



2025

LOWER PLATTE RIVER BASIN COALITION ANNUAL REPORT



The Middle Loup River near Loup City. Photo courtesy of Mike Wardyn.

March 1, 2026

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**2025 ANNUAL DOCUMENTATION OF WATER USE ACTIVITIES IN THE LOWER LOUP NRD
REQUIREMENT OF LOWER PLATTE RIVER BASIN COALITION (LPRBC)
BASINWIDE WATER MANAGEMENT PLAN**

CERTIFIED IRRIGATED ACRES

The Lower Loup Natural Resources District (LLNRD or District) began the process of irrigated acres certification in 2006, and it was completed January 1, 2008. The District required that both groundwater, surface, and comingled surface and groundwater irrigated acres be certified through its processes. The acres to be certified must be capable of receiving groundwater and/or surface water through irrigation works, mechanisms or facilities at the time. The certification must include a completed District certification form, an assessor document with a raised seal, and FSA aerial photo with irrigated fields delineated. A Geographic Information System (GIS) dataset of the field boundary was created using GIS software to allow accounting and compliance reviews.

After January 1, 2008, to certify a property as being irrigated, a landowner must show proof of irrigation at least 2 out of the 10 years for the period from 1997 – January 1, 2008. Certification is constantly tracked through GIS, and field boundary adjustments take place as needed. Annually, 4-band aerial imagery of the District is collected. This gives up to 0.25-meter resolution imagery in true color and near infrared band, which shows plant growth as brighter shades of red. Irrigation totals are measured and monitored to prevent deviation from the original certification by NRD staff. The aerial imagery is collected from August into early September to ensure crop maturity and further differentiate those areas impacted by irrigation.

Detailed data regarding amount and water source of certified irrigated acres in the period between January 1, 2018, and December 31, 2025, can be found in **TABLE 1. Certified Acres** below. The LLNRD GIS has been synced with its data management system to allow for more accurate drawings and better database access through the District program. This process assists with identification of duplicates and erroneously drawn fields and allows staff to regularly “clean” the database.

TABLE 1. CERTIFIED ACRES 2018 THROUGH 2025

Year	Total Acres Certified	Acres of Groundwater	Acres of Surface Water	Acres of Co-Mingled
2025	1,233,342.5	1,035,373.7	155,254.5	42,714.4
2024	1,233,421.6	1,035,534	155,144.2	42,743.4
2023	1,232,274.9	1,034,032.0	154,804.3	43,438.6
2022	1,230,788.6	1,032,302.9	155,013.9	43,471.8
2021	1,226,619.1	1,028,003.6	154,568.29	44,047.21
2020	1,225,343.3	1,025,409.78	154,023.50	45,910.02
2019	1,222,623.19	1,021,728.46	153,680.81	47,213.92
2018	1,220,592.42	1,018,792.98	153,789.92	48,009.51

MUNICIPAL AND INDUSTRIAL GROUNDWATER USE

The LLNRD is in the tenth year of collecting municipal water use data. Developing and maintaining a comprehensive inventory of the location and source of the District's current and future water supplies, water uses, and outflows was Objective 1.1 of the Integrated Management Plan developed by the NRD and the Nebraska Department of Water, Energy, and Environment (NDWEE). To collect this data, a Municipal Accounting Form was developed and sent to the water operators of each community.

As of February 2nd, 39 of the 42 public water supplies have sent in their water accounting information for 2025. Usage numbers for the communities of Albion, St Edward, and Merna were estimated, and will be updated when their annual reports are submitted to the NRD. Each year, the District calculates the daily use per person. This year, overall use was 247 gallons per capita, per day. This number was down slightly from last year's average of 252 gallons per capita, per day. The Village of Ericson reported that their village had increased usage this past year due to cattle going through at the Ericson Livestock Market. This is the reason for the high usage of 664 gallons per capita, per day, which was reported. Other reasons for increased usage included leaking swimming pools and additional water sold for highway construction projects. The 2020 Census provided the population numbers for each community.

