

# LOWER PLATTE NORTH NRD INTEGRATED MANAGEMENT PLAN 2024 ANNUAL REPORT

OCTOBER 30, 2025  
LPNNRD OFFICE, WAHOO, NE

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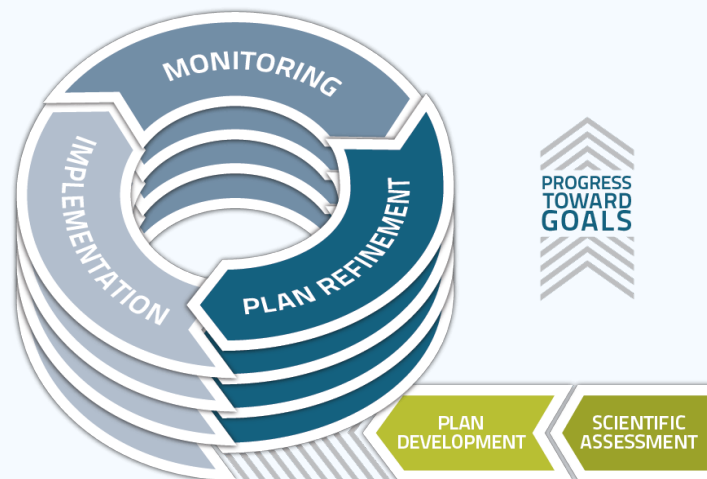
Tyler Martin  
Basin Coordinator



# 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 OVERVIEW

# 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.

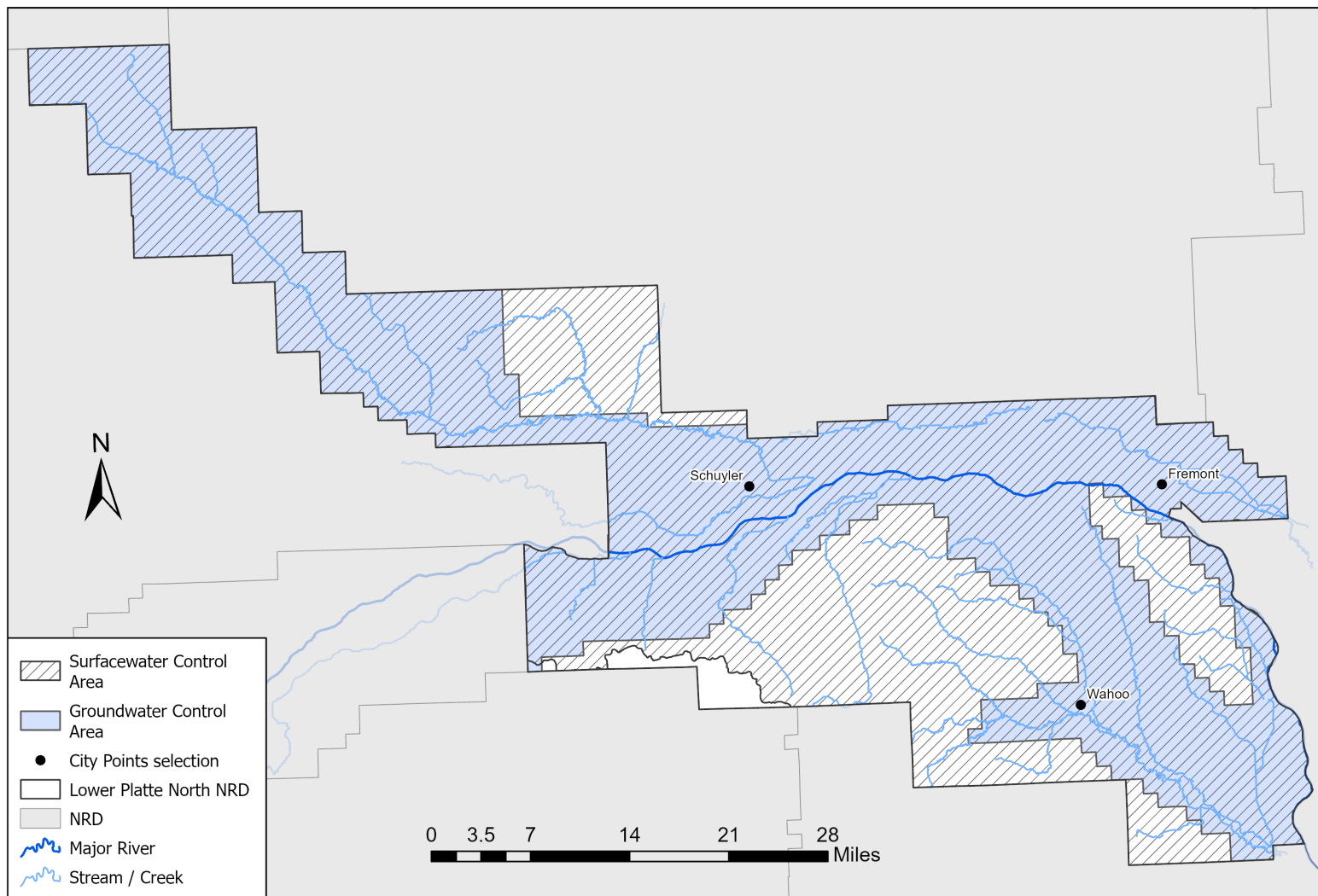
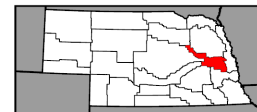
## Goal 5

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.

