

# Nebraska Department of Natural Resources 2024 Annual Report



of 2023 Data for the

Lower Platte River Basin Coalition's  
*Basin Water Management Plan*

**NEBRASKA**  
Good Life. Great Water.  
DEPT. OF NATURAL RESOURCES

## Contents

<b>1. Introduction.....</b>	<b>3</b>
<b>2. Surface Water and Groundwater Monitoring .....</b>	<b>4</b>
A. NeDNR Streamgauge Monitoring .....	4
B. NeDNR Irrigation Canal Monitoring .....	5
C. Surface Water Pump Site Monitoring.....	6
D. Surface Water Administration.....	7
E. Surface Water Permits for Induced Groundwater Recharge (Previously Issued) .....	8
F. Groundwater Permits (Previously Issued by NeDNR).....	9
<b>3. NeDNR Surface Water and Groundwater Permitting Activities .....</b>	<b>12</b>
A. Surface Water Permitting Activity.....	12
B. Groundwater Permitting Activity.....	28
<b>4. Estimated Stream Depletions for New Surface Water Permits .....</b>	<b>29</b>
<b>5. Basin Plan Implementation: Research, Projects, and Studies .....</b>	<b>34</b>
A. Coalition annual reporting database .....	34
B. Groundwater modeling and studies .....	34
C. Drought Planning .....	35

## Figures

Figure 1. Map of Lower Platte River Basin Coalition NRDs.....	3
---	---

## Tables

Table 1. A listing of NeDNR maintained streamgages.....	4
Table 2. A listing of NeDNR irrigation canal measurement sites .....	5
Table 3. Surface water pump site inspections conducted in 2023 .....	6
Table 4. 2023 Lower Platte River Basin Surface Water Administration .....	7
Table 5. City of Lincoln and MUD surface water permits for induced groundwater recharge.....	8
Table 6. Municipal groundwater transfer permits held by the City of Lincoln and MUD.....	9
Table 7. NeDNR groundwater permits (previously issued).....	9
Table 8. Surface water applications approved in 2023 within the Lower Platte River Basin.....	14
Table 9. Surface water applications approved in 2023 outside of the Basin .....	14
Table 10. Expired or cancelled surface water appropriations in 2023 within the Lower Platte River Basin.....	16

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 11. Expired or cancelled surface water appropriations, outside of the Basin .....	20
Table 12. Appropriation(s) approved for a change of appropriation (non-expedited transfer) .....	21
Table 13. Appropriations granted a location of use transfer (expedited transfer).....	22
Table 14. Twin Loups Reclamation District 2023 filings.....	24
Table 15. Loup Basin Reclamation District 2023 filings .....	24
Table 16. Twin Loups Reclamation District’s 2023 filings grouped by water source .....	25
Table 17. Loup Basin Reclamation District’s 2023 filings grouped by water source .....	25
Table 18. District Transfer Approved by the Loup Basin Reclamation District, Sargent Irrigation District .....	26
Table 19. District Transfer Approved by the Loup Basin Reclamation District, Farwell Irrigation District.....	27
Table 20. 2023 Groundwater Permitting Activity for Lower Platte Basin .....	28
Table 21. Estimated stream depletion by NRD for newly permitted surface water uses and acres. ....	30
Table 22. Estimated accretions for previously taken depletions that no longer occur.....	31
Table 23. 2016 to 2021 estimated surface water stream depletions and accretions .....	32
Table 24. 2023 estimated surface water stream depletion and accretions .....	33

## 1. Introduction

In April 2013, The Nebraska Department of Natural Resources (NeDNR) and seven Natural Resources Districts (NRDs) entered into an Interlocal Cooperative Agreement to form the **Lower Platte River Basin Water Management Plan Coalition** (Coalition). The Nebraska Association of Resource Districts (NARD) serves as the coordinator on behalf of the Coalition. The members of the Coalition are:

- Lower Platte South NRD,
- Lower Platte North NRD,
- Papio-Missouri River NRD,
- Lower Loup NRD,
- Lower Elkhorn NRD,
- Upper Elkhorn NRD,
- Upper Loup NRD, and
- NeDNR.

The Lower Platte River Basin (Basin) overlies portions of central and eastern Nebraska (Figure 1). The Coalition recognizes the hydrologic connectivity of groundwater and surface water resources within the Basin and desires to work together to manage the resources. The Coalition jointly developed and adopted the Lower Platte River Basin Water Management Plan (Plan) in 2018 to protect and sustain the long-term balance between the water uses and water supplies. The Plan requires reporting on an annual basis, which this report serves to fulfill.

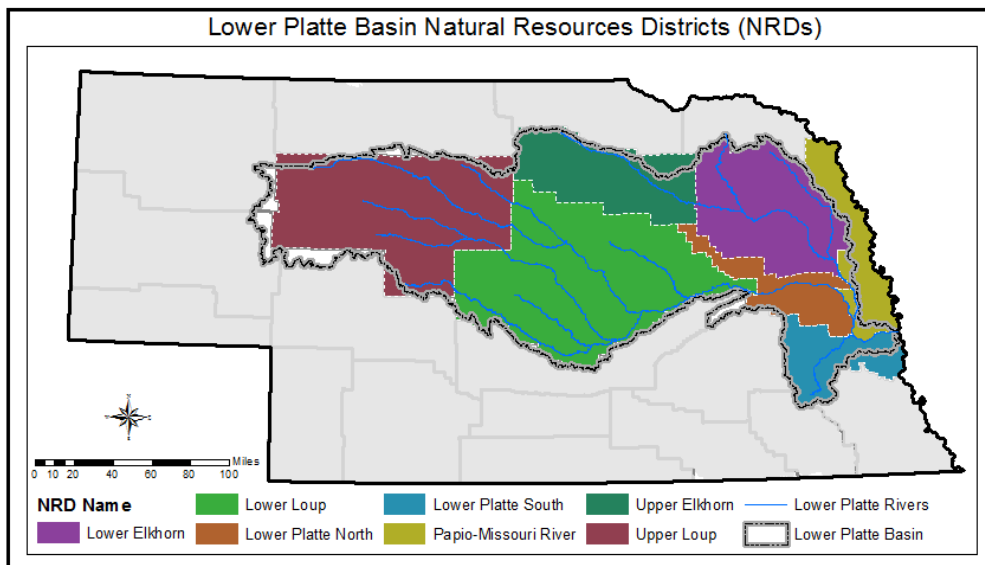


Figure 1. Map of Lower Platte River Basin Coalition NRDs

## 2. Surface Water and Groundwater Monitoring

### A. NeDNR Streamgauge Monitoring

NeDNR is authorized to measure and monitor the water flowing in Nebraska streams. Within the Basin, NeDNR maintains 21 streamgages (Table 1). Additional gages are maintained by the U.S. Geological Survey (USGS). Instantaneous and historical streamflow data for both NeDNR and USGS gages may be accessed by visiting NeDNR's interactive streamgaging map at [Data - NeDNR Real Time Water \(aquaticinformatics.net\)](https://data-nebraska.nebraska.gov/real-time-water). All website data are provisional and subject to revision unless otherwise denoted.