To comply with the implementation of *Rule 15, Commercial or Industrial Use and Accounting* that was adopted into the LLNRD's Groundwater Management Area Rules & Regulations, 2025 usage information was sought from owners/operators that had registered commercial/industrial wells. This includes high-capacity livestock wells (pump 50 gallons per minute or more). The LLNRD is in its seventh year collecting this type of well use information. This year, the NRD received 60 reports from both commercial and livestock facilities.

The NRD has developed a database of all permitted Confined Animal Feeding Operations (CAFO). Data collected includes head numbers, or capacity that each facility is allowed. This provides the NRD with an estimated water usage, per facility, District-wide. GIS is utilized to display NRD drought zones and where large CAFOs are located within these areas.

TABLE 2: 2025 WELL USAGE (IN GALLONS) FOR LLNRD COMMUNITIES

City Name	Annual Water Pumped	Population	Gal/per capita/per day	Connections
City of Albion	135000000	1699	217.69	850
City of Broken Bow	361120612	3506	282.19	1600
City of Burwell	65200000	1087	164.33	602
City of Columbus	2139842446	24028	243.99	9048
City of Fullerton	78759000	1244	173.46	635
City of Genoa	47624000	894	145.95	475
City of Loup City	60700000	1053	157.93	560
City of Ord	403222000	2113	522.82	1334
City of Ravenna	139350228	1441	264.94	625
City of Saint Edward	60000000	725	226.74	340
City of Saint Paul	134607000	2416	152.64	1019
City of Sargent	35209300	500	192.93	392
Village of Anselmo	22109980	108	560.88	100
Village of Ansley	36991400	459	220.8	262

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Village of Arcadia	48758200	283	472.03	200
Village of Arnold	66340000	592	307.02	388
Village of Ashton	10419000	198	144.17	140
Village of Bartlett	20808600	109	523.03	70
Village of Belgrade	10200000	103	271.31	82
Village of Boelus	19606000	181	296.77	108
Village of Cairo	65725000	822	219.06	325
Village of Callaway	73468752	563	357.52	353
Village of Cedar Rapids	31712000	382	227.44	265
Village of Comstock	9129000	68	367.81	61
Village of Dannebrog	9784100	273	98.19	154
Village of Duncan	16658000	392	116.42	171
Village of Elba	6969500	192	99.45	125
Village of Ericson	21589100	89	664.59	32
Village of Farwell	12510000	138	248.36	60
Village of Greeley Center	33758105	402	230.07	235
Village of Litchfield	14412100	220	179.48	160
Village of Mason City	13778100	151	249.99	115
Village of Merna	25000000	343	199.69	205
Village of Monroe	22853000	296	211.52	139
Village of Palmer	24444000	439	152.55	239
Village of Petersburg	27654000	332	228.21	220
Village of Pleasanton	24148000	361	183.27	188
Village of Primrose	5763000	55	287.07	43
Village of Rockville	3440300	89	105.9	48
Village of Scotia	30677800	301	279.23	150
Village of Spalding	14469009	408	97.16	255
Village of Wolbach	68458000	224	837.3	188

*City of Ord provides water for the Village of North Loup and GreenAmerica Biofuels Ethanol Plant
Population numbers were updated by the 2020 Census

Albion, St Edward, & Merna usage numbers were estimated - will be updated when reports are submitted

TABLE 3: AVERAGE USAGE NUMBERS CALCULATED FOR ALL LLNRD COMMUNITIES

Lower Loup Natural Resources District	
<u>Year</u>	<u>Gallons/per capita/per day</u>
2016	265.0
2017	260.1
2018	230.3
2019	211.8
2020	252.6

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2021	263.5
2022	260.3
2023	258.5
2024	252.2
2025	247.5
10 Year Average	250.2

NEW GROUNDWATER CONSUMPTIVE USE – WELL CONSTRUCTION PERMITS GRANTED

The LLNRD established a well moratorium in 2007. Before this date, all high-capacity wells (greater than 50 gallons per minute) were required to be permitted via a certified well permit issued by the LLNRD as dictated by the Groundwater Management Plan. New well permits are still required for all high-capacity wells and may still be issued for supplemental and replacement wells. Any new high-capacity irrigation well must be previously approved through the variance process (see “Variance” portion of this report). LLNRD has approved 35 well permits in 2025 for varied uses as reported in the table below.

