Golf Course	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93
G-069317	28	14	30	River's Edge Golf Club	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78	99.78
G-077797	5	13	33	Sutherland Golf Assn	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63	55.63

b. Industrial Water Well - The definitions under ground water Title 456 state a well that provides ground water for manufacturing, commercial, and power generation purposes is an industrial water well.

1. Baseline - There are 11 different owners of 44 industrial wells in the TPNRD left to establish baselines and annual uses. During January 2013, letters were sent to owners requiring flow meters to be installed on all their industrial wells so the industrial reporting requirements could be met. Reporting spreadsheets were developed for the industrial users so baseline uses, and annual uses can be determined. For the most recent details for these industrial wells that provide ground water for manufacturing, commercial, and power generation purposes, refer to Table 5 below.

IX. FLOW METER DATA

A. Flow meters are not required in the TPNRD at this time.

Table 5. Summary of the Commercial/Industrial Wells in the TPNRD

RegCD	Name	S	T	R	Base	2014	2015	2016	2017	2018	2019	2020	2021
G-100408	Hi Line Cooperative Inc - Rosco	5	13	37	TBD	4,691,160	7,430,020	15,091,060	22,127,770	27,764,440	7,045,380	33,826,200	35,977,080
G-153331	Hi-Line Cooperative Inc - Brule	22	13	40	TBD	10,789,221	15,771,142	23,201,706	35,833,880	45,369,647	7,739,704	60,301,385	71,707,408
G-096420	Central Nebraska Packing Inc	35	14	30	TBD	9,840,000	0	0	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
G-084422	CNPPID	4	11	27	TBD	317,459,397	315,936,584	312,646,299	310,818,800	262,800,000	285,911,686	284,577,460	285,867,569
G-120299	Cody Go Kart Family Fun Park	9	13	30	TBD	56,000	68,320	73,080	74,744	78,750	77,790	82,810	86,950
G-160756	K-Lawn	1	13	39	TBD	844,000	770,000	645,000	825,000	1,029,000	774,200	618,500	690,800
G-102374	Midwest Renewable Energy LL	27	14	33	TBD	117,427,481	124,182,289	109,824,456	101,299,292	111,136,557	111,158,490	93,998,645	96,804,455
G-102375	Midwest Renewable Energy LL	27	14	33	TBD								
G-041198	Nebraska Public Power District	19	13	33	TBD	284,255,500	284,255,500	284,255,500	284,255,500	284,255,500	284,255,500	284,255,500	284,255,500
G-043107	Nebraska Public Power District	19	13	33	TBD								
G-043108	Nebraska Public Power District	19	13	33	TBD								
G-049632	Nebraska Public Power District	19	13	33	TBD								
G-064509	Nebraska Public Power District	21	13	33	TBD								
G-128029	Nebraska Public Power District	21	13	33	TBD								
G-128030	Nebraska Public Power District	21	13	33	TBD								
G-128033	Nebraska Public Power District	20	13	33	TBD								
G-128034	Nebraska Public Power District	16	13	33	TBD								
G-128035	Nebraska Public Power District	9	13	33	TBD								
G-128036	Nebraska Public Power District	9	13	33	TBD								
G-128037	Nebraska Public Power District	5	13	33	TBD								
G-128038	Nebraska Public Power District	18	13	33	TBD								
G-128039	Nebraska Public Power District	17	13	33	TBD								
G-128044	Nebraska Public Power District	13	13	34	TBD								
G-128046	Nebraska Public Power District	20	13	33	TBD								
G-128047	Nebraska Public Power District	16	13	33	TBD								
G-128048	Nebraska Public Power District	19	13	33	TBD								
G-128050	Nebraska Public Power District	29	13	33	TBD								
G-128051	Nebraska Public Power District	29	13	33	TBD								
G-128052	Nebraska Public Power District	21	13	33	TBD								
G-128053	Nebraska Public Power District	29	13	33	TBD								
G-128054	Nebraska Public Power District	29	13	33	TBD								
G-128055	Nebraska Public Power District	21	13	33	TBD								
G-128057	Nebraska Public Power District	21	13	33	TBD								
G-128059	Nebraska Public Power District	20	13	33	TBD								
G-128061	Nebraska Public Power District	21	13	33	TBD								
G-128062	Nebraska Public Power District	20	13	33	TBD								
G-128063	Nebraska Public Power District	16	13	33	TBD								
G-128064	Nebraska Public Power District	16	13	33	TBD								
G-128065	Nebraska Public Power District	16	13	33	TBD								
G-128066	Nebraska Public Power District	19	13	33	TBD								
G-162064	Paulsen Inc	1	14	38	TBD	1,953,600	1,200,000	1,421,800	1,859,500	1,100,400	1,088,200	1,024,700	969,400
G-102248	Sargent Pipe Company Inc	16	13	30	TBD	136,000	0	15,000	12,000	18,000	24,000	72,000	30,000
G-106443	CROELL/Western Engineering C	2	13	30	TBD	255,270	260,730	113,770	143,846	CLOSED	CLOSED	214,310	236,330
G-179459	Precision Pork	15	16	27	TBD			5,211,500	17,088,600	16,096,600	15,670,300	17,059,600	16,397,200
G-187043	McPherson Rural Fire Dept	12	18	32	TBD							16,600	7,500
G-190890	Ogallala Truck Wash	10	13	39	TBD							162,450	498,015
G-160889													
Pit Well	Pine Bluff Gravel - Ogallala/Brule Rds Project-2yr	16	13	39	TBD								2,394,900
	*Plant closed for 8 months in 2012												