*Table 1. A listing of NeDNR maintained streamgages*

NeDNR Streamgages in the Lower Platte River Basin		
Station Name	Station Number	River Basin
Middle Loup River at Rockville	6780000	Loup
Mud Creek near Sweetwater	6783500	Loup
Turkey Creek near Dannebrog	6784800	Loup
Calamus River near Harrop	6787000	Loup
Calamus River near Burwell	6787500	Loup
North Loup River at Ord	6788500	Loup
Mira Creek near North Loup	6788988	Loup
Cedar River near Spalding	6791500	Loup
Cedar River near Fullerton	6792000	Loup
Beaver Creek at Loretto	6793500	Loup
Loup River at Columbus	6794500	Loup
Willow Creek near Pierce	232500	Elkhorn
Elkhorn River near Atkinson	6796973	Elkhorn
South Fork Elkhorn River near Ewing	6798000	Elkhorn
Elkhorn River at Neligh	6798500	Elkhorn
Elkhorn River near Tilden	6798780	Elkhorn
Willow Creek near Foster	6799080	Elkhorn
Union Creek at Madison	6799230	Elkhorn
Pebble Creek at Scribner	6799385	Elkhorn
Logan Creek at Pender	6799450	Elkhorn
Elkhorn River near Winslow	6799510	Elkhorn

## B. NeDNR Irrigation Canal Monitoring

In addition to streamgaging, NeDNR monitors and measures major surface water diversions at 21 sites across the Basin (Table 2). Instantaneous and historical canal diversion data may be accessed at NeDNR’s interactive streamgauge map at: [Data - NeDNR Real Time Water \(aquaticinformatics.net\)](https://data-nebraska.gov/aquaticinformatics).

*Table 2. A listing of NeDNR irrigation canal measurement sites*

NeDNR irrigation Canal Measurement Sites		
Canal Name	Canal Number	River Basin
Calamus Fish Hatchery inlet from Calamus	19800	Loup
Farwell (Sherman Feeder) Canal from Middle Loup River	47000	Loup
Farwell Main Canal from Sherman Reservoir	48000	Loup
Farwell South Canal from Sherman Reservoir	49000	Loup
Fullerton Canal from Davis Creek Reservoir	54700	Loup
Kent Canal from North Loup River	76500	Loup
Loup River Power Canal Return at Columbus	82100	Loup
Inlet Canal to Davis Cr. Res. from Mirdan	88500	Loup
Middle Loup Canal No. 1 from Middle Loup	90000	Loup
Middle Loup Canal No. 1 Pump from Middle	90200	Loup
Middle Loup Canal No. 2 from Middle Loup	91000	Loup
Middle Loup Canal No. 3 from Middle Loup	92000	Loup
Middle Loup Canal No. 4 from Middle Loup	93000	Loup
Middle Loup Canal No. 4 from Sherman Feeder Canal	93200	Loup
Mirdan Canal from Calamus Reservoir	100500	Loup
Taylor-Ord Canal from North Loup River	107000	Loup
Taylor-Ord Canal inlet to Mirdan Canal	107100	Loup
Taylor-Ord Canal outlet from Mirdan Canal	107200	Loup
Burwell-Sumter Canal from North Loup River	108000	Loup
Ord-North Loup Canal from North Loup River	109000	Loup
Sargent Canal from Middle Loup River	130000	Loup

### C. Surface Water Pump Site Monitoring

The NeDNR field office staff regularly inspect pump sites of permitted surface water diversions as a part of surface water monitoring. Depending on conditions and staffing, not all pump sites are inspected every year, and some pump sites may be visited more than one time per year. NeDNR field offices within the Basin are in Lincoln, Norfolk, and Ord, Nebraska. Table 3 provides a listing of surface water pump site inspections conducted in 2023. The data are organized by NRD and provide information about the total number of surface water appropriations, the number of pump sites inspected, and, of those, how many sites were set up for irrigation at the time of the inspection. It should be noted that some pump site inspections occur outside of prime irrigation season, so sites without a pump set up may not have done so yet for the season.

*Table 3. Surface water pump site inspections conducted in 2023*

2023 Surface Water Pump Site Inspections			
NRD	Total Number of Permits	Number of pump site Inspections	Number of pump sites set up for irrigation
Lower Elkhorn	344	341	85
Lower Loup	758	656	368
Lower Platte North	137	137	24
Lower Platte South	149	130	11
Papio-Missouri River	51	49	17
Upper Elkhorn	73	71	14
Upper Loup	24	18	0
<b>Total</b>	<b>1536</b>	<b>1402</b>	<b>519</b>

## D. Surface Water Administration

Surface water administration is the enforcement of the prior appropriation doctrine principle of “first in time, first in right,” in times of shortage. Surface water administration began on August 21 and continued through October 16, 2023. Here, NeDNR issued closing notices for the benefit of the instream flow permits held by Nebraska Game and Parks Commission. The closures applied to both storage and natural flow appropriations having a priority date junior to November 30, 1993. A summary of 2023 water administration is provided in Table 4.

*Table 4. 2023 Lower Platte River Basin Surface Water Administration*

2023 Lower Platte River Basin Surface Water Administration						
NeDNR Water Division	Date of Closure	Date Reopened	Permit Type	Number of Affected Permits	Reason for closure	Reason for reopening
2A-Loup River Basin	21-Aug	26-Sep	Natural Flow	139	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
	21-Aug	26-Sep	Storage	31		
	4-Oct	4-Oct	Natural Flow	139		
	4-Oct	4-Oct	Storage	31		
2B-Elkhorn River Basin	21-Aug	26-Sep	Natural Flow	74		
	21-Aug	26-Sep	Storage	86		
	4-Oct	16-Oct	Natural Flow	74		
	4-Oct	16-Oct	Storage	86		



## E. Surface Water Permits for Induced Groundwater Recharge (Previously Issued)

No new induced groundwater recharge permits were issued and no changes to existing permits occurred in 2023. Induced groundwater recharge permits have no reporting requirements as a condition of the permit. Currently, the City of Lincoln and the Metropolitan Utilities District (MUD) are the only two appropriators holding induced groundwater recharge permits within the Basin.

Table 5 provides a summary of the induced groundwater recharge permits within the Basin. The associated municipal groundwater transfer permits, although not surface water, are also included. For example, the City of Lincoln has one induced groundwater recharge surface water permit, A-17312, with two associated municipal groundwater transfer permits for the Ashland wellfield. MUD has two induced groundwater recharge surface water permits, each with an associated municipal groundwater transfer permit, for each of its two wellfields: A-17310 and A-10538 in the south wellfield and A-17318 and A-17356 in the west wellfield.