LLNRD affirms that any new water well or replacement well that is constructed after May 09, 2016, may be subject to additional restrictions as the Board of Directors deems reasonable and necessary considering hydrologic conditions within the District.

In accordance with District Rule 6.H, a permit to Construct a Water Well issued by the District shall specify all regulations and controls relevant to the construction or utilization of the water well or replacement well. As of April 15, 2023, all new wells requiring a permit shall have a flow meter, approved by the District, installed and operational prior to operation of the well.

TABLE 4: APPROVED GROUNDWATER WELL PERMITS IN THE LLNRD IN 2025

Groundwater Well Permit Types	Number of Permits	Average Pump Capacity (gpm)
Domestic	1	250.0
Livestock	1	150.0
Fire Suppressant	1	350.0
Public Water Supply	1	1500.0
Industrial	2	500.0
Total	6	550.0
Irrigation (Total)	29	726.8
(Irrigation) Transfer	3	625.0
(Irrigation) Supplemental	3	700.0
(Irrigation) Well Agreement	3	617.0
(Irrigation) New Acres	1	800.0
(Irrigation) Replacement	19	892.0
Total	35	638.4

APPROVED WATER TRANSFERS

The LLNRD Rules and Regulations allow any person to transfer groundwater irrigation rights from one location to another if the acres are certified, with history, by the District. Transfers can only occur downstream or to the adjacent section and cannot have a net increase impact on any stream based on the most recent stream depletion factor from the best groundwater model available. Acre transfers are only allowed to occur once per year. The deadline for application for transfer is March 1 of each year. Transfers are generally not allowed into

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triggered Water Quality Management Areas, Designated Water Quantity (Drought) Areas, and Well Interference Zones where the additional development may have negative impacts on groundwater quality or quantity. In 2025, the LLNRD approved 43 **Agreements to Transfer Certified Irrigated Acres & Right to Use Groundwater**. There were no denials of any transfer requests. See the summary in Table 5 below. Transfer agreements are classified both by landowners who are moving their irrigated acre rights (off) and those that are receiving the rights in another location (in). Wells resulting from an approved transfer may not be reflected in the “Well Permit Granted” table under the current year.

TABLE 5: APPROVED CERTIFIED IRRIGATED ACRES TRANSFERS IN THE LLNRD IN 2025

County	# of Agreements Receiving Landowners	# of Agreements Transferring Landowners	Acres Transferred in	# New wells resulting from Transfer	Acres Transferred off	Avg Transferred In SDF	Avg Transferred Off SDF
Boone	4	4	71.00	0	63.97	0.77	0.76
Custer	16	14	145.18	3	133.48	0.45	0.62
Garfield	0	3	0.00	0	106.00	na	0.42
Greeley	3	1	90.10	1	10.10	0.27	0.40
Hall	0	1	0.00	0	18.30	na	0.52
Howard	1	0	15.30	1	0.00	0.62	na
Loup	2	2	18.00	0	18.00	0.88	0.90
Nance	3	3	34.70	0	50.50	0.72	0.82
Platte	11	10	92.03	0	72.03	0.40	0.39
Rock	0	2	0.00	0	30.00	na	0.15
Sherman	0	2	0.00	0	12.50	na	0.81
Valley	2	0	30.00	0	0.00	0.14	na
Wheeler	1	1	47.80	0	47.80	0.46	0.56
Total	43	43	544.11	5	562.68	.52	.58

