

Water Committee Meeting
Wednesday, August 2, 2023 6:00 PM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS

2. REGULATORY

2.A. GROUND WATER MANAGEMENT AREA

2.A.1. Variance Requests

Attached is the Water Development Areas for Variance Requests.

Non-Hydrological Control Area (White) - variance deadline is August 15

Hydrological Control Area (Blue) - variance deadline is September 15

Restricted Area (Red) can apply for a variance if within 1 mile of the blue or white area. Staff explained that an application within the one mile radius is put in the control area that they border.

2.A.2. John Healy Variance Requests

This item was discussed at the May Water Committee Meeting with concern by the Committee about the amount of groundwater that actually would be used presently and in the future. John Healy handed out maps and explained that the City of Schuyler was looking for more application sites for the city's treated lagoon water. John has been using the treated water for numerous years. He receives a water analysis from the City annually, which he stated was low in nitrates. The Committee felt because of the environmental benefits and with the City expanding, this was a justification for a good cause variance.

John Healy/Lonnie Kitt submitted an application last fall for expanded water use from an existing well in the NE 1/4 of S24-17-3E Colfax County. Currently, well G-035877 is used to flush an irrigation system that covers 225.1 acres. The main water source is the City of Schuyler lagoons. They would like to add another pivot irrigated system of 50 acres to the current system and continue to utilize the lagoon water.

The committee felt this would be a good cause variance but wanted to consider the amount of water being pumped by the irrigation well. Staff will contact John Healy to discuss the options.

The application scored 307.7 with limiting factors in stream depletion and

saturated thickness, which is to be expected with applications this close to the river.

2.A.3. Voluntary Integrated Water Management Plan - LPNNRD

NeDNR and LPN staff made the annual joint presentation at the Committee meeting with the presentation attached.

V-IMP Goals

Goal 1

Develop and maintain a District-wide water supply inventory.

Goal 2

Develop and maintain a District-wide water demand inventory.

Goal 3

Develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies.

Goal 4

Communicate to the public that Nebraska has a great supply of water, and we need to continue to manage it well.

Goal 5

Coordinate with Lower Platte River Basin NRDs, and appropriate groups and agencies, to develop a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands.

2.A.4. Well Permit Program

2.A.4.a. Well Permits Approved

Wells Permits Approved: #

Landowner	Number of Wells	Number of New Irrigated Acres	Type of Well

The total number of approved permits for 2023 is #

Location of Approved Well Permits for 2023: Correct as of #####

County	Irrigation - New	Irrigation - Replacement	Stock
Butler			
Colfax			
Dodge			
Boone			
Madison			
Platte			
Saunders			
Total			

2.A.5. Cost Share Programs

2.A.5.a. Irrigation Well Sample Kits

280 kits to producers so far in 2023. 129 of these have been returned - two of these were in August 2nd mail.

July precipitation - 9.62" in the rain gauge in the northwest corner of the office parking lot.

2.A.6. Bellwood Phase 2 Area

2023 is the twenty-first year for this Phase 2 Area.

	Nitrate-nitrogen Range	Percent Nitrate-nitrogen 0 to 8.0 ppm	Percent Nitrate-nitrogen 8.01 to 10.00 ppm	Percent Nitrate-nitrogen 10.01 to 15 ppm	Percent Nitrate-nitrogen greater than 15 ppm
	0 to 25 ppm	46.3% (44 of 95)	8.4% (8 of 95)	45.3% (43 of 95)	
	0 to 25 ppm	47% (44 of 94)	15% (14 of 94)	38% (36 of 94)	

	0 to 24 ppm	41% (29 of 71)	14% (10 of 71)	45% (32 of 71)	
	0 to 31 ppm	48% (48 of 100)	9% (9 of 100)	43% (43 of 100)	
	0 to 28 ppm	53.75% (43 of 80)	7.5% (6 of 80)	38.75% (31 of 80)	
	0 to 22 ppm	45.5% (41 of 90)	15.5% (14 of 90)	39% (35 of 90)	
	0 to 35.7 ppm	48.65% (54 of 111)	11.71% (13 of 111)	39.64% (44 of 111)	
	0 to 26.6 ppm	51% (56 of 110)	6% (7 of 110)	43% (47 of 110)	
	0 to 28.9 ppm	57% (61 of 107)	9% (10 of 107)	34% (36 of 107)	
	0 to 25.8 ppm	50% (53 of 107)	9% (10 of 107)	14% (44 of 107)	26%
	0 to 22.3 ppm	51% (55 of 108)	13% (14 of 108)	18% (39 of 108)	20%
	0 to 32.3 ppm	43% (31 of 72)	8% (6 of 72)	14% (35 of 72)	33%
	0 to 35.1 ppm	34% (25 of 74)	11% (8 of 74)	26% (41 of 74)	26%
	0 to 23.5 ppm	36% (27 of 74)	15% (11 of 74)	19% (36 of 74)	22%
	0 to 30.9 ppm	40% (25 of 63)	11% (7 of 63)	22% (31 of 63)	28%

	0 to 24.5 ppm	46% (22 of 48)	10% (5 of 48)	28% (21 of 48)	22%
	0 to 20.5 ppm	33.33% (20 of 60)	13.33% (8 of 60)	35% (21 of 60)	18.33% (11 of 60)
	0.12 to 27.7 ppm	40.6% (26 of 64)	15.6% (10 of 64)	25% (16 of 64)	18.8% (12 of 64)
	0.13 to 23.0 ppm	43.75% (28 of 64)	12.50% (8 of 64)	26.56% (17 of 64)	17.19% (11 of 64)
	0.34 to 13.3	63.63% (14 of 22)	22.73% (5 of 22)	13.64% (3 of 22)	

2.A.7. Richland - Schuyler Phase 3 Area

2023 is the eighth year of this Phase 3 Area. This Phase 3 area went into effect September 1, 2015. The 55 sections of this area first went into a Phase 2 Area in 2004. The ten sections that were in Phase 2 are now in Phase 3. As such, the 2020, 2021 and 2022 numbers (at bottom of table) are for 65 sections.

Year	Nitrate-nitrogen Range	Percent Nitrate-nitrogen 0 to 8.0 ppm	Percent Nitrate-nitrogen 8.01 to 10.00 ppm
2004	0 to 47 ppm	30% (42 of 139)	10% (14 of 139)
2005	0 to 120 ppm	31.3% (74 of 236)	10.2% (24 of 236)
2006	0 to 53 ppm	28% (50 of 181)	14% (26 of 181)
2007	0 to 99 ppm	32% (75 of 231)	10% (22 of 231)
2008	0 to 46 ppm	28% (53 of 190)	12% (23 of 190)
2009	0 to 57 ppm	33% (72 of 216)	6% (13 of 216)
2010	0 to 57.5 ppm	31% (70 of 229)	7% (15 of 229)
2011	0 to 65.8 ppm	28% (67 of 241)	9% (21 of 241)
2012	0 to 52.6 ppm	29% (70 of 241)	9% (21 of 241)
2013	0 to 94.0 ppm	25% (63 of 252)	9% (23 of 252)

2014	0 to 101.0 ppm	27% (68 of 251)	9% (22 of 251)
2015	0 to 53.3 ppm	23% (55 of 238)	12% (29 of 238)
2016	0 to 50.5 ppm	25% (58 of 228)	10% (22 of 228)
2017	0 to 53.4 ppm	25% (60 of 238)	6% (14 of 238)
2018	0 to 56.9 ppm	26.5% (50 of 189)	6.3% (12 of 189)
2019	0 to 39.4 ppm	25% (53 of 209)	11% (22 of 209)
2020	0 to 50.8 ppm	26% (69 of 261)	6% (15 of 261)
2021	0 to 43.0 ppm	25.5% (67 of 263)	8.4% (22 of 263)
2022	0 to 58.5 ppm	23.0% (57 of 248)	6.45% (16 of 248)
2023	0.49 to 30.1	24% (12 of 50)	10% (5 of 50)

2.A.8. Lower Platte River Basin Water Management Plan Coalition (LPRBC)

The technical group will be meeting on August 15 at 1 pm to view the updated version of the database.

2.B. CHEMIGATION

For 2023 we have 641 renewals and 56 new permit applications for a current total of 697. A total of 231 site inspections have been completed.

Attachment.

3. Educational Program

A presentation was given by Monty Teeter from Dragon-Line Mobile Drip Irrigation on another approach to irrigation management. This product is on the NRCS eligible cost-share docket in some parts of the country. The local working groups look at practices that are eligible for cost-share.

Below is the Dragon-line website and a YouTube video about the company.

www.dragonline.net

<https://youtu.be/csidd7gtrJo>

4. GROUND WATER PROGRAMS

4.A. DECOMMISSIONED WELL PROGRAM

4.A.1. Well Estimates

1 new well has been reviewed and approved for decommissioning since the last Committee meeting.

Well Owner	Type of Well	Cost Share Estimate	County
Rainier Resources	Irrigation	\$1474.69	Saunders

Holdings 1 LLC (Justin Raikes)			

4.A.2. Plugged Wells

5 wells have been plugged, reviewed, and ready for cost share payment approval this month.

Well Owner	Type of Well	Cost Share Estimate	County
Paul Thorson	Domestic	\$287.25	Saunders
Todd Went	Hand Dug	\$603.05	Colfax
Dorothy Juranek	Irrigation	\$1211.82	Butler
Dorothy Juranek	Irrigation	\$1211.82	Butler
Zoucha Farms LLC	Irrigation	\$1148.49	Colfax

4.B. LOWER PLATTE NORTH NRD GROUND WATER STUDIES

4.B.1. Phase Area Update

A field day was held on August 8 near Bellwood showing precision nitrogen management through fertigation. The flyer is attached.

Attached is an invoice from LRE for \$5,268.75 per contract on Hydrological Assessment. This was part of the WSF Best Management Practices Grant that was received in November 2022.

4.B.2. Lower Platte River Consortium

The group had a monthly update on August 8 at 10 am. These updates make the group aware of drought situations for their agency.

4.C. Grants

The WSF grant that was submitted for groundwater modeling was approved for \$250,000. The grant sponsor will be the Papio-Missouri River NRD with the LPSNRD, LPNDRD and NeDNR as partners. LPNDRD committed \$71,091.67 for 3 years or \$23,697.22 annually by approved interlocal agreement dated

4/10/2023. The total estimated cost for this project was \$660,000.