*Table 5. City of Lincoln and MUD surface water permits for induced groundwater recharge*

Surface Water Permits for Induced Groundwater Recharge						
Permit Holder	Permit Number	Priority Date	Associated GW Municipal Transfer	Number of Wells	Rate in cubic feet per second (cfs)	Required Reporting
City of Lincoln	A-17312	1/21/1964	A-10367	31	704 - Summer	No
					200 - All Other Seasons	
		1/1/1970	A-16917	7	No additional streamflow	No
		1/1/1980		6	No additional streamflow	
		1/1/1990		2	No additional streamflow	
1/1/1993	2	No additional streamflow				
MUD	A-17310	1/1/1970	A-10538	38	480	No
		1/1/1990		1	20	
	A-17318	10/6/1993	A-17356	42	160	No

## F. Groundwater Permits (Previously Issued by NeDNR)

No new groundwater permits were issued in 2023. The data provided by permit holders of groundwater pumped in 2023, for the applicable permits listed in Table 7, are available electronically upon request. The types of groundwater permits shown are authorized as follows:

- “Municipal” is a Municipal Groundwater Transfer Permit pursuant to Neb. Rev. Stat. §46-613.01, §§46-639 - 46-650
- “Industrial Transfer” is an Industrial Groundwater Transfer Permit pursuant to Neb. Rev. Stat. §§46-675 – 46-689
- “Municipal Notice of Intent” is a notice pursuant to Neb. Rev. Stat. §46-655.01

Table 6 provides a summary of the permitted maximum water withdrawals for the City of Lincoln’s and MUD’s Municipal Groundwater Transfer Permits. The annual reports submitted by City of Lincoln and MUD for these permits are available upon request.

*Table 6. Municipal groundwater transfer permits held by the City of Lincoln and MUD*

Municipal Groundwater Transfer Permits					
Permit Holder	Appropriation Number	Priority Date	Maximum Daily Withdrawal	Total Annual Withdrawal	Required Reporting
City of Lincoln	A-10367	6/15/1931	60 million Gallons	NA	Yes
	A-16917	1/25/1990	50 million Gallons	NA	Yes
MUD	A-10538	2/15/1965	60 million Gallons	NA	Yes
	A-17356	3/1/1994	104 million Gallons	19 billion Gallons	Yes

*Table 7. NeDNR groundwater permits (previously issued)*

NeDNR Groundwater Permits (Previously Issued)				
Index Number	Permit Holder	Appropriation Number	Approval Date	Permit Type
3	Lincoln, City of	A-10367	5/28/1964	Municipal
4	Fremont, City of	A-10411	8/21/1964	Municipal
8	Wakefield, City of	A-10531	3/8/1965	Municipal
9	Plattsmouth, City of	A-10533	3/8/1965	Municipal
11	Metropolitan Utilities District	A-10538	6/9/1965	Municipal
17	Leigh, Village of	A-10578	5/10/1965	Municipal
18	Laurel, City of	A-10579	5/10/1965	Municipal

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

NeDNR Groundwater Permits (Previously Issued)				
Index Number	Permit Holder	Appropriation Number	Approval Date	Permit Type
24	Ashland, City of	A-10589	5/10/1965	Municipal
26	Lincoln, City of	A-10595	5/10/1965	Municipal
27	Columbus, City of	A-10596	5/10/1965	Municipal
32	Fremont, City of	A-12171	4/29/1971	Municipal
33	Fremont, City of	A-13909	2/19/1976	Municipal
34	Columbus, City of	A-15704	10/17/1980	Municipal
41	Wayne, City of	A-16525	1/16/1987	Municipal
42	Laurel, City of	A-16530	1/16/1987	Municipal
49	Howells, Village of	A-16888	12/8/1989	Municipal
51	Howells, Village of	A-16911	4/6/1990	Municipal
52	Lincoln, City of	A-16917	8/31/1990	Municipal
53	Wayne, City of	A-16927	6/25/1990	Municipal
54	Bruno, Village of	A-16964	7/12/1990	Municipal
57	Howells, Village of	A-17082	9/16/1991	Municipal
58	Valparaiso, Village of	A-17086	9/16/1991	Municipal
63	Valparaiso, Village of	A-17212	9/29/1992	Municipal
71	Columbus, City of	A-17325	12/11/1995	Municipal
72	Pleasant Dale, Village of	A-17351	4/11/1994	Municipal
73	Eagle, Village of	A-17352	10/27/1994	Municipal
74	Metropolitan Utilities District	A-17356	12/10/1998	Municipal
78	St. Paul, City of	A-17426	1/4/1996	Municipal
121	Clarkson, City of	A-17556	4/2/1998	Municipal
158	Humphrey, City of	A-17807	3/7/2001	Municipal
194	Palmer, Village of	A-17949	2/19/2002	Municipal
128	Ceresco, Village of	A-18018	8/27/2002	Municipal
199	Cuming County Rural Water District #1	A-18024	6/13/2005	Municipal
218	Weston, Village of	A-18070	6/13/2005	Municipal
212	Springfield, City of	A-18104	4/14/2006	Municipal
225	Cass County Rural Water District #2	A-18163	5/3/2006	Municipal
109	Tyson Fresh Meats, Inc.	I-4	10/22/1996	Industrial Transfer
110	Nebco, Inc.	I-5	9/27/1996	Industrial Transfer
270	Nebco, Inc.	I-5A	7/31/2006	Industrial Transfer
141	Hormel Foods Corp.	I-6	1/5/1999	Industrial Transfer
423	Coleridge, Village of	MNI-22	1/22/2014	Municipal Notice of Intent
261	Waverly, City of	MT-13	9/12/2007	Municipal

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

NeDNR Groundwater Permits (Previously Issued)				
Index Number	Permit Holder	Appropriation Number	Approval Date	Permit Type
262	Cuming County Rural Water District #1	MT-14	6/7/2006	Municipal
263	Pierce, City of	MT-15	7/12/2007	Municipal
264	Madison, City of	MT-16	1/11/2007	Municipal
268	Papillion, City of	MT-18	11/6/2018	Municipal
284	Louisville, City of	MT-23	9/29/2006	Municipal
332	Wayne, City of	MT-24	7/12/2007	Municipal
351	Palmer, Village of	MT-27	10/5/2007	Municipal
375	Broken Bow, City of	MT-35	11/30/2009	Municipal
391	Waverly, City of	MT-38	2/25/2011	Municipal
473	Archer Daniels Midland Company and Vantage Corn Processing, LLC	I-25	5/1/2020	Industrial Transfer

### 3. NeDNR Surface Water and Groundwater Permitting Activities

#### A. Surface Water Permitting Activity

*Details of surface water permitting activities are provided in Table 8 through Table 16. To summarize, the following surface water permitting activities occurred in 2023:*

- Irrigation (IR) – Two permits were approved within the Basin. A total of thirty-five permits were cancelled in full and four were cancelled in part.
- Manufacturing Permits (MF) – No temporary (one year) manufacturing permits were approved in the basin. One permit was approved outside the Basin. Five manufacturing permits from 2022 expired in 2023.
- Municipal Permits (MU) – No permits were granted in 2023.
- Storage Permits (ST) – Within the Basin, one permit was granted. One permit was approved outside the Basin. One permit was cancelled in the Basin, and two were cancelled outside the Basin.
- Transfers – Eight expedited transfers were approved within the Basin and one non-expedited transfer.
- Irrigation District Filings–Twin Loups Reclamation District did not file any Relinquishments or Reassignments. Loup Basin Reclamation District filed one Relinquishments and Reassignments.
- District Transfers – Two transfers were approved: Sargent Irrigation District and Farwell Irrigation District.
- Instream Flow (IF) – No permits were approved within the Basin.
- Domestic (DO) – No permits were approved within the Basin.
- Flood Control (FC) – One permit was approved outside the Basin.