WATER BANKING

The LLNRD requires that all transfers result in no new net increase in depletions to any stream utilizing the most current stream depletion number extracted from each section. The section number is averaged by the best available groundwater/surface water model for use by LLNRD. The 2025 section-assigned stream depletion factor (SDF) was utilized using the USGS Elkhorn-Loup Model (ELM) in its Phase 3 capacity. Any transferring of irrigated acre rights from a low to a higher SDF requires an offset. Acres transferred from a higher SDF to a lower SDF are only allowed at a 1:1 ratio, with the LLNRD banking the remaining difference. As a result of the 43 transfers that took place in 2025, the LLNRD has banked a total of **318.53** groundwater-irrigated acres. Additional information regarding the ELM project can be found here:

<https://pubs.er.usgs.gov/publication/sir20185106>

TABLE 6: LLNRD TOTAL BANKED ACRES REPORTED

Lower Loup Natural Resources District	
Year	Irrigated Acres

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2016 (34)	638.06
2017 (34)	223.92
2018 (48)	346.35
2019 (31)	133.97
2020 (22)	141.88
2021 (47)	1,294.7
2022 (75)	723.39
2023 (67)	448.72
2024 (56)	566.73
2025 (43)	318.53
10 Year Total	4,836.25

EXPEDITED VARIANCES

The LLNRD Board of Directors has designated a set of conditions under which specific requests for a variance may be approved by methods other than the Variance Committee process. An expedited variance is a variance that meets LLNRD Board pre-approved conditions and as such does not need to be reviewed by the NRD Variance Committee. These expedited variances all have a Supplemental Well Agreement. There were no denials to any expedited variance requests. In 2025, there were a total of 5 expedited variances (Table 7) that were approved through NRD processes. Supplemental wells have a requirement of historical use prior to 2006.

TABLE 7: APPROVED EXPEDITED VARIANCES IN THE LLNRD IN 2025

County	# of Supplemental Well Agreements	Permit Approved	Approved agreement, but waiting on a Permit
Custer	2	1	1 approved, 1 pending 0
Greeley	1	1	0
Platte	2	1	1 approved, 1 pending 0
Total	5	3	2

NRD MANAGEMENT: WELL AGREEMENTS

In 2025, there were 5 well agreements approved. These well agreements were granted based on the stipulation that the landowner relinquish all or part of the existing surface water right held through the Department of Water, Energy, and Environment processes. There were no denials of any variances with a well agreement request. The 2025 Variances include all surface water relinquishments and added groundwater depletions due to decisions recommended by the NRD Variance Committee.

TABLE 8: APPROVED WELL AGREEMENTS IN THE LLNRD IN 2025

County	# of Well Agreements	SW Agreed upon to be Relinquished: full or partial	Permit Approved	SW Right Relinquishment Date
Custer	1	A-13657 (Full) A-5942 (Full) allowed as Transfer if Relinquished	1	Waiting on Relinquishment
Loup	1	A-11633, A-11634 (Full)	1	9/3/25
Platte	3	A-17262 (Partial) A-9130 (Full) A-8133, A-17887 (Partial)	1	A-17262, needs Relinquished A-9130, 2/10/25 A-8133, A-17887, 4/18/25

Total	5		3	

SURFACE WATER ALLOCATION CONVERSION TO GROUNDWATER USE

As surface water rights are either converted to groundwater acres or completely retired, the LLNRD has initiated a tracking mechanism that incorporates the basin-wide depletion accounting and its effect on the available acre-feet of depletions. According to the LLNRD and consultants who developed the tracking mechanism for depletions, an overall credit can be claimed to the affected basin for the unused depletions and applied to the existing allowable acre-foot depletion balance if proper procedures are met. These procedures are enacted when surface water rights are fully relinquished and converted to groundwater acres, if those surface water rights are located along stream reaches impacted by baseflow and are not associated with irrigation district water rights. Credit is being claimed by the LLNRD for these surface water retirements. Appropriate credit is determined by subtracting the difference of the full depletion amount of the surface water right from the groundwater impacts using stream depletion, net irrigation requirement in feet, and number of acres associated with the conversion. The LLNRD can provide historical evidence of irrigation through infrared photography collected since 2006. The NeDWEE is expected to provide field inspection reports and adhere to the adjudication process defined by Nebraska Revised Statutes.