X. OTHER WATER BANKING ACTIVITIES

A. The TPNRD has water banking software that is used for variances, transfers, and any other water banking purchases. Currently, the TPNRD does not have a district-wide stand-alone water bank.

XI. RETIRED ACRES AND OTHER STREAM FLOW ACCRETION ACTIVITIES

A. Currently the TPNRD has signed five year (2018-2022) memorandums of agreements with the Suburban, Platte Valley, Keith-Lincoln, Paxton-Hershey, and Western Irrigation Districts, so in times of excess flow, temporary recharge projects like the ones in 2011 could be replicated. In September 2013 flooding along the South Platte River allowed for another temporary recharge project. In conjunction with the State of Nebraska, three irrigation ditches (Platte Valley, Paxton-Hershey, and Western), and the TPNRD were able to get the necessary paperwork completed to allow for these irrigation ditches to divert water for recharge purposes for 27-37 days. In 2015, excess flows in the North and South Platte Rivers allowed for recharge projects in the spring for Western Irrigation Canal and the Platte Valley Irrigation Canal, and Western again for a week in the fall. In 2016, excess flows in the North and South Platte Rivers again allowed for recharge projects for 23-42 days in the spring for Keith-Lincoln, Platte-Valley, Suburban, Paxton-Hershey, and Western Irrigation Districts. These temporary water rights were applied to be permanent water rights during 2015, and we are waiting to hear back from the NDR.

B. Nebraska Cooperative Republican Platte Enhancement Project (N-CORPE) - The TPNRD partnered with NRDs in the Republican River Basin in Nebraska to develop the largest stream flow enhancement project of its kind in the state. The landmark conjunctive management project is considered the most cost-effective way to aid and protect the Platte and Republican Rivers, the agricultural economy across one of Nebraska's most productive agricultural regions, and taxpayers statewide by ensuring long-term compliance with Integrated Management Plans (IMP) and Interstate Water Agreements. Work is done to the well field, and the pipeline moving south is completed. Construction to the north pipeline began in the spring 2017 and was completed fall 2017. Annually the TPNRD's 25% share of the water is 4,000 ac-ft. The TPNRD's 25% share of water the Republican Basin pumped prior to limitations being placed on the N-CORPE wells in 2017, is an additional 1,597 ac-ft credit annually from 2020-2040.