### **New Surface Water Appropriations Granted in 2023**

Table 8 contains the surface water applications approved from January 1, 2023, to December 31, 2023, within the Lower Platte Basin Coalition NRDs and the area within the Lower Platte Basin. Permit use codes within the table are as follows:

- IR (Irrigation) is a permit to divert water from natural flow for irrigation,
- MF (Manufacturing) is a permit to divert water for manufacturing, construction, or industrial uses,
- ST (Storage) is a permit to store water,
- FC is a flood control permit.

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

*Table 8. Surface water applications approved in 2023 within the Lower Platte River Basin*

Surface Water Applications Approved January 1, 2023 to December 31, 2023									
NRD	Appropriation Number	Date Approved	Source	Diversion/ Reservoir Location	Use	Grant (cfs)	Grant in af	Acres	New Acres
Lower Loup	A-19886	3/30/2023	Loup River, North	Ord-North Loup Canal	IR	.89	187.2	62.4	62.4
Upper Elkhorn	A-18673	4/17/2023	Antelope Creek	Lake Schindler	ST	0	30.9	0	0
Lower Platte North	A-19947	10/20/2023	Wahoo Creek	Pump	IR	.39	81	27.0	27.0

Table 9 provides a listing of new surface water applications that were approved within the seven NRDs in calendar year 2023 but are outside of the Lower Platte Basin. While the permits do not count as new uses within the Basin, these are included to meet the reporting requirements for those NRDs' Integrated Management Plans.

*Table 9. Surface water applications approved in 2023 outside of the Basin*

Surface Water Applications Approved between January 1, 2023 to December 31, 2023 (Outside of the Lower Platte River Basin but Within Coalition NRDs)								
NRD	Appropriation Number	Date Approved	Source	Diversion/ Reservoir Location	Use	Grant (cfs)	Grant (af)	Acres
Papio-Missouri River	A-19937	8/3/2023	Missouri River	Pump	MF	20	10	0
	A-19919	11/6/2023	Tiburon Creek	WP-2 Reservoir	FC	0	84.7	0
	A-19811	1/4/2023	Wehrspann Creek	WP-4 Reservoir	ST	0	167.1	0

### Expired and Cancelled Surface Water Appropriations in 2023

Table 10 provides a listing for Basin surface water appropriations that expired, were cancelled in full, or cancelled in part in 2023. Table 11 lists any expired or cancelled appropriations that are outside of the Lower Platte River Basin but within Coalition NRDs. NeDNR must follow statutory requirements when proceeding with any cancellation, in full or in part, of a surface water appropriation. The “Basis for Action” columns in both tables pertain to one of the authorities listed below.

- BUC (Beneficial Use Cancellation): The field offices investigate all new appropriations after the time period given in the approval order to perfect the water right. If for any reason the appropriation had not been perfected, and water has not been put to beneficial use as stated in the approval order, it may be cancelled in full or in part.
  - Authority upon which the action was based: *Neb. Rev. Stat. §46-229.02(7)* “A water appropriation that has not been perfected pursuant to the terms of the permit may be canceled by the department without complying with sections 46-229.01 to 46-229.04 if the owner of such appropriation fails to comply with any of the conditions of approval in the permit, except that this subsection does not apply to appropriations to which subsection (2) of section 46-237 applies.”
- PDNU (Preliminary Determination of Non-use): After a field investigation found the appropriation had not been used in the last five years, and the owner did not successfully contest the preliminary determination of nonuse.
  - Authority upon which the action was based: *Neb. Rev. Stat. §§ 46-229.02(1) through 46-229.02(6)* which state that if the NeDNR makes a preliminary determination that an appropriation has not been used for more than five consecutive years, and the owner of said appropriation does not successfully contest the determination, then NeDNR may cancel said appropriation in whole or in part.
- REL (Relinquishment): Appropriator filed a voluntary relinquishment of water appropriation.
  - Authority upon which the action was based: Department of Natural Resources *Rules for Surface Water, Neb. Admin. Code. Title 457, Chapter 3*, which specifies that any appropriation, or part of any appropriation, may be voluntarily relinquished.
- Temporary permits: Temporary permits may not be granted for a term of more than one year. These permits expire one year from the order date and are cancelled without further action by the Department as of that date.



2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

*Table 10. Expired or cancelled surface water appropriations in 2023 within the Lower Platte River Basin*

Surface Water Appropriations Expired, Cancelled in Full or Cancelled in Part from January 1, 2023 to December 31, 2023												
NRD	Permit Number	Cancelled Date	Source	NeDNR Action	Diversion Location	Use	Begin Acres	Cancelled Acres	Cancelled Grant (cfs)	Cancelled Grant (af)	Estimated Last Use	Basis for Action
Lower Elkhorn	A-19762* <sup>1</sup>	9/12/2023	Logan Creek Dredge	Cancelled in Full	S29 T20N-R08E	IR	94.1	94.1	1.34	285	Never Used	BUC-10080
	A-3012	3/16/2023	Trib. to South Logan Creek	Cancelled in Full	S12 T23N-R03W	IR	65	65	0.46	195	Unknown	REL-9852
Lower Loup	A-3368	3/30/2023	Loup River, Middle	Cancelled in Full	S16 T14N-R14W	IR	50.6	118	0.42	151.8	2014	REL-9896
	A-3981BR	9/12/2023	Loup River, Middle	Cancelled in Part	S26 T18N-R17W	IR	N/A	10.9	0.16	32.7	2023	REL-9930
	A-6875	3/30/2023	Loup River, Middle	Cancelled in Full	S16 T14N-R14W	IR	61.2	62.0	0.49	183.6	2014	REL-9897
	A-17726	3/30/2023	Loup River	Cancelled in Full	S16 T14N-R14W	IR	118	62.0	0.78	17.7	2014	REL-9898
	A-3205	7/17/2023	Mud (beaver) Creek	Cancelled in Full	SW S07 T12N-R14W	IR	122.9	122.9	1.02	368.7	Unknown	REL-10035

<sup>1</sup> Permits marked with an "\*" are included in the stream accretions table 22.

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Surface Water Appropriations Expired, Cancelled in Full or Cancelled in Part from January 1, 2023 to December 31, 2023												
NRD	Permit Number	Cancelled Date	Source	NeDNR Action	Diversion Location	Use	Begin Acres	Cancelled Acres	Cancelled Grant (cfs)	Cancelled Grant (af)	Estimated Last Use	Basis for Action
Lower Loup	A-5661*	10/20/2023	Spring Creek	Cancelled in Full	S19 T16N-R09W	IR	18.9	18.9	0.27	109.5	2019	REL-10073
	A-3702*	9/8/2023	Spring Creek	Cancelled in Full	S30 T16N-R09W	IR	12.6	12.6	0.18	73.2	2019	REL-10072
Lower Platte North	A-9116	4/25/2023	Clear Creek	Cancelled in Full	S08 T16N-R02E	IR	95	95	1.36	285	Unknown	REL-9860
	A-12183	4/25/2023	Platte River	Cancelled in Full	S08 T16N-R02E	IR	92.5	92.5	1.32	277.5	Unknown	REL-9861
	A-15841	4/17/2023	Platte River	Cancelled in Full	S11 T16N-R02E	IR	174.3	21.6	2.49	522.9	Unknown	PDNU-9848
	A-13534	4/17/2023	Bone Creek	Cancelled in Full	S33 T16N-R03E	IR	76.5	57.5	1.09	229.5	Unknown	PDNU-9867
	A-7244	3/30/2023	Platte River, Trib. To	Cancelled in Full	S21 T17N-R06E	IR	26.9	1.0	0.18	80.7	2004	REL-9851
	A-12070	11/27/2023	Platte River	Cancelled in Full	S21 T17N-R07E	IR	40	15.0	0.57	120	1999	PDNU-10032 REL-9951
	A-12069	3/13/2023	Platte River, Trib. To	Cancelled in Full	S21 T17N-R07E	IR	114.45	45.1	1.63	343.4	1996	REL-9868
	A-13142	5/4/2023	Cottonwood Creek	Cancelled in Full	S23 T15N-R06E	IR	29	29	0.41	87	2012	REL-9885
	A-13322	3/13/2023	Sand Creek	Cancelled in Full	S30 T16N-R07E	IR	54	54	0.77	162	1998	REL-9872
	A-13945	4/24/2023	Sand Creek	Cancelled in Full	S32 T16N-R07E	IR	77.6	77.6	1.11	232.8	1999	PDNU-9878