The WSF grant "Assessing legacy nitrate in Platte, Colfax and Dodge Counties, Nebraska" was approved for funding for \$163,200 from the WSF. Lower Loup NRD will be the grant sponsor with LPN committing \$54,000 over 3 years or \$18,000 annually. USGS will be conducting the work with the total estimated cost of the project at \$408,200.

Attached is an interlocal agreement between the Lower Loup and Lower Platte North NRDs that needs approval.

4.D. Water Flow Meters

A map is attached showing the location of flow meters on irrigation wells currently reporting water use. Discussion on the location of these meters and whether they represent a particular aquifer region.

The committee and staff discussed the possibility of a statistical analysis of the current flow meter locations and representation of that aquifer region. Staff will begin looking at developing analysis in these areas.

5. SURFACE WATER PROGRAMS

5.A. STATE LAKES, FOR THE WEEK OF

This week's (July 27) beach Bacteria and Harmful Algal Bloom results are now posted on the NDEE web page ([Current Health Alerts and Sampling Results For This Week](#)).

There will be 1 beach on "Health Alert" this week. Swanson Reservoir in Hitchcock County will remain on Health Alert. While Big Indian Lake (11A) in Gage County will be removed from Health Alert. When a lake exceeds 8 ppb of microcystin it will be placed on "Health Alert".

Current Lakes on "Health Alert"			
Lake	County	Microcystin (ppb)	Sample Date
Swanson Reservoir	Hitchcock	13.63	7/24/2023

A lake that is placed on "Health Alert" will remain under "Health Alert" status until it has tested below 8 ppb. If a lake is under a "Health Alert", signs will be posted recommending people avoid full body contact activities such as swimming, wading, skiing, jet skiing, etc.

We have 2 beaches with *E.coli* testing above 235 colonies/100 ml.

Lakes with High <i>E.coli</i> Bacteria			
Lake	County	<i>E.coli</i> (mpn)	Sample Date
Cottonmill Park Swim Lake	Buffalo	249	7/24/2023
Lewis & Clark Reservoir at Weigand Beach	Knox	1,414	7/24/2023

E. coli bacteria levels measured above 235 colonies/100 ml of sample are considered a higher risk for illness when swimming. Considering the more rapid changes in bacteria conditions, signs are not posted with these higher levels. Although, we want people to be aware of beach conditions and use their own judgment as to whether they use a listed water body. Have a good rest of the week and stay cool!

Justin Haas
State Lakes Coordinator
Nebraska Department of Environment and Energy
P.O. Box 98922
245 Fallbrook Blvd., Suite 100
Lincoln, Nebraska 68509-8922
Direct: 402-471-4224 | Main office: 402-471-2186
<http://dee.ne.gov> | [Twitter](#) | [Facebook](#)

6. Budget 2023-24
Budget discussion
7. OTHER

7.A. COMMENTS FROM THE PUBLIC

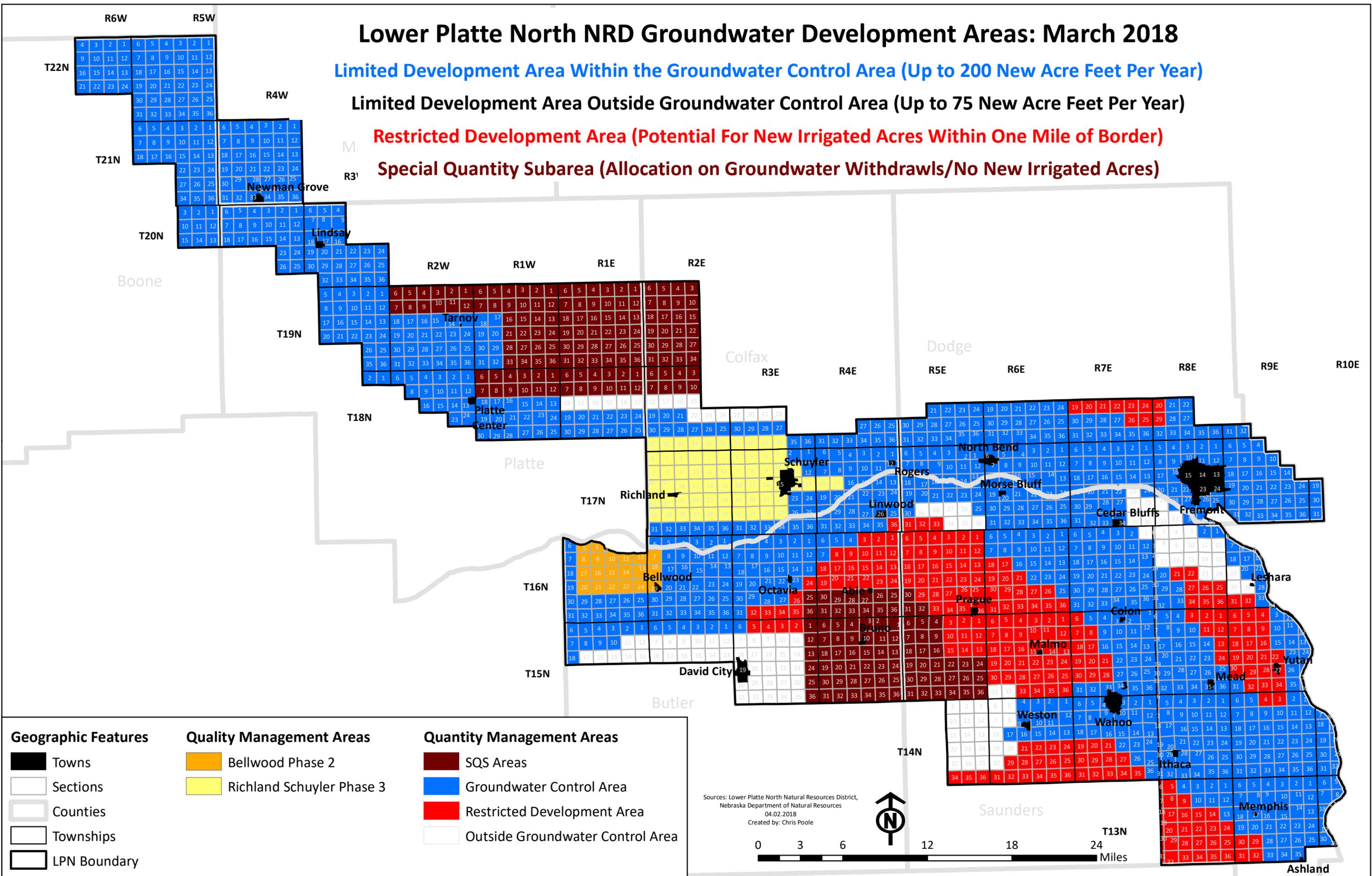
Lower Platte North NRD Groundwater Development Areas: March 2018

Limited Development Area Within the Groundwater Control Area (Up to 200 New Acre Feet Per Year)

Limited Development Area Outside Groundwater Control Area (Up to 75 New Acre Feet Per Year)

Restricted Development Area (Potential For New Irrigated Acres Within One Mile of Border)

Special Quantity Subarea (Allocation on Groundwater Withdrawals/No New Irrigated Acres)

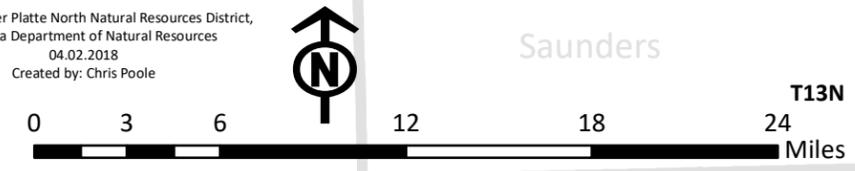


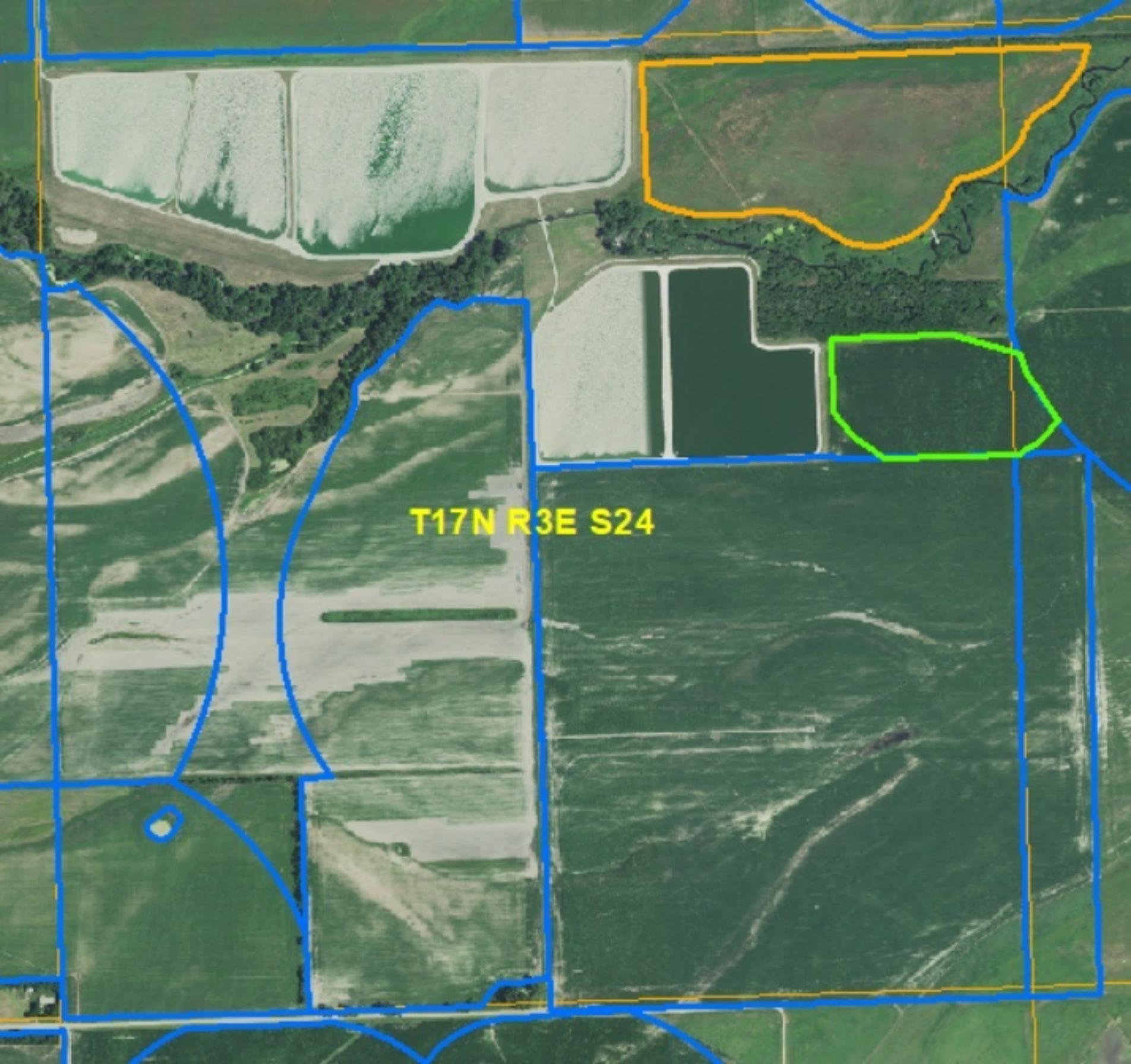
- Geographic Features**
- Towns
 - Sections
 - Counties
 - Townships
 - LPN Boundary