C. The TPNRD estimates that 85% of the certified irrigated acres in the District are using conservation tillage. Recent university research (Klocke, et al, 2009) indicates that evapotranspiration (ET) is reduced by as much as three inches per acre on irrigated cropland, as compared to conventional tillage systems. If one inch of ET provided gains to the river, as much as 26,753 acre-feet of water would be conserved in the Platte Basin in the TPNRD annually through this conservation practice.

D. The TPNRD is working with the Cody-Dillon Ditch Company to work with their landowners and lease water rights from willing landowners. Approximately 200 acres were leased in 2015; nearly 500 acres were leased in 2016; another 100 acres were leased in 2017; 187 acres were leased in 2018; and 79.6 acres were leased in 2020.

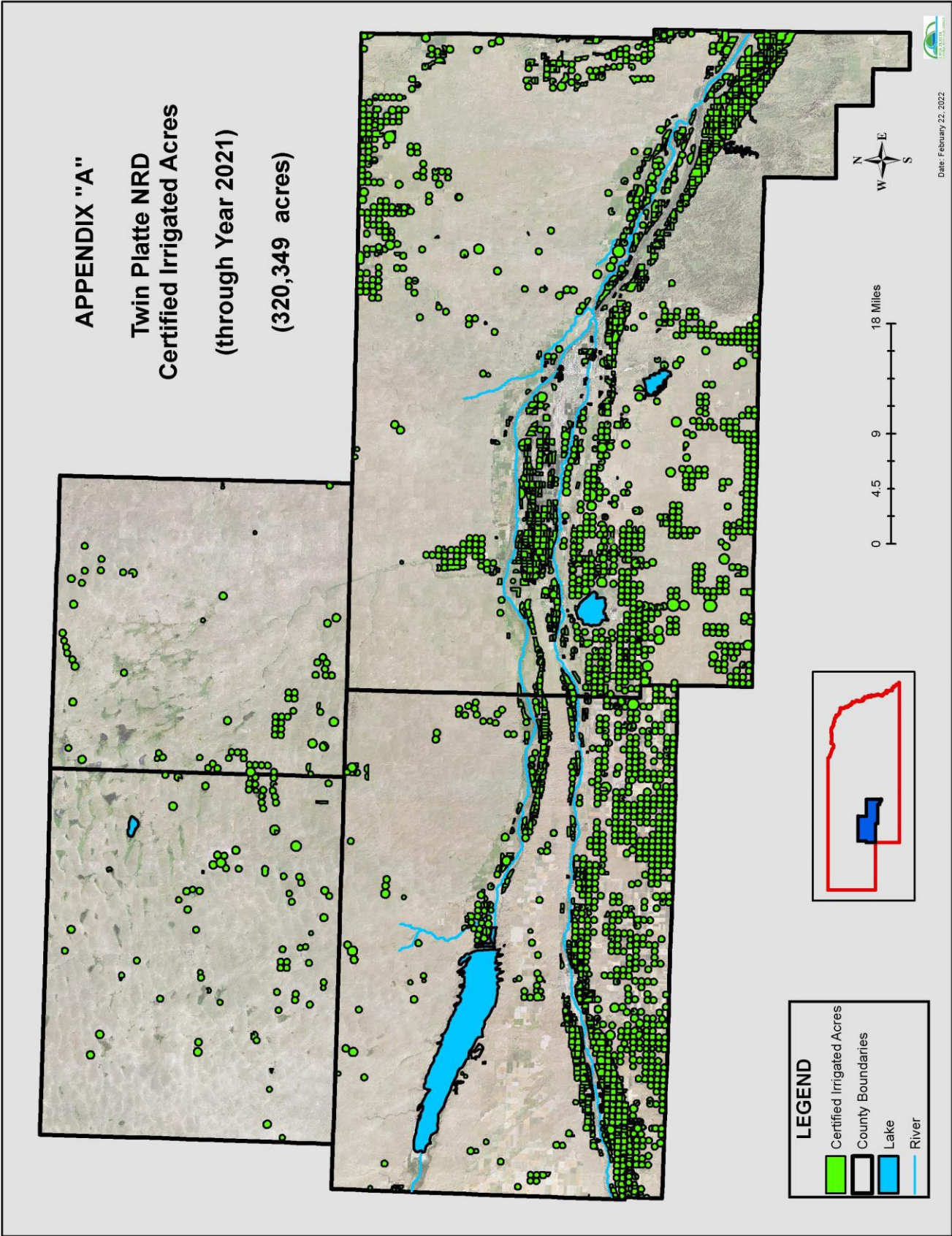
E. The TPNRD began a temporary not irrigate program in 2017. In 2021 there were forty-two landowners participating in the short-term program with 1,301.05 acres, and fifty three landowners enrolled 1,234.39 acres into the long-term program.