# LPNNRD IMP CONTROL AREAS



## Voluntary Integrated Management Plan Control Areas



# SURFACE WATER AND GROUNDWATER MONITORING

# NeDNR DATA COLLECTION & MONITORING

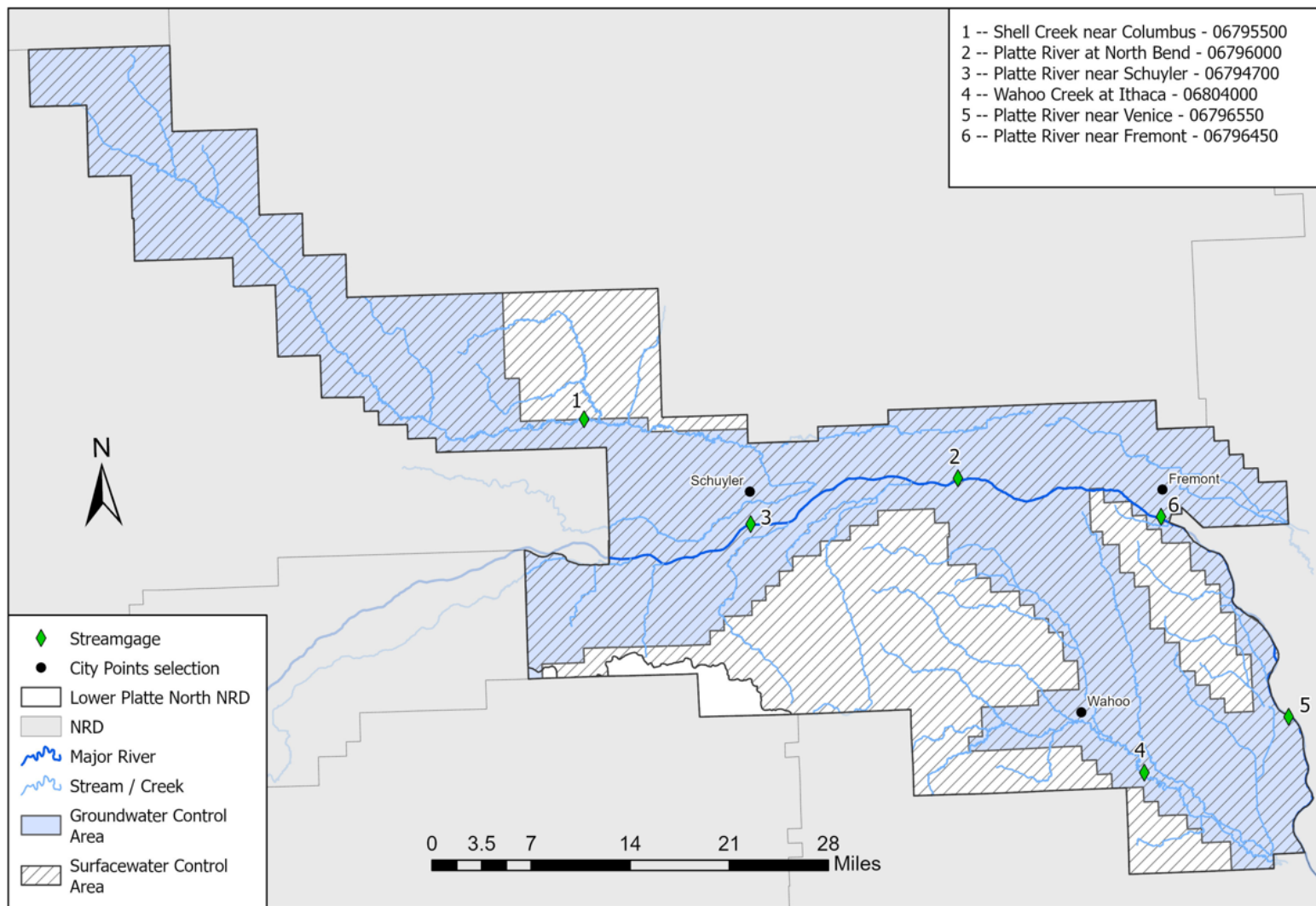
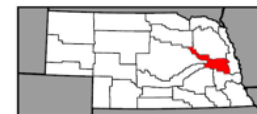
## NeDNR Monitoring