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Surface Water Appropriations Expired, Cancelled in Full or Cancelled in Part from January 1, 2023 to December 31, 2023												
NRD	Permit Number	Cancelled Date	Source	NeDNR Action	Diversion Location	Use	Begin Acres	Cancelled Acres	Cancelled Grant (cfs)	Cancelled Grant (af)	Estimated Last Use	Basis for Action
Lower Platte North	A-8174	1/17/2023	Sand Creek	Cancelled in Full	S15 T15N-R07E	IR	113.9	36.0	0.81	341.7	Unknown	REL-9833
	A-8528 <sup>1</sup>	10/4/2023	Sand Creek	Cancelled in Full	S34 T15N-R07E	IR	57.3	1.5	0.41	171.9	2008	PDNU-10027 / REL- 9889 / REL- 9975
	A-14282	5/12/2023	Wahoo Creek	Cancelled in Full	S20 T14N-R08E	IR	152.7	152.7	2.18	458.1	2011	PDNU-9904
	A-16612	3/31/2023	Silver Creek	Cancelled in Full	S29 T15N-R08E	IR	166.3	107.2	2.38	498.9	1987	REL-9890 REL-9891
	A-5982	3/13/2023	Silver Creek	Cancelled in Full	S28 T14N-R08E	IR	145	145	1.04	435	2012	PDNU-9829
	A-15521	5/12/2023	Silver Creek	Cancelled in Full	NW SE S35 T14N-R08E	IR	80	80	1.14	240	1998	PDNU-9905
	A-11785	8/31/2023	Wahoo Creek	Cancelled in Full	S34 T13N-R09E	IR	82.5	82.5	1.18	247.5	1999	PDNU-10031
	A-8322	4/24/2023	Silver Creek	Cancelled in Full	S17 T13N-R09E	IR	22	22	0.16	66	Unknown	REL-9933
	A-14657	6/20/2023	Clear Creek	Cancelled in Full	SW S35 T14N-R09E	IR	281.9	281.9	4.03	845.7	2011	PDNU-9982

<sup>1</sup> A-8528 had a total of three actions completed in 2023, two cancelled in part and one cancelled in full.

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Surface Water Appropriations Expired, Cancelled in Full or Cancelled in Part from January 1, 2023 to December 31, 2023												
NRD	Permit Number	Cancelled Date	Source	NeDNR Action	Diversion Location	Use	Begin Acres	Cancelled Acres	Cancelled Grant (cfs)	Cancelled Grant (af)	Estimated Last Use	Basis for Action
Lower Platte South	A-14126	2/1/2023	Antelope Creek	Cancelled in Full	S31 T10N-R07E	IR	0.44	0.44	0.01	1.3	2013	REL-9850
	A-8134	4/24/2023	Stevens Creek	Cancelled in Full	S24 T10N-R07E	IR	73.5	8.0	0.53	220.5	2001	REL-9863 REL-9864
	A-6002	6/20/2023	Camp Creek	Cancelled in Full	S25 T11N-R08E	IR	11	11	0.08	33	1988	PDNU-9966
	A-10294	4/17/2023	Greenwood Creek	Cancelled in Full	S28 T12N-R09E	IR	61	61	0.84	183	Unknown	REL-9931
	A-7790B	4/25/2023	Four Mile Creek, West Branch	Cancelled in Full	S22 T12N-R13E	IR	20	20	0.15	60	Unknown	REL-9970
	A-9287B	5/22/2023	Dee Creek	Cancelled in Full	S07 T11N-R09E	IR	68.3	68.3	0.98	204.9	2011	PDNU-9934
	A-18581	2/1/2023	Cedar Creek, Trib. To	Cancelled in Full	S09 T11N-R12E	IR	139	139	1.99	417	1997	BUC-9830
	A-19828	3/23/2023	Salt Creek, Trib. To	Expired	S01 T8N-R6E	MF	N/A	N/A	N/A	10	2023	TEMP
	A-19829	3/28/2023	Salt Creek	Expired	S01 T8N-R6E	MF	N/A	N/A	N/A	10	2023	TEMP
	A-19841	4/21/2023	Branched Oak Lake	Expired	S32 T12N-R5E	MF	N/A	N/A	4.5	10	2023	TEMP
	A-19832	4/25/2023	Oak Creek	Expired	S06 T11N-R6E	MF	N/A	N/A	2.2	9.6	2023	TEMP
	A-19848	5/13/2023	Oak Creek	Expired	S06 T11N-R6E	MF	N/A	N/A	2.2	9.6	2023	TEMP

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Surface Water Appropriations Expired, Cancelled in Full or Cancelled in Part from January 1, 2023 to December 31, 2023												
NRD	Permit Number	Cancelled Date	Source	NeDNR Action	Diversion Location	Use	Begin Acres	Cancelled Acres	Cancelled Grant (cfs)	Cancelled Grant (af)	Estimated Last Use	Basis for Action
Lower Platte South	A-18587	12/18/2023	Middle Creek, North Branch, Trib. To	Cancelled in Full	SW S30 T11N-R05E	ST	N/A	N/A	67.87	N/A	Never Used	Never Built
Upper Elkhorn	A-13027	1/17/2023	Elkhorn River	Cancelled in Full	SE S03 T28N-R11W	IR	74.5	74.5	1.06	223.5	Unknown	REL-9822
	A-19678	2/27/2023	Trib. To Cedar Creek	Cancelled in Part	S22 T24N-R6W	IR	N/A	60.5	0.86	181.5	2023	REL-9839

*Table 11. Expired or cancelled surface water appropriations, outside of the Basin*

Surface Water Appropriations Expired or Cancelled from January 1, 2023 to December 31, 2023 Outside of Basin												
NRD	Permit Number	Cancelled Date	Source	NeDNR Action	Location of Diversion	Use	Begin Acres	Cancelled Acres	Cancelled Grant (cfs)	Estimated Year of Last Use	Basis for Action	
Papio-Missouri River	A-16850	6/8/2023	Papillion Creek, South, Trib. To	Cancelled in Full	S21 T14N-R11E	ST	N/A	N/A	11.7	Unknown	REL-9980	
	A-19858	8/30/2023	East Knight Creek	Cancelled in Full	S14 T16N-R12E	ST	N/A	N/A	5	Never Used	Never Used	

### Transferred Surface Water Permits in 2023

Table 12 summarizes the appropriation granted a “Non-Expedited” transfer, there was one occurrence in 2023 for this type of appropriation.