NRD MANAGEMENT: ACRE ROTATIONS

Acre rotations are agreements set forth by a participating landowner and the LLNRD, which allows the landowner an option to choose how they distribute certified acres over a tract of land. In 2025, there were two (2) acre rotations approved by the LLNRD. Acre Rotation Agreements have 2 or 3 options the landowner can choose in one calendar year. Acres remain in this rotation pattern until the landowner notifies the LLNRD otherwise. Enforcement is conducted by the LLNRD through annual infrared imagery and field personnel visitation.

TABLE 10: APPROVED ACRE ROTATIONS IN THE LLNRD IN 2025

County	# of Acre Rotation Agreements Approved
Nance	2
Total	2

FLOW METER DATA

The LLNRD has collected groundwater and surface water use information for irrigation on an annual basis since 2010. Flow meters have been cost-shared across the District on a voluntary basis since 2009. However, the LLNRD required that all high-capacity irrigation wells in Groundwater Management Area 28 be outfitted with a flow meter to track irrigation total withdrawals starting in 2016. The two newest groundwater quality management areas, Subareas 29 and 30, also require flow meters. Groundwater Quality Management Areas 28-30 constitute 558 of all flow meters in the District. In February 2024, the LLNRD designated a Groundwater Quantity Area that requires flow meters on all high-capacity wells. Landowners have 2 years to comply within the area south of the South Loup River in Buffalo County and south of the Loup Power canal in Platte County.

In 2025, LLNRD collected records of water use from 1,733 flow meters verified as having an actual irrigation total water volume. The District average pumping withdrawals for irrigation for the 2025 season was 5.65 inches, down 2.87 inches from 2024. The potato crop had the highest irrigation average at 18.63 inches/acre pumped. Corn/soybeans crops had the lowest average irrigation at 3.67 inches/acre. Of the counties with at least a

double-digit number of flow meters, the lowest county average irrigation recorded was Boone County with 2.97 inches/acre and the highest was Wheeler County with 10.78 inches/acre.