F. Additional projects are being looked at for the most efficient use of time and money to get water back to the river in the quickest time possible, i.e. converting CNPPID surface water users to ground water users, and working with surface water irrigation districts on different projects.

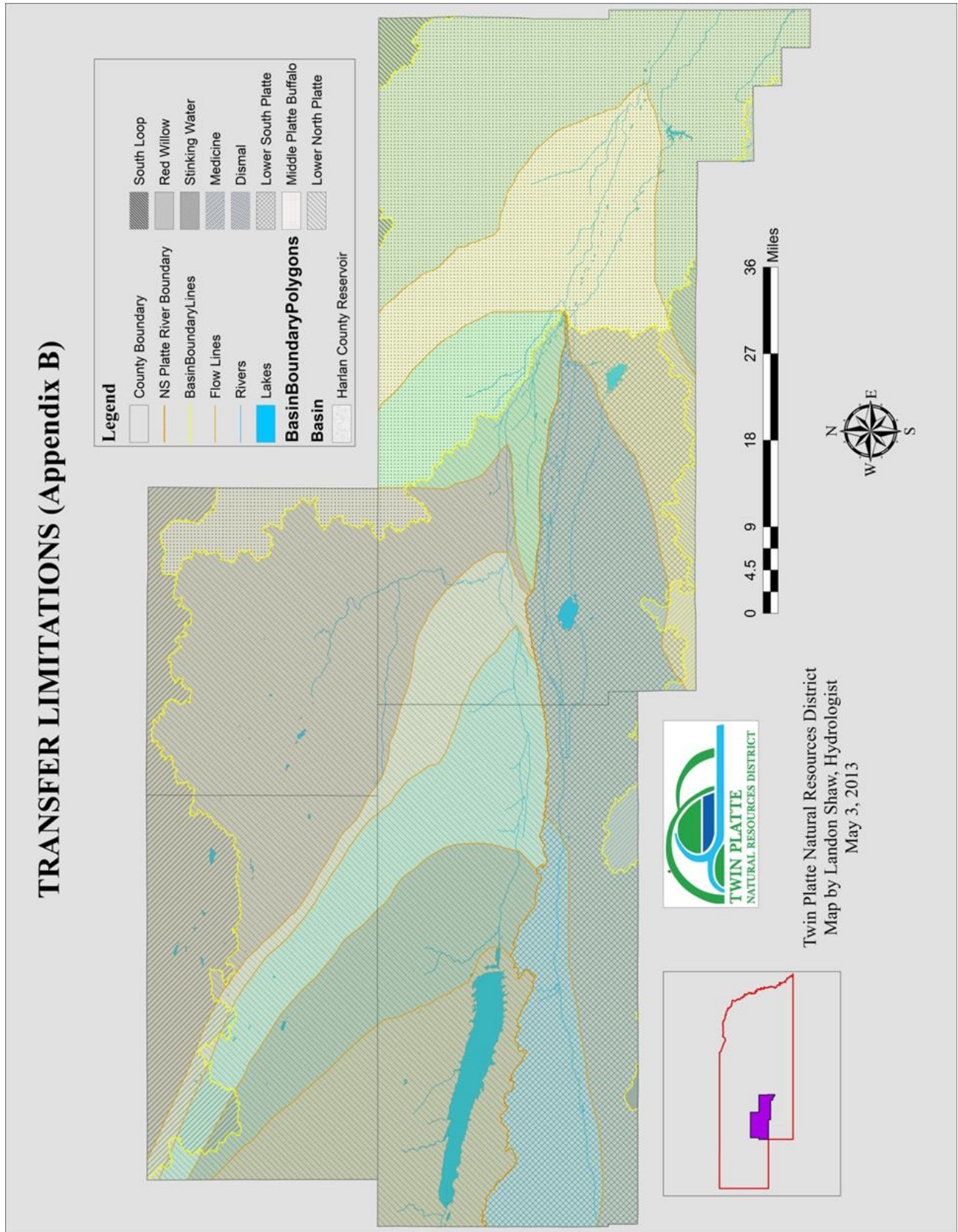
XII. GROUND WATER LEVELS

A. Tracking and reporting of ground water levels is not required in the IMP (Chapter 7.1.A.1 (a) and 7.1.A.2).

Appendix A. Certified Irrigated Acres through Year 2021



Appendix B. Transfer Limitations Map



Appendix C. Detailed Summary Tables for 2021 Transfers & Modification**New Acres in 2021**

<u>NRD PERMIT</u>	<u>PERMIT CODE</u>	<u>TOWNSHIP</u>	<u>RANGE</u>	<u>SECTION</u>	<u>SUBSECTION</u>	<u>ACRES</u>
TP-TRANS-21.01	Acre transfer	13	40	16	SW	2.70
TP-TRANS-21.02	Acre transfer	12	26	01	SW	20.75
TP-TRANS-21.03	Acre transfer	13	35	01	NE	4.38
TP-TRANS-21.03	Acre transfer	13	35	01	NW	3.52
TP-TRANS-21.03	Acre transfer	12	30	27	S	184.50
TP-TRANS-21.04	Acre transfer	13	40	21	SW	1.40
TP-TRANS-21.04	Acre transfer	13	40	21	S	9.00
TP-TRANS-21.05	Acre transfer	16	27	12	NW	115.00
TP-TRANS-21.06	Acre transfer	16	28	35	SE	133.85
TP-TRANS-21.07	Acre transfer	15	27	07	NW	10.75
TP-TRANS-21.08	Acre transfer	13	31	24	SW	8.00