According to *Neb. Rev. Stat. 46-290(1)(a)* a “Non-Expedited Transfer” is restricted to the following: transfer of the originally stated location of such appropriation; change in the originally stated purpose of the appropriation; and in the use for which the water was originally appropriated.

Table 13 summarizes appropriations granted an “Expedited Transfer.” The permit use code used in Table 13 is defined as follows:

- IR (Irrigation) is a permit to divert water from natural flow for irrigation.

According to *Neb. Rev. Stat. §46-291(1)* “Expedited Transfers” are restricted to the following but not limited to: appropriations that are for irrigation; no increase in the number of acres; location of use may only change to adjacent lands; and the point of diversion may not change significantly.

*Table 12. Appropriation(s) approved for a change of appropriation (non-expedited transfer)*

Surface Water Appropriations Approved for Non-expedited Transfer from January 1, 2023 to December 31, 2023									
NRD	Permit Number	Approval Date	Source	Use	Diversion Location	Acres Transferred	Grant Transferred (cfs)	Increase in Acres?	Application Number
Lower Loup	NEX-9925	9/12/2023	Loup River, Middle	IR	S35 T18-R17W	48.5	0.35	No	A-2995

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 13. Appropriations granted a location of use transfer (expedited transfer)

Surface Water Appropriations Approved for an Expedited Transfer from January 1, 2023 to December 31, 2023									
NRD	Permit Number	Approval Date	Source	Use	Diversion Location	Acres Transferred	Grant (cfs) Transferred	Increase in Acres?	Application Number
Lower Loup	EXT-9892	11/27/2023	Loup River, South	IR	S07 T14N-R20W	65	0.59	No	A-8589
	EXT-9893	11/27/2023	Loup River, South	IR	S18 T14N-R20W	14.4	0	Yes	A-2271
	EXT-9926	9/12/2023	Loup River, Middle	IR	S26 T18N-R17W	18.6	0.15	No	A-3806B
	EXT-9927	9/12/2023	Loup River, Middle	IR	S35 T18N-R17W	20	0.15	No	A-2678BR
	EXT-9928	9/12/2023	Loup River, Middle	IR	S26 T18N-R17W	54.1	0.77	Yes	A-3981BR
	EXT-9929	9/12/2023	Loup River, Middle	IR	S26 T18N-R17W S35 T18N-R17W	20	0.15	No	A-3981BR
	EXT-10002	8/3/2023	Loup River, Middle	IR	S29 T13N-R12W	69.4	0.99	No	A-9883
Lower Elkhorn	EXT-10013	6/9/2023	Willow Creek	IR	S02 T25N-R03W S03 T25N-R03W	90	1.28	No	A-12977

## Surface Water Irrigation District Filings with NeDNR

In 2023, between both the Twin Loups and Loup Basin Reclamation Districts filed only one “Provisional Relinquishments and Reassignment of Acres” with NeDNR. These are listed in Table 14 and Table 15 and are grouped by water source in Table 16 and Table 17. Here, the Reclamation Districts are exercising the latitude provided by *Neb. Rev. Stat. § 46-229.04 (5)* to file, with NeDNR, provisional relinquishments and reassignments of district land. These reassignments must occur within five years after an order of cancellation issued by the department following the filing of a voluntary relinquishment of the water appropriation; to assign the right to use that portion of the appropriation to other land within the district or the area served by the company. The department shall be notified of any such assignment within thirty days after such assignment. Such appropriators are bound by all terms and conditions set forth in the appropriation, and in no way does this relinquishment/reassignment allow any increase in the number of acres irrigated by surface water. There were two district transfers within the Lower Platte Basin. Tables 16 and 17 summarize District Transfers DST-9824 and 9865<sup>1</sup>, respectively. No other types of transfers were acted upon in 2023.

---

<sup>1</sup> Pursuant to *Neb. Rev. Stat. §§ 46-2,127 through 46-2,130* “After obtaining approval of an application for transfer and map pursuant to sections 46-2,122 to 46-2,126, the board of directors of any irrigation district, reclamation district, public power and irrigation district, rural water district, or mutual irrigation or canal company may transfer an appropriation of water distributed for agricultural purposes from a tract or tracts of land within the district or served by the company to another tract or tracts of land within the boundaries of the district or served by the company...” The Department does not issue an order for this action. The appropriator is responsible for following statutory requirements related to this type of transfer.



2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

*Table 14. Twin Loups Reclamation District 2023 filings*

Provisional Relinquishments and Reassignments Filed by Twin Loups Reclamation District							
Permit Number	Source	Provisional Relinquishment	Acres Provisionally Relinquished	Grant Provisionally Relinquished (cfs)	Reassignment	Acres Reassigned	Grant Reassigned
N/A							

*Table 15. Loup Basin Reclamation District 2023 filings*

Provisional Relinquishments and Reassignments Filed by Loup Basin Reclamation District, Farwell Irrigation District							
Permit Number	Source	Provisional Relinquishment	Acres Provisionally Relinquished	Grant Provisionally Relinquished (af)	Reassignment	Acres Reassigned	Grant Reassigned
A-19477	Sherman Reservoir	PREL -9906	11.6	11.6	REA -9907	11.6	11.6

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

*Table 16. Twin Loups Reclamation District's 2023 filings grouped by water source*

Twin Loups Reclamation District Provisional Relinquishments and Reassignments Filings by water source				
Water Source	Acres Provisionally Relinquished	Grant Provisionally Relinquished (cfs)	Acres Reassigned	Grant Reassigned
N/A				

*Table 17. Loup Basin Reclamation District's 2023 filings grouped by water source*

Loup Basin Reclamation District Provisional Relinquishments and Reassignments Filings by water source				
Water Source	Acres Provisionally Relinquished	Grant Provisionally Relinquished (af)	Acres Reassigned	Grant Reassigned
Sherman Reservoir	11.6	11.6	11.6	11.6

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

*Table 18. District Transfer Approved by the Loup Basin Reclamation District, Sargent Irrigation District*

District Transfer DST-9824: Approved on January 3, 2023 by Loup Basin Reclamation District, Sargent Irrigation District				
Associated Permit Numbers	Use	Source	Total Number of Acres Transferred Out	Total Number of Acres Transferred In
A-4841A	IR	Loup River, Middle	31.2	31.2
A-12433	IR	Loup River, Middle		
A-12632	IR	Loup River, Middle		
A-15029	IR	Loup River, Middle		
A-16498	IR	Loup River, Middle		
A-18421	IR	Loup River, Middle		
A-10260C	SI	Sherman Reservoir		
A-15007	SI	Sherman Reservoir		
A-16499	SI	Sherman Reservoir		
A-16500	SI	George Semler Reservoir		

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 19. District Transfer Approved by the Loup Basin Reclamation District, Farwell Irrigation District