- Quality Management Areas**
- Bellwood Phase 2
 - Richland Schuyler Phase 3

- Quantity Management Areas**
- SQS Areas
 - Groundwater Control Area
 - Restricted Development Area
 - Outside Groundwater Control Area

Sources: Lower Platte North Natural Resources District,
Nebraska Department of Natural Resources
04.02.2018
Created by: Chris Poole





T17N R3E S24

LOWER PLATTE NORTH NRD INTEGRATED MANAGEMENT PLAN 2023 ANNUAL REPORT

AUGUST 2 , 2023, AT 6 P.M.
LPNNRD OFFICE, WAHOO, NE

Daryl Andersen
Water Resources Manager



Tyler Martin
IWM Coordinator



PURPOSE

- IMP Process
- Surface and Groundwater Data Collection and Monitoring
 - NeDNR and LPNNRD
- Consortium Plan Implementation
- Action Plan

IMP OVERVIEW

WHY CONDUCT IMP REVIEWS?

Joint management of hydrologically connected (HC) groundwater and surface water:

- Identify new opportunities and challenges
- Increase understanding of HC areas (data, studies)
- Evaluate and convey progress towards goals and objectives
- Prioritize joint management actions for upcoming years



IMP GOALS

Goal 1

Develop and maintain a District-wide water supply inventory.

Goal 2

Develop and maintain a District-wide water demand inventory.

Goal 3

Develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies.

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Communicate to the public that Nebraska has a great supply of water, and we need to continue to manage it well.

Goal 5

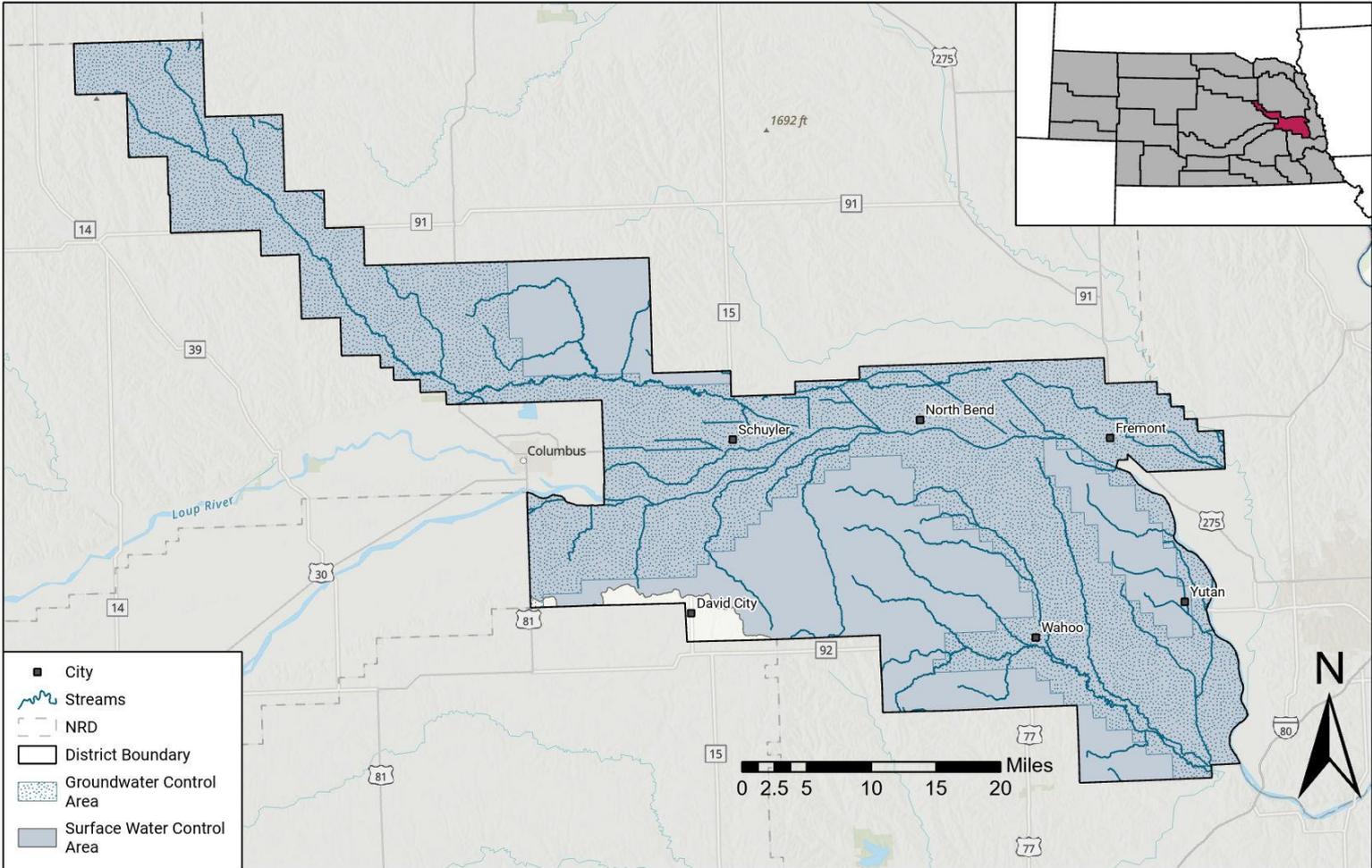
Coordinate with Lower Platte River Basin NRDs, and appropriate groups and agencies, to develop a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands.

LPNNRD IMP CONTROL AREAS



LOWER PLATTE NORTH
Natural Resources District

Voluntary Integrated
Management Plan Control Areas



IMP CONTROLS

- Groundwater
 - Limit new groundwater uses to 50% of the annually available stream depletions over the Basin Plan's first five-year increment
 - Require annual use reports for municipal groundwater users
- Surface water
 - Limit new groundwater uses to 50% of the annually available stream depletions over the Basin Plan's first five-year increment
 - Require annual use reports for municipal surface water permit holders and municipal groundwater transfer permit holders

SURFACE WATER AND GROUNDWATER MONITORING

NeDNR DATA COLLECTION & MONITORING

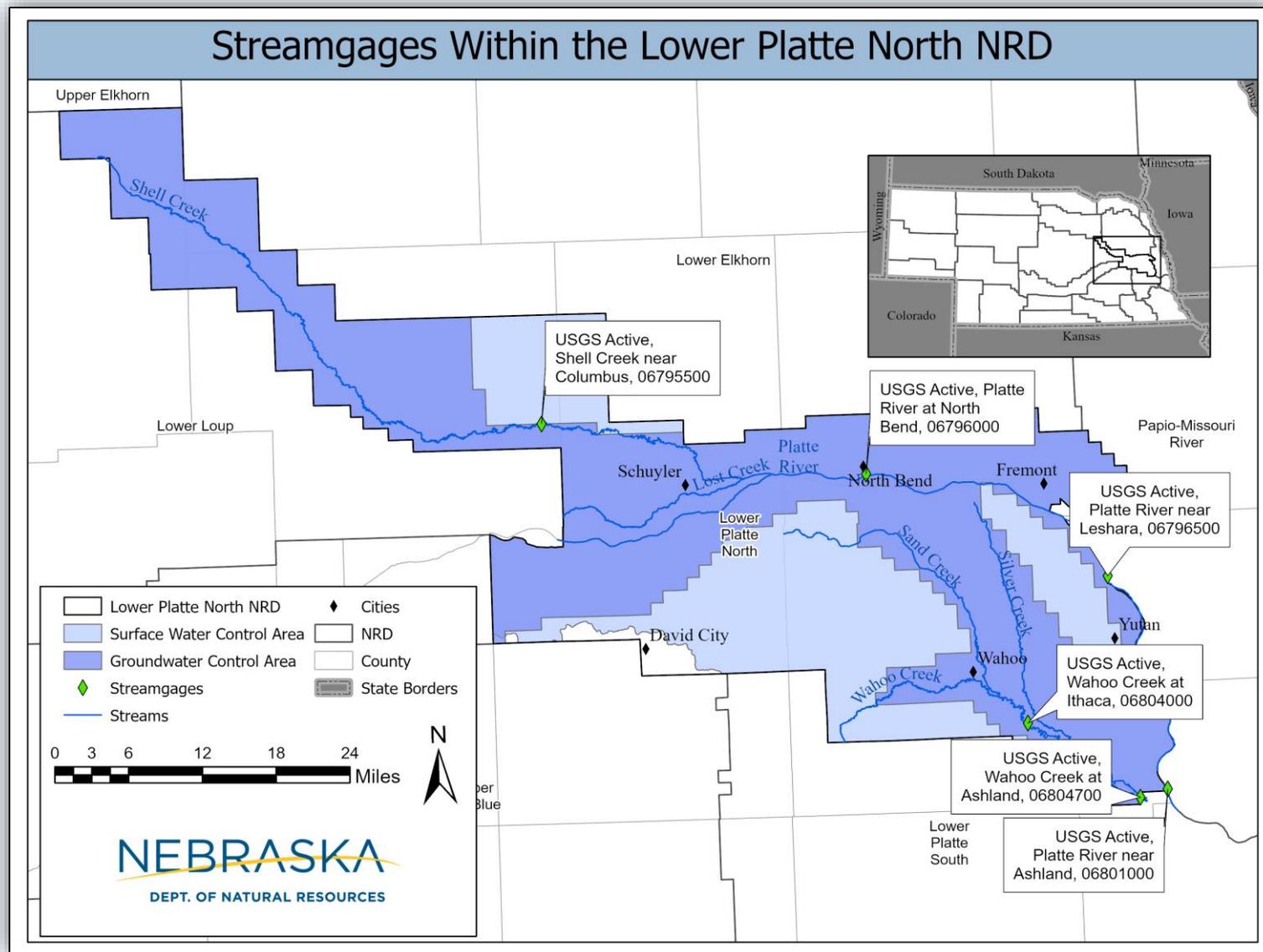
NeDNR Monitoring

- Surface water monitoring—locations and 6 gages
- Surface water pump site inspections
- Surface water administration
- Voluntary surface water use reporting