TP-TRANS-21.09	Acre Transfer	12	27	21	N	5.97
TP-TRANS-21.09	Acre Transfer	11	26	27	NWNW	1.19
TP-TRANS-21.09	Acre Transfer	11	26	26	NW	0.50
TP-TRANS-21.09	Acre Transfer	11	26	26	SW	1.20
TP-TRANS-21.09	Acre Transfer	11	26	26	NW	0.25
TP-TRANS-21.09	Acre Transfer	11	26	26	NW	0.30
TP-TRANS-21.09	Acre Transfer	11	26	06	SESW	13.60
TP-TRANS-21.09	Acre Transfer	11	26	06	NW	3.60
TP-TRANS-21.09	Acre Transfer	11	26	06	SESW	3.15
TP-TRANS-21.09	Acre Transfer	12	27	19	SESE	0.78
TP-TRANS-21.09	Acre Transfer	12	27	19	SWSE	1.57
TP-TRANS-21.10	Acre transfer	12	27	26	NW	5.75
TP-TRANS-21.11	Acre transfer	13	39	36	SE	1.30
TP-TRANS-21.11	Acre transfer	13	39	36	SE	1.13
TP-TRANS-21.11	Acre transfer	13	39	36	SE	4.07
TP-TRANS-21.12	Acre transfer	13	31	13	E	25.84
TP-TRANS-21.12	Acre transfer	13	31	13	NE	19.85
TP-TRANS-21.13	Acre transfer	14	35	19	SW	16.10
TP-TRANS-21.13	Acre transfer	14	35	30	NW	1.25
TP-TRANS-21.13	Acre transfer	14	35	30	NW	2.65
TP-TRANS-21.14**	Acre transfer	14	31	16	NW	6.70
TP-TRANS-21.15	Acre transfer	13	37	16	NE	3.60
TP-TRANS-21.16	Acre transfer	19	37	29	S	111.00
TP-TRANS-21.17**	Acre transfer	13	29	08	SE	11.00
TP-TRANS-21.18	Acre transfer	14	33	30	NW	5.25
TP-TRANS-21.19	Acre transfer	14	34	19	W	8.70
TP-TRANS-21.21	Acre transfer	13	34	07	NWSW	30.83
						781.00