District Transfer DST-9495: Approved on June 7, 2023 by Loup Basin Reclamation District, Farwell Irrigation District				
Associated Permit Numbers	Use	Source	Total Number of Acres Transferred Out	Total Number of Acres Transferred In
A-4423	IR	Middle Loup River	425.8	425.8
A-4423A	IR	Middle Loup River		
A-5710	IR	Middle Loup River		
A-10470	IR	Middle Loup River		
A-15660	IR	Turkey Creek		
A-16399	IR	Middle Loup River		
A-16806	IR	Middle Loup River		
A-17306	IR	Middle Loup River		
A-18310	IR	Middle Loup River		
A-10260A	SI	Sherman Reservoir		
A-16400	SI	Sherman Reservoir		
A-16814	SI	Sherman Reservoir		
A-17307	SI	Sherman Reservoir		
A-18311	SI	Sherman Reservoir		

## B. Groundwater Permitting Activity

The following is a listing of all the types of groundwater permits authorized by statute to be issued by NeDNR. In 2023, three well spacing permits (WSP) were received by the Department:

- Application to Drill Without Regard to Spacing –No cancellations or new permits issued.
- Industrial Groundwater Transfers –No cancellations or new permits issued.
- Industrial Transfer Notice –No cancellations or new permits issued.
- Municipal Groundwater Transfers –No cancellations or new permits issued.
- Municipal Notice of Intent –No cancellations or new permits issued.
- Permit to Violate Well Spacing –One permit was dismissed, and two permits are pending.
- Permit to Transfer to Adjoining State –No cancellations or new permits issued.

*Table 20. 2023 Groundwater Permitting Activity for Lower Platte Basin*

Groundwater Permitting Activity from January 1, 2023 to December 31, 2023				
NRD	Permit Number	Date	Status	Comments
Lower Elkhorn	WSP-130	8/21/2023	Pending	Industrial / Irrigation well spacing
Lower Loup	WSP-128	10/17/2023	Dismissed	Applicant found a new site for concrete plant. File date 2022
Lower Platte North	WSP-131	12/7/2023	Pending	Irrigation to Irrigation. Well located in Lower Platte North but in proximity to well in Lower Elkhorn NRD

## 4. Estimated Stream Depletions for New Surface Water Permits

The Plan provides an overview of the agreed-upon methodology to calculate stream depletions for newly permitted irrigated acres. NeDNR calculated stream depletions for new surface water uses and acres using this methodology. More details on the new permits are provided above in Chapter 3, Table 8.

The net stream depletion estimates by NRD are provided in Table 20. For permits with new acres, the Net Irrigation Requirement (NIR), based on corn, was applied. For the new acres within the Basin, the NIR was calculated using the average Statewide values from 2018. All permits with a use of "SO" are to divert water from a reservoir for irrigation; therefore, depletions to streamflow are considered to occur in the non-peak season.

The permit use codes shown in Table 20 are defined as follows:

- IR (Irrigation) is a permit to divert water from natural flow for irrigation,
- MF (Manufacturing) is a permit to divert water for manufacturing, construction, or industrial uses,
- ST (Storage) is a permit to store water.

Table 21 shows accretions that occurred in 2023. Accretions may be due to 1) any new permits reported in 2016 or later but since expired or were canceled, or 2) other permits that were granted, and used after, but then cancelled. Table 22 provides a summary of depletions and accretions that were reported between the years 2016 through 2021, during the first increments of the plan. Table 23 provides the summary of the depletions and accretions that have occurred thus far in the second increment of the Plan.

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 21. Estimated stream depletion by NRD for newly permitted surface water uses and acres.

Estimated Stream Depletion for New Surface Water Permits between January 1, 2023 and December 31, 2023								
NRD	Permit Number	Use	Source	Net Irrigation Requirement (In)	Permitted Acres	Annual Consumptive use in acre feet (af)	Peak Season Depletion (af)	Non-Peak Season Depletion (af)
Lower Loup	A-19886	IR	Loup River, North	8.85	62.4	62.4*8.85 = 553.125 ac-in	46.10	0
						553.125 / 12 = 46.1 af		
Upper Elkhorn	18673	ST	Antelope Creek	30.9	0	30.9 af	0.00	30.9
Lower Platte North	A-19947	IR	Wahoo Creek	6.2	27	27*6.2 = 167.4 ac-in	14	0
						167.4 / 12 = 13.95 af		
<b>Total</b>							<b>60.10</b>	<b>30.9</b>

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 22. Estimated accretions for previously taken depletions that no longer occur

<i>Estimated Stream Accretions (Corrections) for Previously Taken Depletions that No Longer Occur</i>									
NRD	Permit Number	Use	Source	Acres	WR Approval Year	Estimated Last Use	Original Depletion Peak/Non-Peak (af)	Resulting Stream Accretion (af)-Peak	Resulting Stream Accretion (af)-Non-Peak
Lower Elkhorn	A-19762	IR	Logan Creek Dredge	94.1	2021	2021	38.02	38.02	
Lower Loup	A-5661	IR	Spring Creek	18.9	1953	2022	11.52	11.52	
	A-3702	IR	Spring Creek	12.6	1944	2022	7.68	7.68	
Lower Platte South	A-19828	MF	Salt Creek, Trib. To	0	3/23/2022	2023	10		10
	A-19829	MF	Salt Creek	0	3/28/2022	2023	10		10
	A-19841	MF	Branched Oak Lake	0	4/21/2022	2023	10		10
	A-19832	MF	Oak Creek	0	4/25/2022	2023	10		10
	A-19848	MF	Oak Creek	0	5/13/2022	2023	10		10
<b>Total</b>								<b>57.22</b>	<b>50</b>



2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 23. 2016 to 2021 estimated surface water stream depletions and accretions

2016-2021 Estimated Stream Depletions and Accretions for New Surface Water Permits																		
NRD	2016-2017		2018		2019				2020				2021				Net Total Depletions <sup>1</sup>	
	Depletions		Depletions		Depletions		Accretions		Depletions		Accretions		Depletions		Accretions		Peak	Non-Peak
	Peak	Non-Peak <sup>2</sup>	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak		
Lower Elkhorn	117	NA	97	0	70	60	0	0	0	0	103.6	0	94.65	0	0	0	<b>275</b>	<b>60</b>
Lower Loup	0	NA	228 <sup>3</sup>	0	130	638	0	0	46	339	0	0	45.91	13.63	10.0	0	<b>440</b>	<b>991</b>
Lower Platte North	0	NA	0	0	0	0	0	0	0	61	0	0	7.48	0	0	0	<b>7</b>	<b>61</b>
Lower Platte South	65	NA	10	0	0	0	10	0	2	18	0	0	14.90	10.00	2.0	0	<b>80</b>	<b>28</b>
Papio-Missouri River	67	NA	0.3	0	10	0	0	0	0	0	10.3	0	0	0	0	0	<b>67</b>	<b>0</b>
Upper Elkhorn	0	NA	0	0	0	0	0	0	85	0	0	0	0.39	0	0	0	<b>85</b>	<b>0</b>
Upper Loup	118	NA	345.32	89.41	0	0	65	0	9	0	38	89	0	0	0	0	<b>369</b>	<b>0</b>
<b>Basin Total</b>	<b>367</b>	<b>NA</b>	<b><u>681</u></b>	<b>89</b>	<b>210</b>	<b>698</b>	<b>75</b>	<b>0</b>	<b>142</b>	<b>418</b>	<b>152</b>	<b>89</b>	<b>163</b>	<b>24</b>	<b>12</b>	<b>0</b>	<b>1324</b>	<b>1140</b>

<sup>1</sup> Net total depletions by NRD and by Basin have been rounded to the nearest whole number, after calculations.