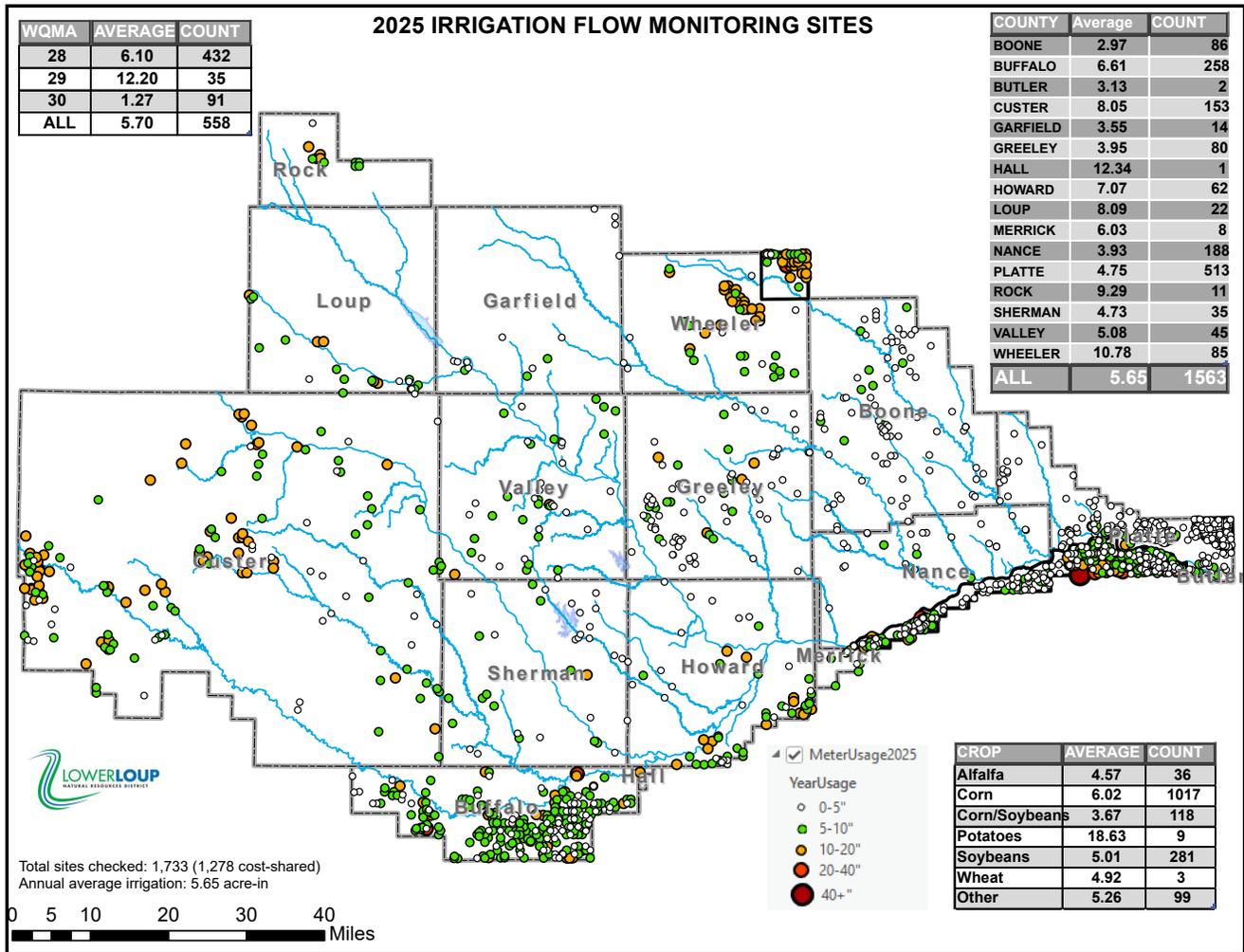


FIGURE 1: IRRIGATION MEASURING AND REPORTING SITES IN THE LLNRD IN 2025

GROUNDWATER ACRES ALLOCATIONS

The LLNRD has the option to issue additional groundwater allocations each year based on the conditions of water resources in the District. Due to ongoing drought conditions in most of the Loup Basin, lower than normal stream flows, and instream flow numbers that were causing administrative action requirements on instream flow rights, no additional irrigated acres were allocated during the 2025 application period. This results in a net loss of 0 acre-feet to the Lower Loup NRD depletion accounting due to new groundwater acre allocations.

DEPLETION ACCOUNTING

As mentioned in “Approved Water Transfers,” LLNRD Rules and Regulations allow any person to transfer irrigation rights from one location to another if they meet the criteria set forth by the District. Because of the established criteria for not allowing any new net increase in depletions to any stream, the net impact of acre-feet should be either similar by a transfer or decreased due to any transferring of irrigated acre rights to a higher

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SDF, which would require an offset in acres. Transfers from a higher SDF to a lower SDF are only allowed at a 1:1 ratio. The same agricultural methodologies used on groundwater acres applications were applied to transfers. Both the transferring location, where the acres were removed, and the newly developed acres, where the right was transferred to, were assessed. Table 13 represents the net effect of all transfers in acre-feet through the year 2025.

From the 2025 transfers, the sum impact of the transferred depletions removed was Acre-Feet on 44 total transfer agreements, while the impact of the receiving acres with new development was Acre-Feet. The difference and beneficial impacts were Acre-Feet back to the basin as a positive gain.