Other

- Headwaters Inventory Program (HIP)
 - New data collection effort

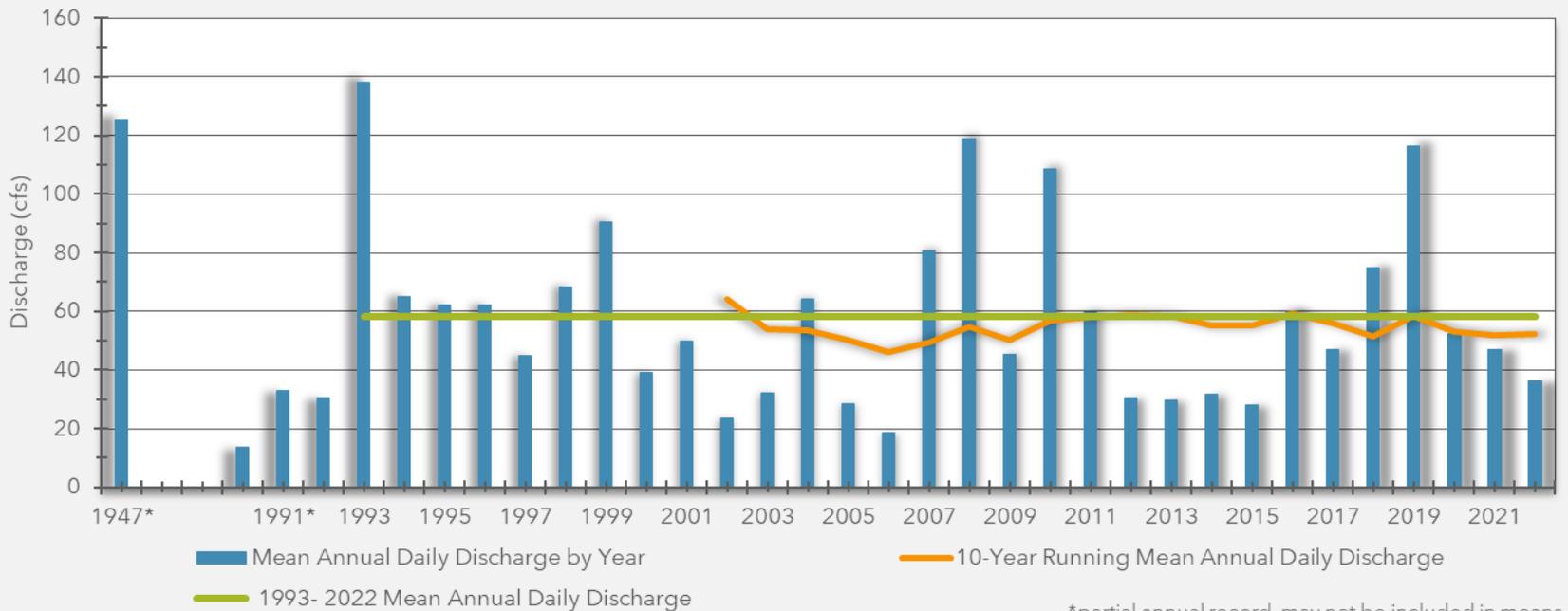
USGS STREAMGAGE LOCATIONS IN LPNNRD



SURFACE WATER MONITORING

Annual Mean Daily Discharge on Shell Creek near Columbus, NE 1947, 1990-2022

USGS streamgage 06795500

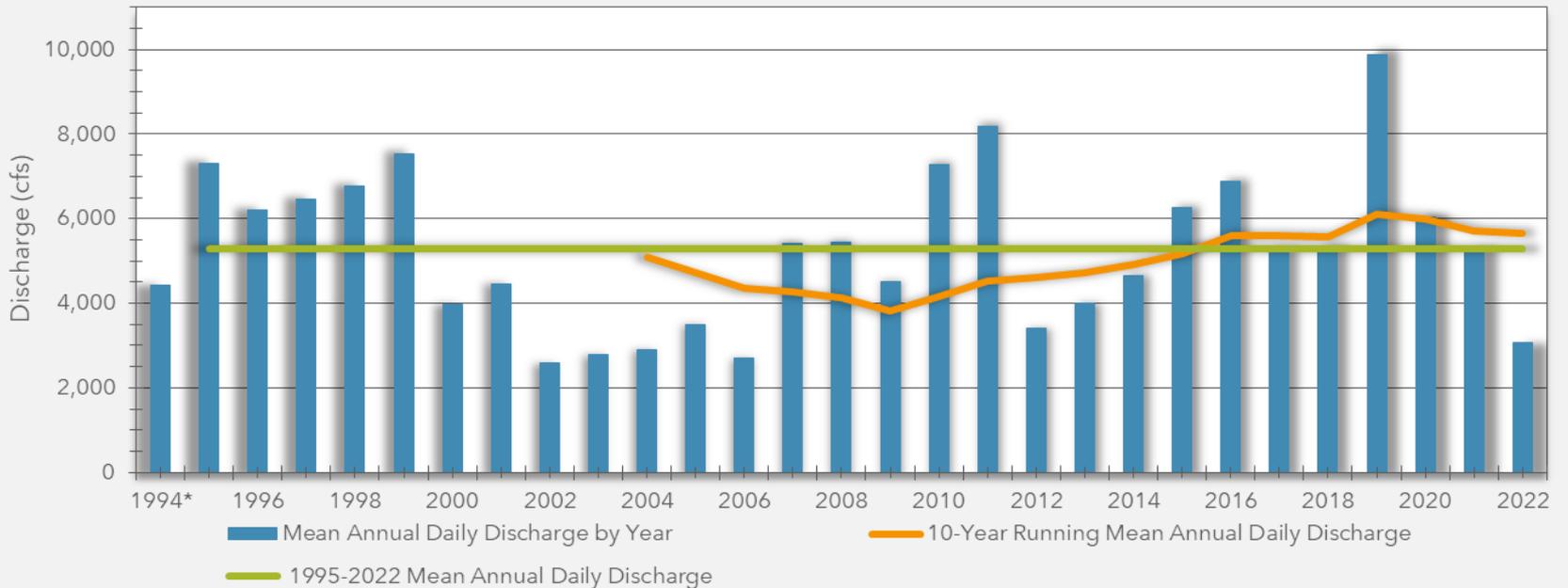


*partial annual record, may not be included in means

SURFACE WATER MONITORING

Annual Mean Daily Discharge on the Platte River near Leshara, NE, 1994-2022

USGS Streamgage #06796500

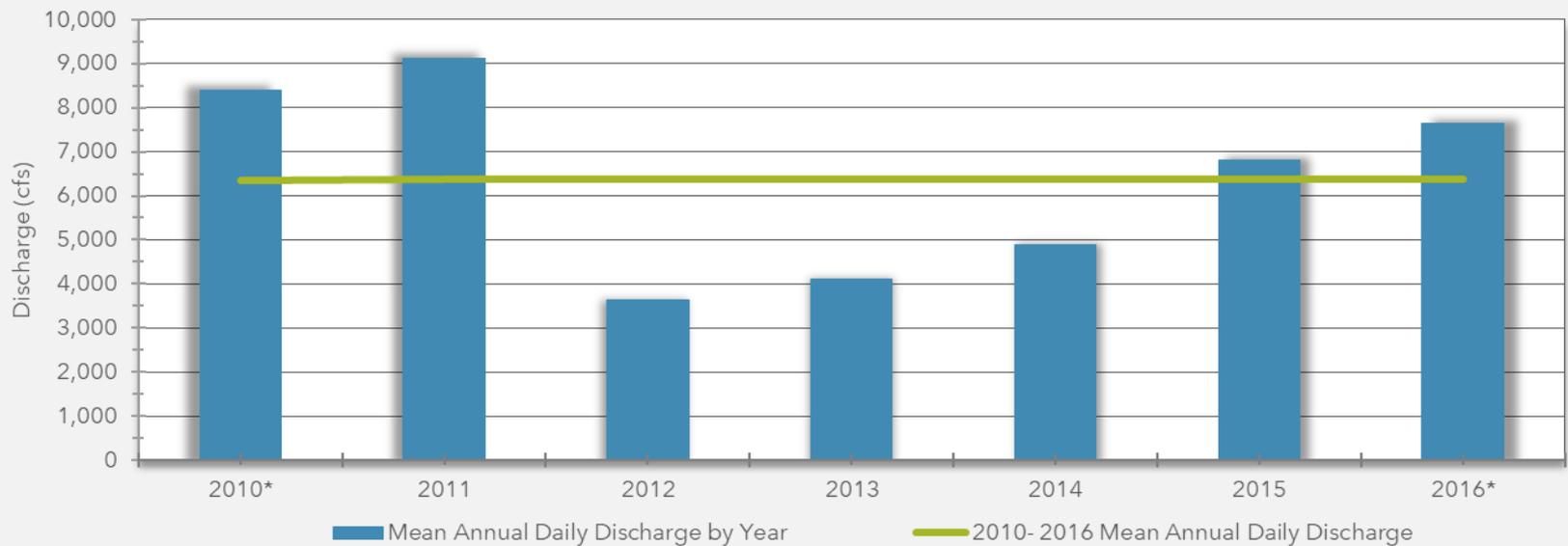


*partial annual record, may not be included for means

SURFACE WATER MONITORING

Annual Mean Daily Discharge on the Platte River near Venice, NE 2010-2016

USGS streamgauge 06796550

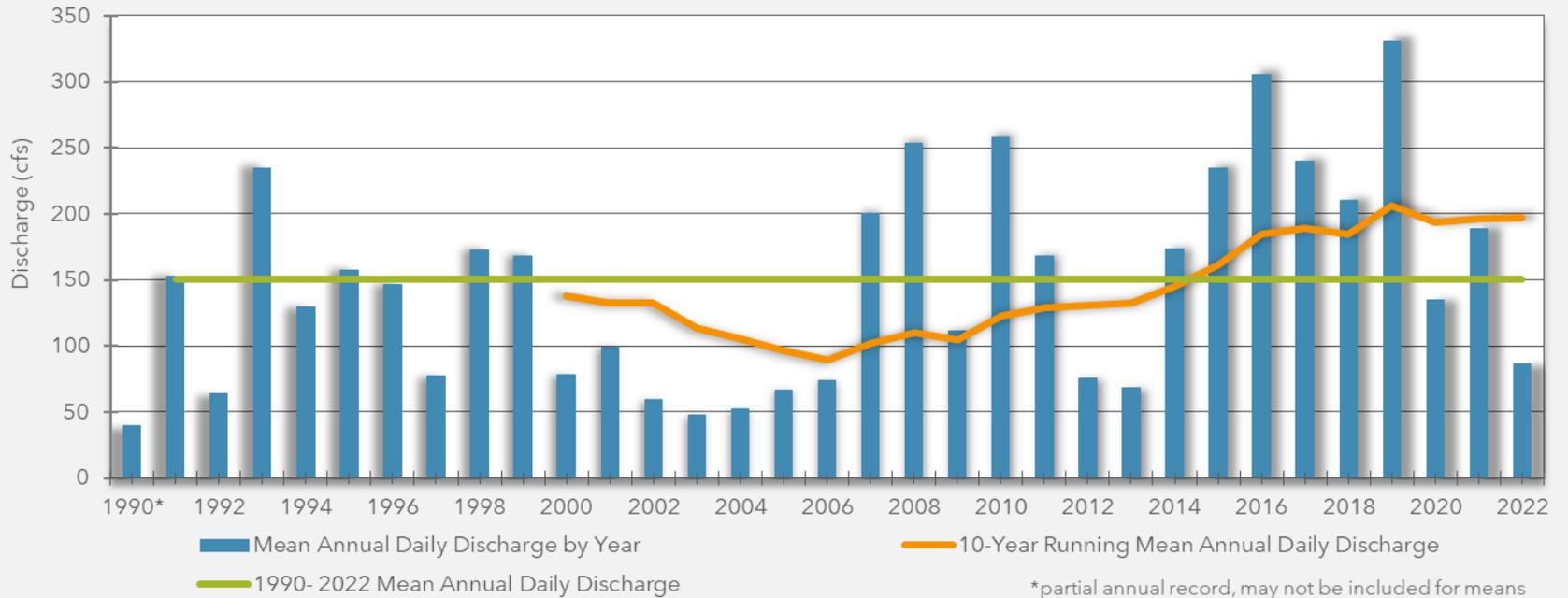


*partial annual record, may not be included in means

SURFACE WATER MONITORING

Annual Mean Daily Discharge on Wahoo Creek near Ashland, NE 1990-2022