De-certified Acres 2021

NRD PERMIT	PERMIT CODE	TOWNSHP	RANGE	SECTION	SUBSECTION	ACRES
TP-TRANS-21.01	Acre Transfer	13	40	16	SWSW	2.70
TP-TRANS-21.02	Acre Transfer	12	26	01	SW	15.75
TP-TRANS-21.02	Acre Transfer	13	26	36	NWSW	7.00
TP-TRANS-21.03	Acre Transfer	13	35	01	NW	1.60
TP-TRANS-21.03	Acre Transfer	13	35	01	NE	3.65
TP-TRANS-21.03	Acre Transfer	13	35	01	NENE	0.45
TP-TRANS-21.03	Acre Transfer	16	36	12	E	34.32
TP-TRANS-21.03	Acre Transfer	16	36	12	W	133.33
TP-TRANS-21.03	Acre Transfer	16	36	12	N	16.85
TP-TRANS-21.03	Acre Transfer	13	35	01	SENE	2.20
TP-TRANS-21.04	Acre Transfer	13	40	21	SW	3.40
TP-TRANS-21.04	Acre Transfer	13	40	21	SE	4.62
TP-TRANS-21.04	Acre Transfer	13	40	21	SW	2.38
TP-TRANS-21.05	Acre Transfer	16	36	11	E	55.84
TP-TRANS-21.05	Acre Transfer	16	36	11	NE	30.16
TP-TRANS-21.06	Acre Transfer	16	36	12	SE	0.63
TP-TRANS-21.06	Acre Transfer	16	36	12	S	83.44
TP-TRANS-21.06	Acre Transfer	16	36	11, 12	SE, SW	38.66
TP-TRANS-21.06	Acre Transfer	16	36	11	NENE	1.57
TP-TRANS-21.06	Acre Transfer	16	36	11	NE	9.55
TP-TRANS-21.07	Acre Transfer	15	27	06	NW	4.13
TP-TRANS-21.07	Acre Transfer	15, 16	27, 27	06, 31	NW, SW	2.62
TP-TRANS-21.07	Acre Transfer	16	36	11	NE	4.00
TP-TRANS-21.09	Acre Transfer	12	27	17, 20	S, NW	5.97
TP-TRANS-21.09	Acre Transfer	12	27	17	SE	2.35
TP-TRANS-21.09	Acre Transfer	12	27	17, 20	SE, N	6.75
TP-TRANS-21.09	Acre Transfer	12	27	17		2.34
TP-TRANS-21.09	Acre Transfer	12	27	17, 18	NW, NE	3.66
TP-TRANS-21.09	Acre Transfer	12	27	17	NE	1.30
TP-TRANS-21.09	Acre Transfer	11	26	27	NW	1.19
TP-TRANS-21.09	Acre Transfer	11	26	26	W	1.90
TP-TRANS-21.09	Acre Transfer	11	26	26	SW	0.35
TP-TRANS-21.09	Acre Transfer	12	27	22	NE	6.29
TP-TRANS-21.10	Acre Transfer	12	27	24	N	5.75
TP-TRANS-21.11	Acre Transfer	13	37	10	NENW	6.50
TP-TRANS-21.12	Acre Transfer	13	31	13	NW	19.35
TP-TRANS-21.12	Acre Transfer	13	31	13	N	26.34
TP-TRANS-21.13	Acre Transfer	14	35	19	SW	8.10
TP-TRANS-21.13	Acre Transfer	14	35	19	SW	4.55
TP-TRANS-21.13	Acre Transfer	14	35	30	NW	4.05
TP-TRANS-21.13	Acre Transfer	14	36	25	NE	1.00
TP-TRANS-21.13	Acre Transfer	14	36	25	NE	1.55
TP-TRANS-21.13	Acre Transfer	14	35	30	NW	0.75
TP-TRANS-21.14**	Acre Transfer	14	31	16	SWNE	3.75
TP-TRANS-21.14**	Acre Transfer	14	31	16	SENE	0.45
TP-TRANS-21.14**	Acre Transfer	14	31	16	SWNW	2.50
TP-TRANS-21.15	Acre Transfer	13	37	10	NNW	3.60
TP-TRANS-21.16	Acre Transfer	16	36	11	NE	10.69
TP-TRANS-21.16	Acre Transfer	16	36	11	S	100.31
TP-TRANS-21.17**	Acre Transfer	13	29	22	NE	5.67
TP-TRANS-21.17**	Acre Transfer	13	29	15	SW	2.47
TP-TRANS-21.17**	Acre Transfer	13	29	15	NWSE	2.85
TP-TRANS-21.18	Acre Transfer	14	33	30	NWNW	4.08
TP-TRANS-21.18	Acre Transfer	14	33	30	NENW	1.17
TP-TRANS-21.19	Acre Transfer	14	34	19	SENE	8.70
TP-TRANS-21.21	Acre Transfer	13	37	09	NW	22.83
TP-TRANS-21.21	Acre Transfer	13	37	04	SW	8.00
						745.96