<sup>2</sup> Non-Peak season depletions were not calculated for the 2016-2017 report for any of the new surface water uses in any NRD and have not been evaluated at this point in time.

<sup>3</sup> Corrected peak annual depletions based on review of past data. Previously reported as 305 AF in 2019 report due to correction of acres. Underlined totals reflect this change.

2024 NeDNR Annual Report of 2023 Data  
Lower Platte River Basin Water Management Plan

Table 24. 2022 and 2023 estimated surface water stream depletion and accretions

2022 and 2023 Estimated Stream Depletions and Accretions Summary										
NRD	2022				2023				Net Total Depletions	
	Depletions		Accretions		Depletions		Accretions			
	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak
Lower Elkhorn	0	0	10	0	0	0	38.02	0	28.0	0
Lower Loup	145.97	17.4	83.87	9.5	46.1	0	19.2	0	127.4	7.9
Lower Platte North	0	0	0	0	14	0	0	0	14.0	0
Lower Platte South	39.2	10	20	10	0	0	0	50	19.2	-50
Papio-Missouri River	0	18	0	0	0	0	0	0	0.0	18
Upper Elkhorn	0	0	0	0	0	30.9	0	0	0.0	30.9
Upper Loup	0	0	0	0	0	0	0	0	0.0	0
<b>Basin Total</b>	<b>185</b>	<b>45</b>	<b>114</b>	<b>20</b>	<b>60</b>	<b>31</b>	<b>57</b>	<b>50</b>	<b>189</b>	<b>7</b>

## 5. Basin Plan Implementation: Research, Projects, and Studies

### A. Coalition annual reporting database

One of the most important aspects of Basin management is annual reporting and data sharing between Basin NRDs and NeDNR. Since development of the Basin Plan, the Coalition has been working with HDR, Inc. to create an annual reporting database and tools to improve consistency of data storage and data sharing between Coalition members<sup>1</sup>. The database and tools will help standardize the reporting of new uses and will thus ensure data integrity and transferability between sources. The integrated groundwater and surface water database will be an asset to future analyses of Basin water uses and water supplies, including determining allowable depletions for future Basin Plan increments, and aiding data assimilation for the Plan's 5-year comprehensive review.

Having an annual reporting database with the flexibility and capabilities for multiple purposes helps to reduce redundancy as many reporting initiatives have overlapping components. NeDNR is in the process of testing and finalizing the database for use in the 2025 report. Currently, the database has been through several rounds of testing and updates using feedback from the NRDs.

### B. Groundwater modeling and studies

#### Lower Platte Missouri Tributaries (LPMT) Model and Studies<sup>2</sup>

##### Regional LPMT Model Update

In 2022, NeDNR began work to extend the Lower Platte Missouri Tributaries (LPMT) regional groundwater model through 2021. The LPMT was published in 2018 and covers the northern and central portions of eastern Nebraska and extends from 1960 to 2013. For this extension, weather data inputs from 2010-2021 will be sourced from PRISM spatially gridded climate data rather than from individual weather stations. This change in input source will reduce data gaps, both temporally and spatially, and will reduce the impacts of weather stations being decommissioned. In 2023, NeDNR updated the

---

<sup>1</sup> Goal 1, Objective 2, Action Item A: Develop a standard data collection and reporting system for all NRDs in the Lower Platte River Basin for documenting water uses in the Basin.

<sup>2</sup> Goal 1, Objective 1.4, Action Item A: Utilize best available data and tools to develop refined extents of the hydrologically connected ground and surface waters in the Lower Platte River Basin.

current model from MODFLOW-2005 to MODFLOW 6. MODFLOW 6 has an improved solver and is designed to simplify coupling with sub-regional or local models.

#### Sub-regional Models

As part of the future development and update to the LPMT model, the NRDs are working to develop sub-regional models which could be coupled with the LPMT to produce refined regional and subregional analyses. The sub-regional models will use the LPMT as a reference but with a higher spatial resolution. The models are using extensive Airborne Electromagnetic (AEM) previously collected by the NRDs and Eastern Nebraska Water Resources Assessment (ENWRA). The AEM data is interpreted to produce high-resolution geologic data which informs the geology in the sub-regional groundwater models.

In 2022, LENRD and NeDNR jointly published a sub-regional model covering the LENRD region. Currently the NeDNR is conducting a cycle well analysis to create a stream depletion map using this model

In 2023, Lower Platte North, Lower Platte South and Papio-Missouri Tributaries NRDs received partial funding for their modeling project from the Water Sustainability Fund. The project commenced in Fall of 2023 and is expected to be completed by the end of 2024.

#### Lower Platte Missouri Tributaries Headwaters Inventory Program

In March of 2023, the NeDNR initiated verification of the headwaters of streams for use in the Lower Platte Missouri Tributaries model. The focus of this effort is to confirm the predicted furthest upstream extent of surface and groundwater interaction, known as headwaters. Headwaters are the source of a stream or river. They are located at the furthest point from where the water body empties or merges with another. Over time, due to climate variability, water use, and other actions, the location of a stream's headwaters may change. These data are used to calibrate the model. Field methods include on-site verification, landowner communication, remote flow sensors, and temporal tracking.

### C. Drought Planning

In 2023, NeDNR continued to assist in drought planning efforts throughout the state. In 2022, the Coalition decided to assemble a review of the existing drought actions in the Lower Platte River Basin. NeDNR received and incorporated feedback from the NRDs on the drought review. NeDNR is prepared to support any further drought planning efforts undertaken by the Coalition.

### **Lower Platte River Consortium<sup>1</sup>**

In 2016, Lower Platte South NRD, Lower Platte North NRD, Papio-Missouri River NRD, Omaha Metropolitan Utilities District, Lincoln Water System, and NeDNR entered an Interlocal Cooperative Agreement (ILCA) to form the Lower Platte River Consortium (Consortium). In 2019, the Consortium finalized the Lower Platte River Drought Contingency Plan (LPRDCP). The LPRDCP establishes a framework for coordination and communication amongst Consortium members to address drought across the Lower Platte River Basin. Information regarding the Lower Platte River Drought Contingency Plan is available here: [Lower Platte River Drought Contingency Plan – Lower Platte River Basin](#).

In Spring 2023, the Consortium members coordinated to publish press releases encouraging the public to conserve water as part of a concerted effort to mitigate the effects of drought. Consortium members are in the process of working together to update the Drought Plan with new data and drought mitigation activities. The revised plan will be adopted in 2024.

In 2023, NeDNR continued to update the Lower Platte Drought Monitoring Dashboard. Improvements to performance, data sources, and data representation were made throughout the year. The dashboard can be accessed at: [Lower Platte Drought Monitoring Dashboard](#).

---

<sup>1</sup> Goal 1, Objective 1.5-Evaluate variations in water inventory due to climate cycles, and Goal 2, Objective 1-Collaborate with state and local governments to identify opportunities to augment water supplies within the Lower Platte River Basin.