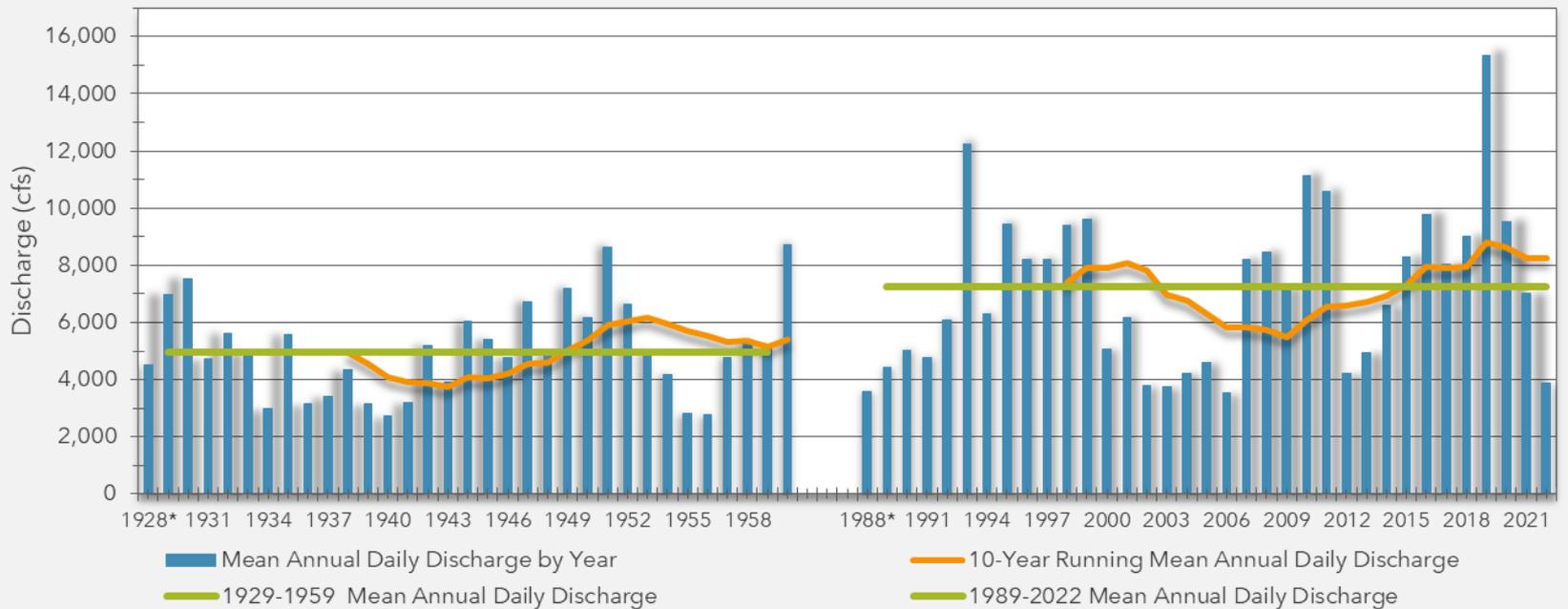
USGS streamgage 06804700



SURFACE WATER MONITORING

Annual Mean Daily Discharge on the Platte River near Ashland, NE, 1928-1960, 1988-2022

USGS Streamgage #06801000

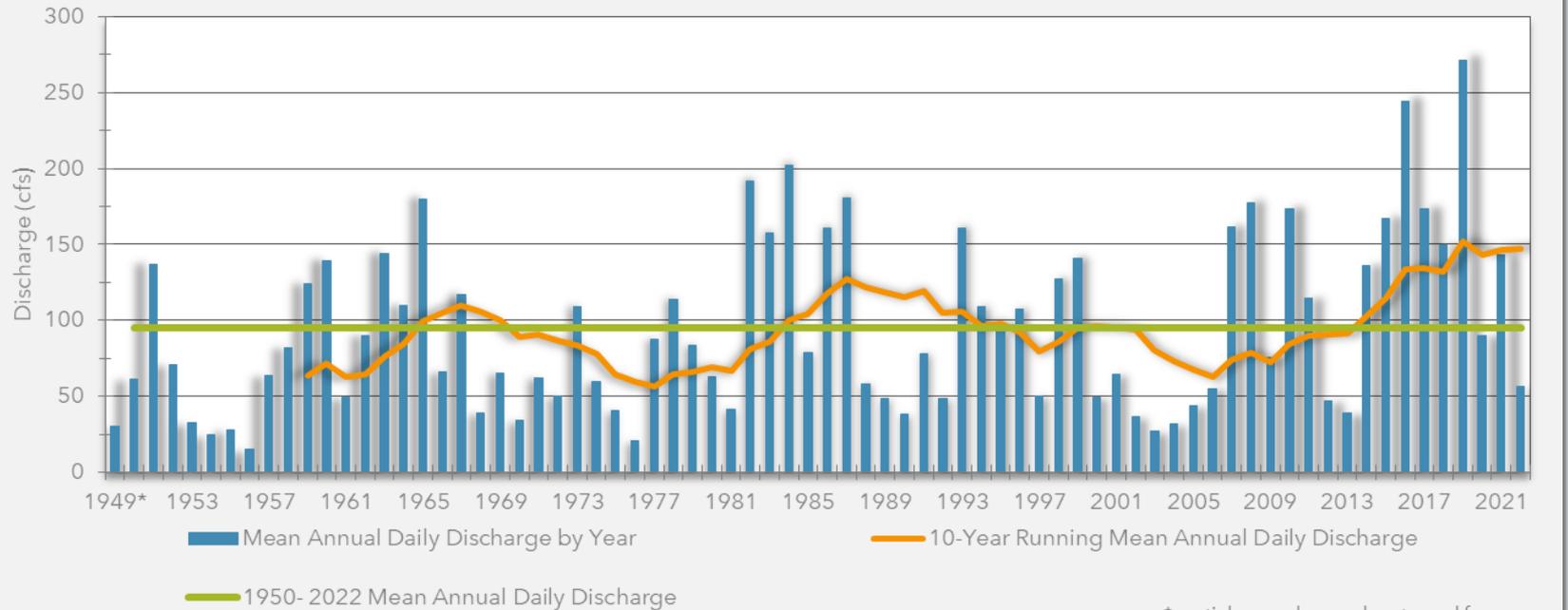


*partial annual record, may not be used for means

SURFACE WATER MONITORING

Annual Mean Daily Discharge on Wahoo Creek near Ithaca, NE 1949-2022

USGS Streamgage 06804000



*partial annual record, not used for means

NeDNR SURFACE WATER PUMP SITE INSPECTIONS

During Summer 2022, the Department inspected 131 pumpsites within the LPNNRD. Of the sites visited:

- 27 had pumpsites set up for irrigation.
- 40 appeared to be using or have access to groundwater
- 64 appeared to be dryland

As time and conditions allow, the NeDNR field office staff visit pump sites for each appropriation to check for compliance and collect various data.