TABLE 13: SUMMARY OF ALLOWABLE DEPLETION IMPACT

Lower Loup Natural Resources District	
Project	<u>11,908.00 AF</u>
2016 New Irrigated Acres	-204.52
2016 Transfers	+69.66 ^a
2017 New Irrigated Acres	-164.65
2017 Transfers	+40.88 ^a
2018 New Irrigated Acres	-275.30 ^b
2018 Transfers	+66.67 ^a
2019 New Irrigated Acres	-245.48 ^c
2019 Transfers	+19.85
2020 New Irrigated Acres	-216.02 ^d
2020 Transfers	+19.98
2020 Variances	-29.30
2016-2020 SW/GW Conversion	+558.15
2021 New Irrigated Acres	-310.38 ^e
2021 Transfers	+47.15
2021 Variances	-85.95 ^e
2021 SW/GW Conversion	+105.6
2022 New Irrigated Acres	-89.55
2022 Variances	-21.18
2022 Transfers	+136.29 ^f
2023 New Irrigated Acres	0
2023 Variances	-3.01
2023 Transfers	+74.67 ^g
2024 Variances	-6.86
2024 Transfers	-47.62
2025 Variances	-0.01
2025 Transfers	-21.61 ^h
Allowable Depletion Total	11,368.54 AF

^a Revised February 2020; corrections made to some transfers for 2016, 2017, and 2018

^b Revised June 2019; not all approved acres were certified by applicants in 2018

^c Revised August 2020; not all approved acres were certified by applicants in 2019

^d Revised August 2021; not all approved acres were certified by applicants in 2020

^e Revised August 2022; not all approved acres were certified by applicants in 2021

^f Revised December 2024; acre certification revisions by owners in 2024

^g Revised January 2024; transfers calculated using 1995 to 2020 NIR

^h Five transfers use SDF value from LPMT area analytical model results because they are outside of the ELM 3 domain, downstream of the confluence of the Loup and Platte Rivers.

GROUNDWATER ELEVATION DATA

One of the LLNRD's primary responsibilities since its inception in 1972 has been collecting groundwater elevation data. Each year, District personnel measure groundwater elevations in both the spring and fall to compare against historical levels. Spring levels are used to report on the status of groundwater, whether increasing or decreasing, and to determine if potential changes are needed in the District. Fall levels are used as an indicator of stress that has been placed on the aquifer during the irrigation season. The District has employed the use of pressure transducers to get continual monitoring. To date, the LLNRD has 77 active transducers across the District recording water levels every 8 hours. Additionally, the District implemented a real-time transducer network in the Columbus area as part of the recharge project. Dedicated monitoring wells contain telemetry equipment that collects an hourly reading on 5 monitoring well sites, as well as an artificial lake in the area that will be used as part of the recharge basin.

In spring 2025, LLNRD staff collected groundwater level depths on 455 sites, including both dedicated monitoring and irrigation wells. Between spring 2024 and spring 2025, there was a 0.03 ft average static water level increase across the District. The 1982 groundwater level is used by the Lower Loup NRD's Groundwater Management Plan as the keystone level to implement additional management action. The District average is 4.23 ft above the 1982 level. In fall 2025, 492 static water level sites were measured.

NEW DATA COLLECTED OR MODEL/STUDY RESULTS

The LLNRD Drought Management Plan, accepted by the Board of Directors on November 17, 2022, provides measures to monitor drought severity and susceptibility across the entire NRD. Triggers for additional management are based on spring static water level measurements, the State Drought Monitor Map status, stream flows, localized well issues, and field reports. The majority of the District experienced moderate to severe drought in the first half of 2025 but decreased to no and lower drought levels, according to the U.S. Drought Monitor.

LLNRD and HDR continue to work on the Nance County Model (NC Model) commenced in late 2024. The model encompasses a large area of Nance County known to have minimal saturated thickness, limited groundwater development, low aquifer transmissivity, and has a higher likelihood of negative well impacts than the rest of the Loup Basin. The model will incorporate AEM (airborne electromagnetic) survey data collected by Cornerstone Mapping in 2022. Once completed, the NC Model will help LLNRD staff assess management strategies for problems unique to the area and whether a more robust restriction zone should be established. Primary goals include protecting water users and calculating a water balance for long-term sustainability of the aquifer. Data collection has been completed, and the conceptual model is in progress.

The Buffalo County Groundwater Model (BC Model), completed in late 2024 with LRE and The Flatwater Group, is being integrated into the Groundwater Elevation Toolbox by Olsson. The BC Model also utilized AEM surveying in the northern portion of Buffalo County within the District. This localized model will be used to assess management strategies including the impact of excess South Loup River water diverted in a retiming cell to augment groundwater and the area ethanol plant expansion's effect on groundwater allocation, drawdown, and long-term water levels.