Appendix D. Detailed Tables for 2021 New & Replacement Well Permits**New Well Permits in 2021**

<u>NRD PERMIT</u>	<u>PERMIT CODE</u>	<u>DATE PERMITTED</u>	<u>NEW REGISTRATION</u>	<u>TOWNSHIP</u>	<u>RANGE</u>	<u>SECTION</u>
			<u>NUMBER</u>			
TP-NP-21.01	New Irrigation Well	1/15/2021	G-191647	12	30	27
TP-IN-21.02	Industrial Well	1/15/2021	NOT REGISTERED	13	39	15
TP-NP-21.03	New Irrigation Well	2/12/2021	G-191661	16	27	12
TP-NP-21.04	New Irrigation Well	2/11/2021	G-191654	16	28	35
TP-NP-21.05**	N/A	3/11/2021	N/A	13	30	21
TP-NP-21.06	New Irrigation Well	3/12/2021	G-192117	13	31	24
TP-NP-21.07	New Irrigation Well	3/11/2021	G-192073	12	28	15
TP-NP-21.08	New Irrigation Well	4/8/2021	G-191921	13	39	36
TP-NP-21.09	New Irrigation Well	5/14/2021	NOT REGISTERED	13	32	05
TP-NP-21.10	Domestic Well	8/13/2021	NOT REGISTERED	14	36	10
TP-NP-21.11	New Irrigation Well	9/13/2021	G-193077	19	37	29
TP-NP-21.13	New Irrigation Well	11/19/2021	NOT REGISTERED	13	34	07
TP-NP-21.14	New Irrigation Well	12/1/2021	NOT REGISTERED	14	35	24
**EXPIRED; did not drill the well; was going to be a 4 inch well; 3,000 gallons/day; 12.5 gpm						

Replacement Well Permits in 2021

<u>CONTRACT</u>	<u>S-T-R</u>	<u>REGISTRATION NUMBER</u>	<u>TOTAL IRRIGATED</u>
TP-RP-21.01	36-12-27	G-002848	151.25
TP-RP-21.02	10-14-37	G-076037	114.19
TP-RP-21.03	30-13-28	G-007615	76.81
TP-RP-21.04	30-12-26	G-116117	46.22
TP-RP-21.05	24-14-33	G-019718	150.23
TP-RP-21.06	15-11-30	G-060798	131.96
TP-RP-21.07	09-13-39	G-164349	128.06
TP-RP-21.08	34-19-38	N/A	0.00
TP-RP-21.09	24-14-35	G-021479	133.72
TP-RP-21.10	19-14-34	G-003683	125.34
TP-RP-21.11	32-13-40	G-011693	146.25
TP-RP-21.12	16-14-31	G-125023	69.68