NEEDNR SURFACE WATER PUMP SITE INSPECTIONS

2022 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	350	219	60
Lower Loup	760	616	369
Lower Platte North	153	131	27
Lower Platte South	134	136	8
Papio-Missouri River	49	26	6
Upper Elkhorn	68	65	5
Upper Loup	20	18	2
Total	1534	1211	477

NE DNR VOLUNTARY SURFACE WATER USE REPORTING FOR LPNNRD

	Surface Water Only	Groundwater Only	Co-mingled	Dryland	Average Inches
2022 Water Use Acres and Source					
# Responses	14	8	4	9	
Acres Irrigated	1,163.7	549.6	295	625.1	
2022 Estimated Water Use*					
# Responses	8		3		6.74
Acres Irrigated	666.7		275		

**The estimated water applied is reported by a sub-set of the total voluntary responses. The estimate here represents those who included water use data in their response.*

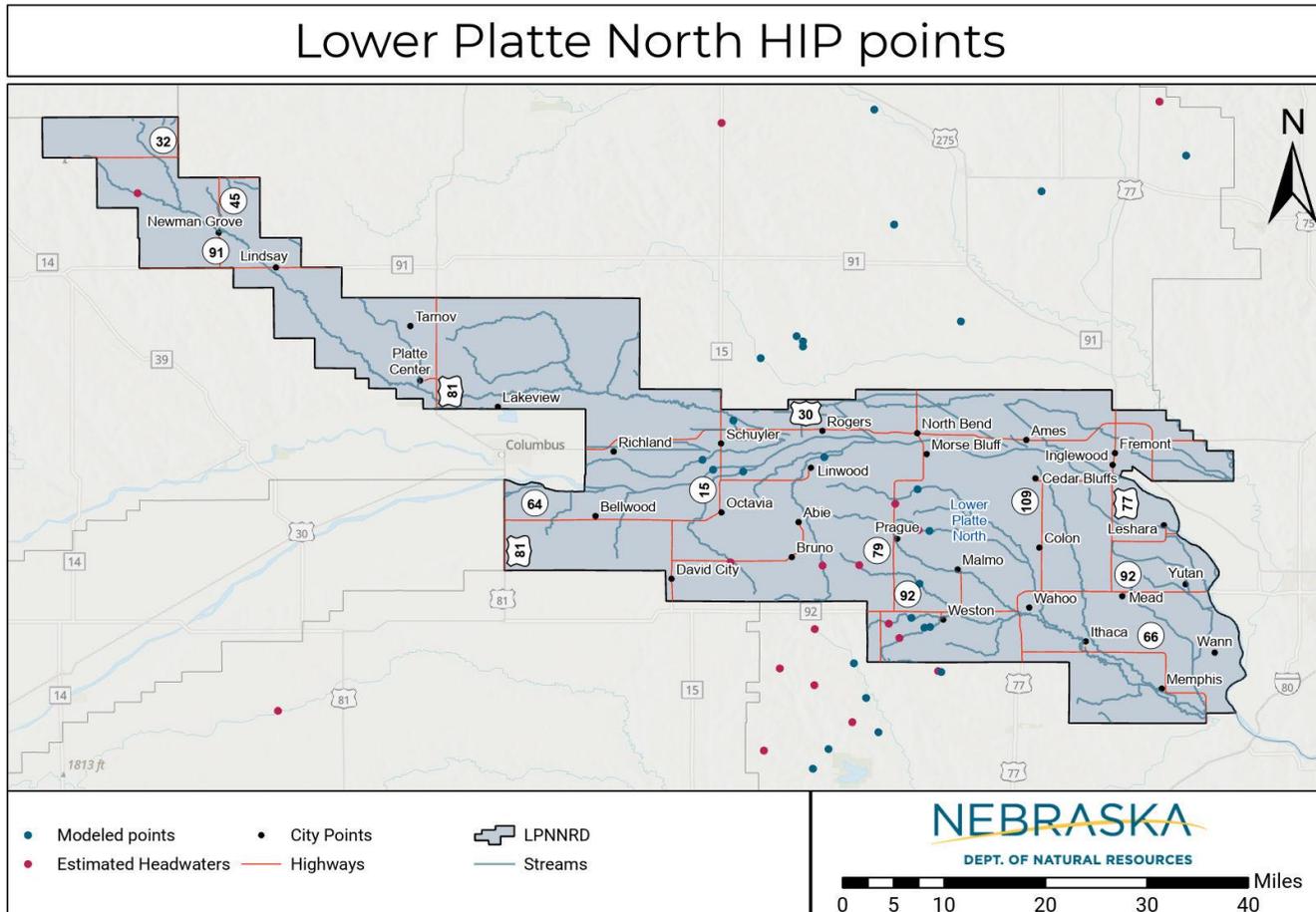
HEADWATERS INVENTORY PROGRAM (HIP)

A stream's modeled headwater is a modeled point where groundwater first begins to add flow to a stream, creating a wet reach.

Points are:

- imported into ArcGIS and plotted using a basin's coordinate grid system,
 - attached to the represented stream using the National Hydrology Database, and
 - used by DNR staff conducting the field survey as a benchmark point, allowing them to check the accuracy of the model at a point.
-
- Field verification is done by NeDNR staff who walk the modeled point to check that it is the actual location.
 - Known headwaters will be revisited on a monthly basis throughout the year to assess groundwater levels.
 - Initial locational point surveys are currently underway.

HEADWATERS INVENTORY PROGRAM



NE DNR SURFACE WATER ADMINISTRATION

No surface water administration was required on rights within the LPNNRD during 2022.

MUNICIPAL & INDUSTRIAL SURFACE WATER USES

- No new surface water applications for municipal or industrial uses were approved during 2022.

NE DNR GROUNDWATER & SURFACE WATER PERMITTING ACTIONS

Groundwater

- Permits cancelled = 0
- Permits issued = 0

Surface Water

- Approved for expedited transfer = 0
- Applications approved = 0

NEDNR GROUNDWATER PERMITTING ACTIONS

Groundwater permits cancelled = 0

Groundwater permits issued = 0

Includes groundwater permits for the following uses:

- Application to Drill Without Regard to Spacing
- Industrial Groundwater Transfers
- Industrial Transfer Notice
- Municipal Groundwater Transfers
- Municipal Notice of Intent
- Permit to Violate Well Spacing
- Permit to Transfer to Adjoining State

NeDNR DATA COLLECTION & MONITORING

Surface Water Appropriations Expired, Cancelled-in-Part or Cancelled-in-Full in 2022 Within the Voluntary IMP Area

Appropriation Number	Cancel Date	Source	NeDNR Action	Location Diversion or Reservoir	Use	Begin Acres	Cancelled			Estimated Date of Last Use	Basis for NeDNR Action
							Acres	Grant (cfs)	Grant (af)		
A-14265	11/9/2022	Wilson Cr.	Cancelled in Full	S11-T16N-R01E	IR	83.6	83.6	NA	1.19	2000	REL. 9775

LPNNRD

DATA COLLECTION & MONITORING

IMP includes 14 collection and monitoring activities for the NRD

- NRD Monitoring
 - Irrigated acres expansion
 - Groundwater level measurements
 - Municipal water use
- Other
 - Studies and Planning
 - Education/Outreach Collaborations

LPNNRD

DATA COLLECTION AND MONITORING

- Groundwater elevation data
 - Report was given to Committee/Board June 2022 and in LPNNRD Annual Lower Platte Basin Plan Report
- Certified irrigated groundwater acres (HCA - Hydrological Connected Area)
 - Total Irrigated - 391,684.14 acres
 - HCA Area - 334,902 acres
 - Non HCA - 56,781.70 acres
- Municipal and industrial groundwater uses
 - 24 communities reported

**Access data from the LPNNRD's 2019 Report for the Lower Platte River Basin-Wide Management Plan—put in a HyperLink*

LPNNRD

DATA COLLECTION AND MONITORING

Flow meter data - 2022

- 1175 flow meters reported
 - SQS#1 - 6.28" in/ac
 - SQS#2 - 7.64" in/ac.
 - Both areas combined - 7.18" in/ac.
 - Corn Avg. 7.16" in/ac. (Min. 1.00"; Max. 12.52")
 - Soybean Avg. 4.24" in/ac. (Min. 1.72"; Max. 6.77")
- Rest of the District:
 - Pivot/Corn Avg. 8.3" in/acre (Min. 1.06"; Max. 35.88")
 - Pivot/Soybeans Avg. 6.38" in/acre (Min. 1.68"; Max. 19.01")
 - Gravity/Corn Avg. 19.40" in/acre (Min. 12.64"; Max 38.53")
 - Gravity/Soybeans Avg. 19.66" in/acre (Min. 10.15"; Max. 26.45")

LPNNRD

DATA COLLECTION AND MONITORING

- New groundwater consumptive uses (agricultural, municipal, industrial)
 - Agricultural: 278.03 Acre Feet
 - None for industrial or municipal
 - These are for wells permitted by the NRD
- Transfer of acres for groundwater consumptive uses (agricultural, municipal, industrial)
 - Agricultural - 16.52 Acre Feet
 - Butler and Platte County
- Credit groundwater consumptive uses
 - Credit of 365.38 Acre Feet
 - Acres approved for irrigation but not developed, 2017-2020

IMP MODELING UPDATES

- LPNNRD hydrogeologic framework study with UNL-CSD
 - Jesse Korus and Nafyad continue the modeling process in the SQS #2 area.
 - Jesse and Nafyad are converting the LPMT Regional Model data to fit into the refined grid model being developed

ESTIMATED STREAM DEPLETIONS

NEW DEPLETIONS ACCOUNTING

LOWER PLATTE RIVER BASIN 2016-2022

NRD	PEAK SEASON 5-YR ALLOWABLE DEPLETION (AF)	2022 NRD Reported NET Depletion (AF)	NeDNR Reported Depletion (AF)	NRD Prior Years Peak Season CU Use (AF)	2022 NRD Peak Season CU (AF)	NRD Total Peak Season CU Use (AF)	NeDNR Total Peak Season CU (AF)	Total New Peak Season Depletion	Total New Peak Season CU	Remaining 5-YR Allowable Depletion (AF)	Percent of Remaining 5-YR Allowable Depletion
Upper Loup NRD	5,435	41.5	0.0	723.4	236.2	959.6	0.0	41.5	959.6	5,393.5	99.2%
Lower Loup NRD	11,910	-80.8	62.1	2,192.8	155.1	2,347.9	62.1	-18.7	2,410.0	11,928.7	100.2%
Upper Elkhorn NRD	2,965	37.8	0.0	629.7	56.4	686.1	0.0	37.8	686.1	2,927.3	98.7%
Lower Elkhorn NRD	8,346	0.0	-10.0	2,826.6	0.0	2,826.6	-10.0	-10.0	2,816.6	8,356.0	100.1%
Papio-Missouri River NRD	1,826	14.6	0.0	60.8	26.7	87.5	0.0	14.6	87.5	1,811.4	99.2%
Lower Platte South NRD	2,098	3.3	19.2	23.6	3.3	26.6	19.2	22.5	45.8	2,075.5	98.9%
Lower Platte North NRD	3,736	-54.8	0.0	1,918.4	-70.8	1,847.5	0.0	-54.8	1,847.5	3,790.8	101.5%
TOTALS	36,316	(38)	71	8,375	407	8,782	71	33	8853	36,283	100%