COLUMBUS AREA GROUNDWATER RECHARGE PROJECT

The Columbus Area Recharge Project was developed because of significant groundwater depletions in an area on the southeast edge of Columbus, NE. The LLNRD initiated the project and gathered partners including Archer Daniels Midland, City of Columbus, Platte County, and the Christopher's Cove Homeowners Association that worked collectively to develop and complete the project. The project fundamentals involve providing the area

with additional groundwater recharge by conveying supplemental surface water to areas of high potential recharge. The project surface intake pump station transfers surface water from the nearby Loup Tailrace canal and discharges it into the Lost Creek channel near the city. The water infiltrates into a dry creek channel, recharging the area's groundwater. The project also discharges recharged water from an auxiliary well into Christopher's Cove, which is a nearby water body used by the project for additional groundwater recharge storage. The recharged water provided by the project offers more stable groundwater levels for public use, especially in dry years.

The 2025 operating season began on April 1, 2025, and ended on September 17, 2025. During 2025, frequent rain events prevented the project from operating, resulting in less estimated project recharge than in previous years. Project operations were based on several factors including groundwater levels, surface water levels, weather conditions, and channel conditions. The surface intake pump station operated for 97 days for an approximate total of 627 acre-feet of water. The auxiliary well operated 65 days for an approximate total of 154 acre-feet of water. The 2025 operating season estimated groundwater recharge amount is 595 acre-feet of water. The calculations consider volume of water pumped, recharge area, potential recharge rates, evapotranspiration rates, and other factors that may affect groundwater recharge. The recharge estimates do not consider amounts from Christopher's Cove although groundwater recharge is evident when comparing pumped volumes to measured lake water levels. Project groundwater modeling demonstrated Christopher's Cove effectively retains and retimes water in the project area.

NON-ACTION/REPORTING ITEMS

The Coalition members are responsible for reporting on items that are currently not included as part of the LLNRD day-to-day operations. These Items include:

- Retirement of Groundwater Consumptive Uses
 - LLNRD does not currently have a need for large retirement of groundwater consumptive use.
- Stream Flow Accretion Activities
 - Transfers allowed by the NRD do not have a negative net impact on the stream and theoretically result in neutral or positive effects on streamflow, see "APPROVED WATER TRANSFERS" above.
 - Under "NRD MANAGEMENT: WELL AGREEMENTS" the LLNRD is taking proactive measures to reduce surface water allocations, switching those primary sources to groundwater which would result in an immediate reduction to streamflow impacts and likely cause accretion to flows in the impacted stream.
- Stream gage measurements on NRD maintained gages
 - LLNRD has no stream gages under its operational authority; however, the LLNRD is a partner with both the NeDWEE and USGS in the operations of various streams across the Loup Basin.
- Instream Flow Requests
 - The LLNRD submitted a request for an instream flow application to the Nebraska Department of Water, Energy, and Environment. An order of approval was received by the NRD on May 31, 2022. The application is in consideration of the value of benefits to fish, wildlife, recreation, out-of-stream uses, and economic impacts. The flow reach begins at the confluence of the North and Middle Loup Rivers near St. Paul and extends to the Loup Power canal near Genoa. The application included supporting scientific, economic, biological, and hydrological data and information.

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- The instream flow request at the confluence of the North Loup River and Middle Loup River varies depending on the time of year. This instream flow is the sum of flows at gages on each river near St. Paul. A review of the daily stream flow data for the calendar year 2025 shows that requested flows were not met on 86 days during the year.

Summary of 2025 Instream Flows

Time Period	Flow Req.	Days with flow less than Flow Request	Daily Average (cfs)	
			Period	Year
Jan 1 - Feb 28	1,700	32	1712	2365
Mar 1 - May 31	2,400	41	2396	
Jun 1 - Aug 31	1,700	13	2676	
Sep 1 - Dec 31	1,600	0	2418	
Total		86		