CU = Consumptive Use AF = Acre Feet

BASIN COALITION PLAN IMPLEMENTATION

MODELING UPDATES

SUB-REGIONAL MODEL

	Begin	Conclude
Grant Work	December 2022	August 2023
Model Construction	June 2023	August 2024
Model Calibration	October 2024	June 2025
Documentation	February 2024	June 2025
Basin Analysis	April 2025	December 2026

BASIN-WIDE MODELING EFFORTS

- Lower Elkhorn NRD Model
- CENEb Model
 - Loup NRDs and Upper Elkhorn NRD
- Lower Platte Basin Missouri-Tribs Model
 - The Lower Platte Basin NRD water board managers met with NeDNR April 27th and June 15th this year to begin discussion on the construction of district models, similar to what was done with LENRD
 - Most of the discussion centered around model objectives for the each NRD and NeDNR so that the final model product would be beneficial to both NeDNR and the NRDs
 - The decision was made to apply for WSF funding so that State funds could be leveraged against model construction costs
 - WSF Grant approved July 19, 2023, after which model objectives and design will be discussed with the partnership and prospective contractors
 - Goal is to start August 2023 on the modeling process

BASIN-WIDE ACTIVITIES

LPNNRD and NeDNR participate in the Lower Platte River Basin Coalition (LPRBC)

- Managers' and Technical Team meetings
- Annual reporting (see next slide)
- Annual Reporting Database
 - Tool to report and store annual water use data
- Lower Platte Missouri Tributaries Model
 - Tool to analyze aquifer-stream interactions
- Geological Framework Project--Papio, NeDNR and LPNNRD
 - Completion deadline of January 1, 2022 was met

LPNNRD

EDUCATION & OUTREACH ACTIVITIES, 2022

NeDNR

- State Fair
- Husker Harvest Days

LPNNRD

- Nitrogen Certification Classes
- Spring Conservation
- School Presentations

LPNNRD & NEDNR 2022 MEETINGS

- Meetings:
 - Quarterly Meetings
 - Annual Meeting August 31, 2022
- Topics and Discussions:
 - Modeling updates
 - LPNNRD hydrogeologic framework study
 - Lower Platte Basin hydrologically connected area refinement
 - Lower Platte River Basin Coalition
 - INSIGHT Analysis
 - Data Collection
 - New 5-year ILCA to continue Plan

ACTIONS AND GOALS

JOINTLY IDENTIFIED ACTIONS FOR NEXT TWO YEARS

- Continue to
 - Cooperate on efforts to increase sources of available surface & groundwater data
 - Collaborate on hydrogeologic investigations of the LPNNRD through with UNL's Conservation and Survey Division
 - Update Lower Platte-Missouri Tributaries groundwater model with AEM data
 - Participate in basin-wide and regional planning efforts such as
 - ENWRA, the Lower Platte River Consortium (drought planning), and Lower Platte River Basin Coalition (LPRBC)
 - Develop depletion/consumptive use tracking database with LPRBC
- Participate in education and outreach events in the LPNNRD, as available
- Review data from local studies, as available

QUESTIONS?

Daryl Andersen
Water Resources Manager
dandersen@lpnrd.org



THANK YOU!

Tyler Martin
IWM Coordinator
tyler.martin@nebraska.gov



CHEMIGATION - July 2023

TOTAL CHEMIGATION APPLICATIONS IN 2022 (739)

NEW CHEMIGATION APPLICATIONS - 52

(1) Boone (7) Butler (12) Colfax (6) Dodge (1) Madison (5) Platte (20) Saunders

RENEWALS: 641

BOONE COUNTY - 49
BUTLER COUNTY - 92
COLFAX COUNTY - 71
DODGE COUNTY - 116
MADISON COUNTY - 7
PLATTE COUNTY - 113
SAUNDERS COUNTY - 193

RENEWAL INSPECTIONS: 176

(23) Boone (30) Butler (13) Colfax (31) Dodge (0) Madison (13) Platte (66) Saunders

NEW INSPECTIONS: 51

(1) Boone (7) Butler (13) Colfax (5) Dodge (1) Madison (5) Platte (19) Saunders

NEW CANCELLATIONS: 0

(0) Boone (0) Butler (0) Colfax (0) Dodge (0) Madison (0) Platte (0) Saunders

EMERGENCY: 0



Daryl Andersen
 Lower Platte North NRD
 511 Commercial Park Road
 Wahoo, NE 68066-0126

July 6, 2023
 Project No: 5036LPN02
 Invoice No: 23438

Project 5036LPN02 LPNNRD Hydrogeologic Assessment

Professional Services through June 25, 2023.

Task 03 Deliverables

Professional Personnel

	Hours	Rate	Amount	
Mohr, Jonathan	3.50	183.00	640.50	
Sopiwnik, Roscoe	24.75	187.00	4,628.25	
Totals	28.25		5,268.75	
Total Labor				5,268.75
		Total this Task		\$5,268.75
		Total this Invoice		\$5,268.75

Outstanding Invoices

Invoice Number	Date	Balance	
22874	5/8/2023	10,845.50	
23226	6/7/2023	7,266.75	
		18,112.25	
		Total Now Due	\$23,381.00

TERMS: Net 30 days. A finance charge of 1.5% per month is applied to past due amounts.

PRECISION FERTIGATION SUNSET SEMINAR

August 8, 2023 | Bellwood, NE



YOU'RE INVITED!

Join us to hear from Sentinel Fertigation, the Nebraska On-Farm Research Network, and local growers on how precision nitrogen management can benefit your cropping system! Networking and refreshments will follow the event.



SCAN FOR LOCATION



NEBRASKA ON-FARM
RESEARCH NETWORK



LOWER PLATTE NORTH
Natural Resources District



SENTINEL
FERTIGATION

AUGUST 8, 2023

7:00 PM

Field at the Corner of
Hwy 64 and Rd F
Bellwood, NE

Coordinates:
(41.3408, -97.2781)

For more information on
Sunset Seminar dates,
registration, and locations,
visit [sentinelfertigation.com/
sunset-seminars](https://sentinelfertigation.com/sunset-seminars).

Scan to Register!



INTERLOCAL AGREEMENT

THIS INTERLOCAL AGREEMENT, hereafter referred to as AGREEMENT, is made and entered into by and between the Lower Platte North Natural Resources District, with headquarters offices located at 511 Commercial Park Road, Wahoo, Nebraska, hereafter referred to as LPNNRD, and the Lower Loup Natural Resources District, with headquarters offices located at 2620 Airport Drive, Ord, Nebraska, hereafter referred to as LLNRD. The LPNNRD and LLNRD, political subdivisions of the State of Nebraska, organized and existing by virtue of Neb. Rev. Statutes, are hereafter referred to as PARTICIPANTS.

RECITALS

A. WHEREAS Art. XV, § 8, Neb. Const. and Neb. Rev. Stat. §§ 13-801 to 13-827 (1991) authorize any two or more public agencies, including natural resources districts, to enter into Interlocal Agreements with one another for joint or cooperative action of any power or powers, privileges or authorities exercised or capable of being exercised individually by such public agencies, and to create a joint entity in furtherance of such joint or cooperative action with such powers as the Interlocal Agreement shall specify; and

B. WHEREAS the PARTICIPANTS have agreed to pursue a USGS Nitrate Legacy Groundwater Impact Study to determine the nitrate concentration and age of the groundwater in Platte, Colfax and Dodge Counties.

C. WHEREAS the PARTICIPANTS jointly request an analysis of groundwater age to determine vulnerability of aquifers to nitrate contamination;

D. WHEREAS the PARTICIPANTS desire to cooperate for the purpose of understanding the long-lasting impacts on groundwater due nitrogen contamination; and

E. WHEREAS the LPNNRD agrees to reimburse the LLNRD for 50% of the combined NRD costs associated with the Nitrate Legacy Groundwater Impact Study; and

F. WHEREAS the PARTICIPANTS desire to use the Nitrate Legacy Groundwater Impact Study to assist the LLNRD and LPNNRD Board of Directors in making scientifically and statistically defensible management decisions regarding nitrate management; and

NOW, THEREFORE in consideration of the above recitals and mutual premises contained herein, the PARTICIPANTS agree as follows:

ARTICLE I

OBJECTIVES AND PURPOSES

Section I .0 I. The objectives and purposes of this AGREEMENT are to carry out those public powers, duties and obligations of the governing bodies of the PARTICIPANTS relating to the Nitrate Legacy Groundwater Impact Study conducted for the LPNNRD and the LLNRD.

ARTICLE II

TERM OF AGREEMENT

Section 2.01. This AGREEMENT shall become effective and binding upon its execution by both undersigned PARTICIPANTS.

Section 2.02. This AGREEMENT can be terminated by either PARTICIPANT upon 30 days written notice to the other PARTICIPANT.

ARTICLE III

DEFINITIONS

Section 3 .0 I. Nitrate Legacy Groundwater Impact Study shall include: the sampling of 24 dedicated monitoring and domestic well sites within the project area. Water will be analyzed for environmental tracers and other supporting geochemical data.

ARTICLE IV

RESPONSIBILITIES OF THE LLNRD

Section 4.0 I. LLNRD will act as a sponsor for the project and will process payment of all invoices received from the USGS that are related to the project.

Section 4.02. The LLNRD agrees to provide the LPNNRD with all materials received from field data collection and analysis that is relevant to the Nitrate Legacy Groundwater Impact Study.

ARTICLE V

RESPONSIBILITIES OF THE LPNNRD

Section 5.01. LPNNRD agrees to provide the LLNRD with funding and in-kind services over the life of the three-year project.

Section 5.02. Upon written request from the LLNRD to the LPNNRD, including delivery of an invoice, the LPNNRD agrees to reimburse the LLNRD, within 30 days, for 50% of the costs associated with the Nitrate Legacy Groundwater Impact Study.

ARTICLE VI

POWERS

Section 6.01. The PARTICIPANTS understand and agree that this AGREEMENT is not intended to, nor does it, create a partnership, joint venture or any other type of similar relationship which may give rise to joint and several liability.

Section 6.02. The PARTICIPANTS shall have all the powers, including the power to make and execute contracts, and other instruments necessary or convenient to the exercise of their powers, to achieve the objectives and purposes stated in this AGREEMENT.

Section 6.03. The PARTICIPANTS shall be authorized to utilize their staffs and equipment to perform tasks necessary to carrying out their responsibilities.

Section 6.04. The PARTICIPANTS shall have such other powers as are permitted to them under the Interlocal Cooperation Act which are necessary and proper for the achievement of the stated objectives and purposes as set forth by this AGREEMENT.

ARTICLE VII

SPECIAL PROVISIONS

Section 7.0 I. The PARTICIPANTS agree that each PARTICIPANT shall retain a copy of completed Nitrate Legacy Groundwater Impact Study as deemed necessary by their respective Boards of Directors, without the consent of the other PARTICIPANT.

ARTICLE VIII

AMENDMENTS

Section 8.01. Either PARTICIPANT may propose an amendment to this AGREEMENT. Amendments will not become effective until approved by both PARTICIPANTS.

ARTICLE IX

EXECUTION

This AGREEMENT is hereby executed by the PARTICIPANTS in duplicate, each to be considered an original, with the understanding that this AGREEMENT becomes effective as and when both PARTICIPANTS have executed both originals. The PARTICIPANTS shall be bound to the same extent and purpose as if both PARTICIPANTS had simultaneously joined in the execution of a single master copy.

IN WITNESS WHEREOF, each of the PARTICIPANTS has caused this AGREEMENT to be executed by their duly authorized representatives as of the date and year shown below.

LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

Dated _____

General Manager

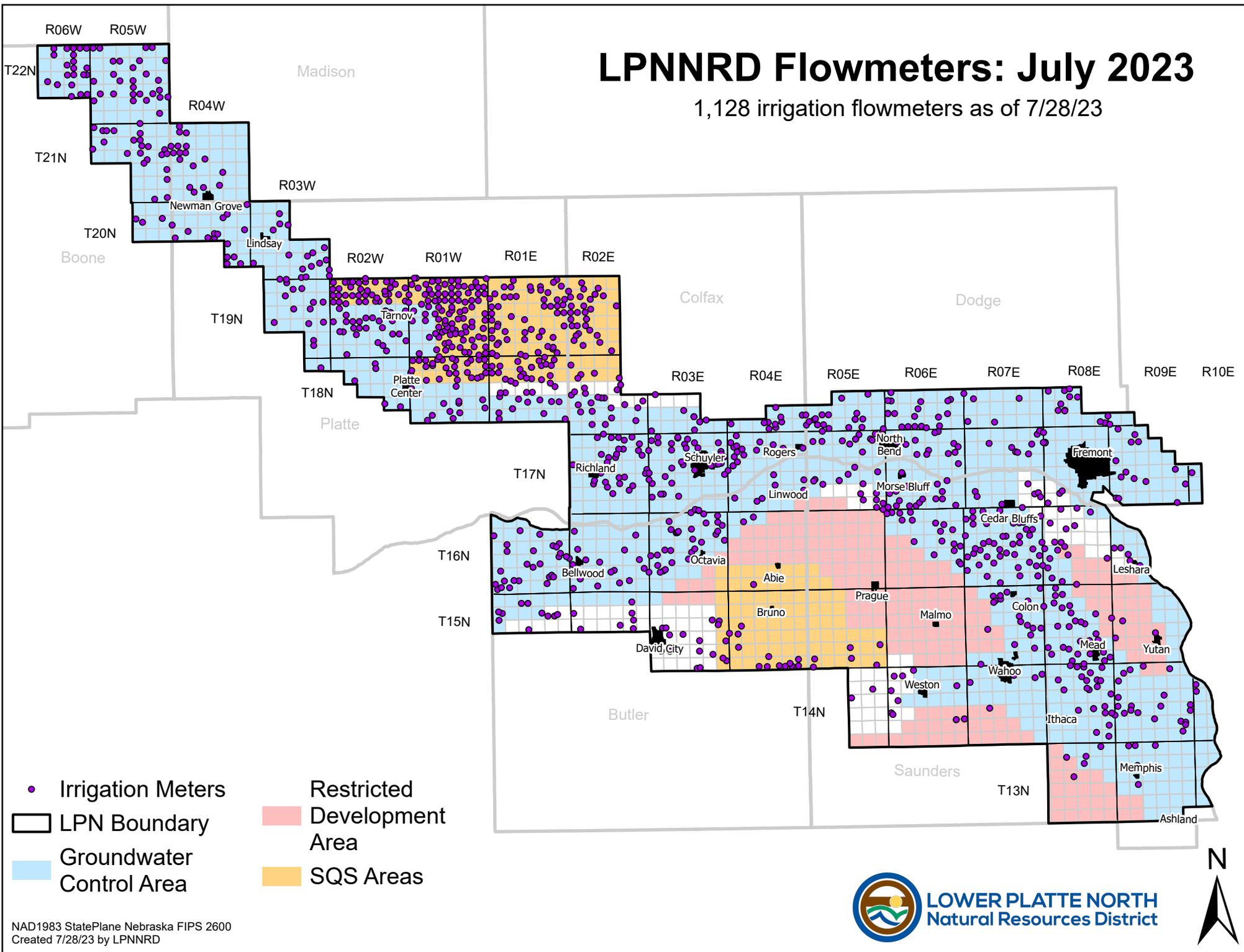
LOWER LOUP NATURAL RESOURCES DISTRICT

Dated _____

General Manager

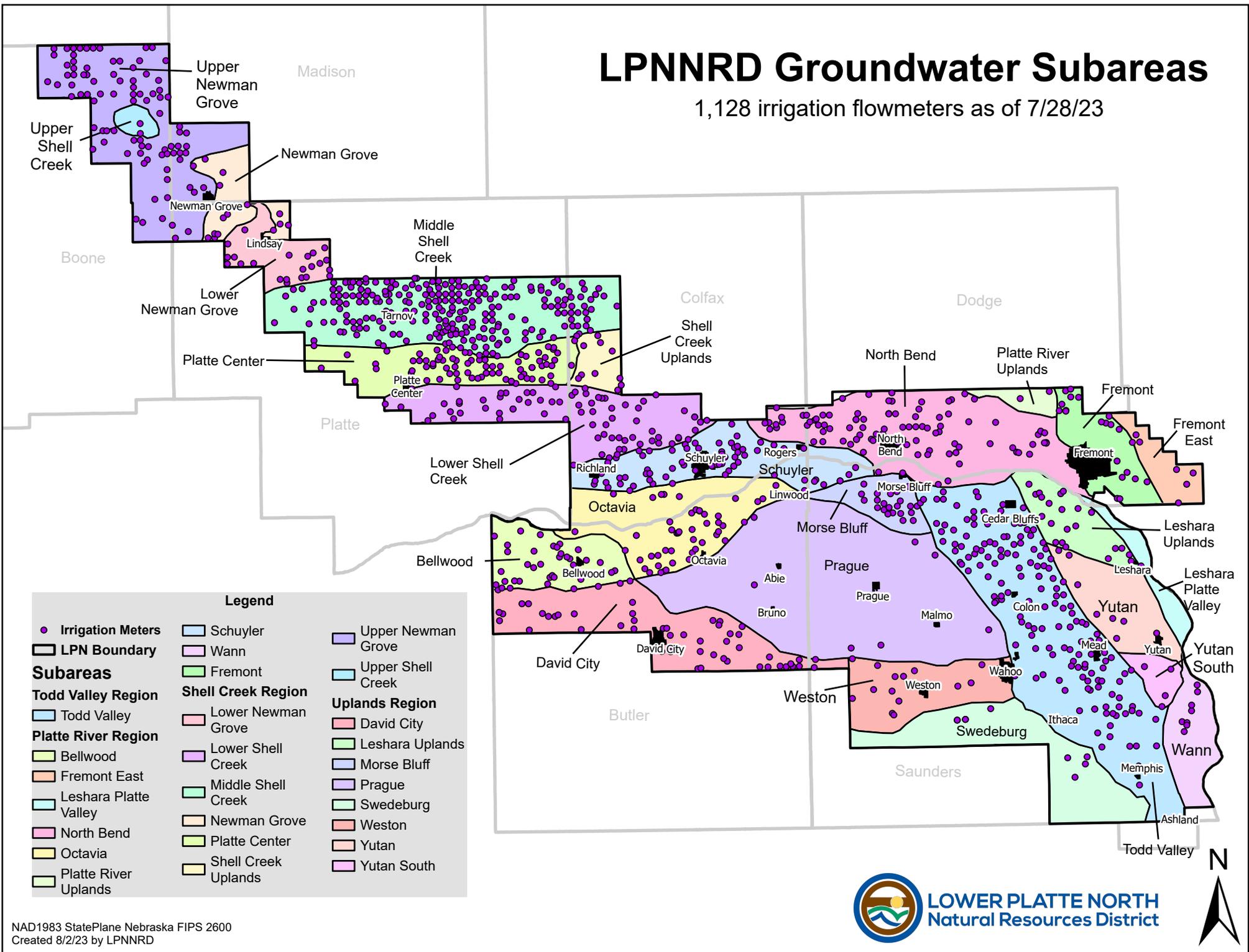
LPNNRD Flowmeters: July 2023

1,128 irrigation flowmeters as of 7/28/23



LPNNRD Groundwater Subareas

1,128 irrigation flowmeters as of 7/28/23



Legend

- Irrigation Meters
- LPN Boundary

Subareas

 Todd Valley	 Schuyler	 Upper Newman Grove
 Bellwood	 Wann	 Upper Shell Creek
 Fremont East	 Fremont	 Lower Newman Grove
 Leshara Platte Valley	 Lower Shell Creek	 Middle Shell Creek
 North Bend	 Newman Grove	 Shell Creek Uplands
 Octavia	 Platte Center	 Platte River Uplands
 Platte River Uplands	 Shell Creek Uplands	 Yutan
	 Yutan South	

NAD1983 StatePlane Nebraska FIPS 2600
Created 8/2/23 by LPNNRD



Subarea	Irr Wells	Number_Meters	% Metered
Octavia	372	49	13%
Lower Shell Creek	349	77	22%
Wann	62	8	13%
Weston	78	14	18%
Yutan South	34	4	12%
Leshara Uplands	72	22	31%
Morse Bluff	50	22	44%
Swedeburg	32	9	28%
Yutan	32	8	25%
Middle Shell Creek	352	245	70%
Platte Center	148	78	53%
Shell Creek Uplands	12	10	83%
Platte River Uplands	7	2	29%
Fremont East	53	6	11%
Fremont	159	21	13%
Prague	57	7	12%
Upper Shell Creek	2	2	100%
North Bend	1008	93	9%
Schuyler	496	71	14%
Bellwood	307	35	11%
Leshara Platte Valley	14	1	7%
Todd Valley	592	162	27%
David City	144	54	38%
Lower Newman Grove	116	24	21%
Newman Grove	48	13	27%
Upper Newman Grove	289	89	31%
TOTAL:	4885	1126	23%