- Surface water monitoring: streamgage locations
- Surface water pump site inspections
- Surface water administration
- Voluntary surface water use reporting
- Hydrologic Investigation Project (HIP)

# USGS STREAMGAGE LOCATIONS IN LPNNRD

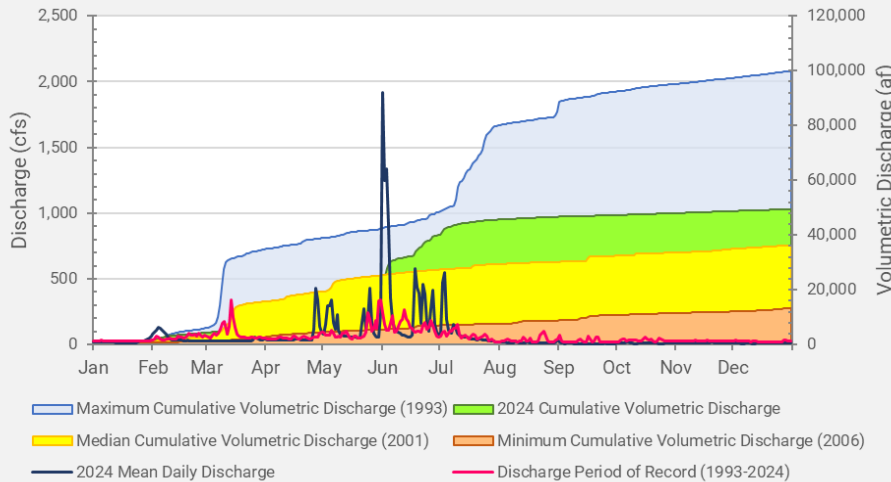


## Streamgages within the Lower Platte North IMP Control Area

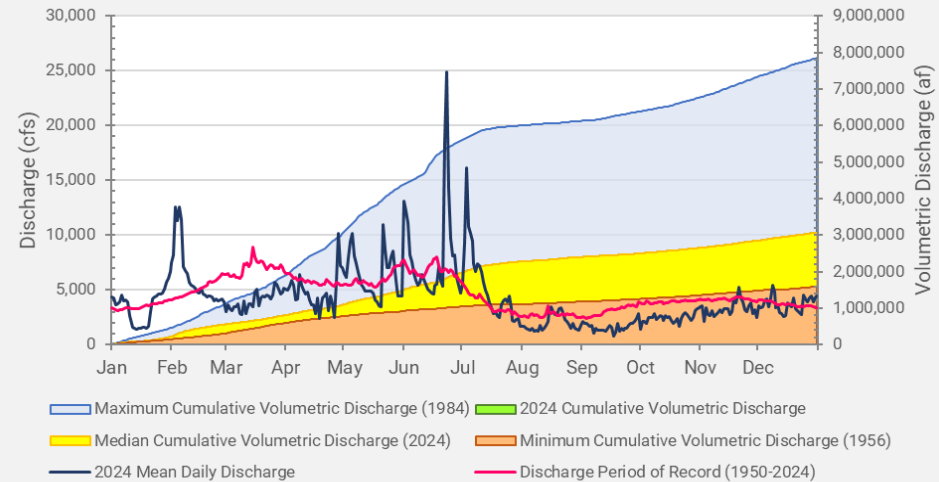


# SURFACE WATER MONITORING

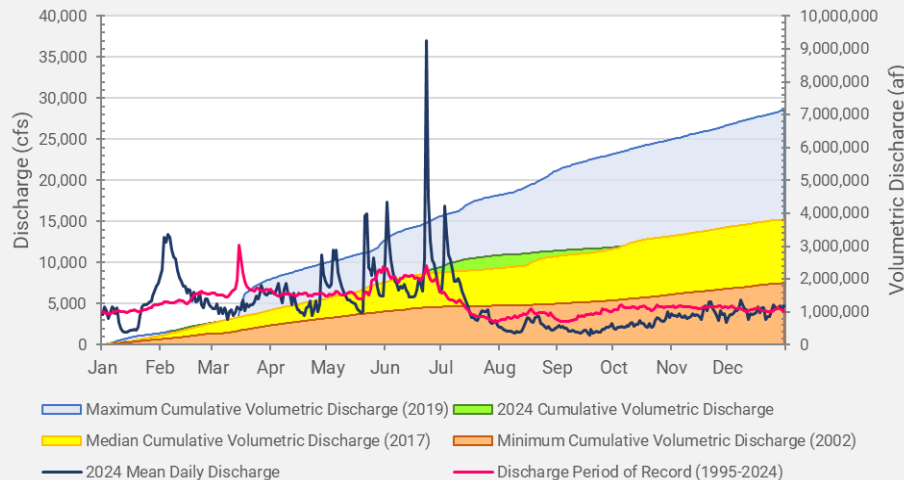
Shell Creek near Columbus  
USGS #06795500



Platte River at North Bend  
USGS #06796000

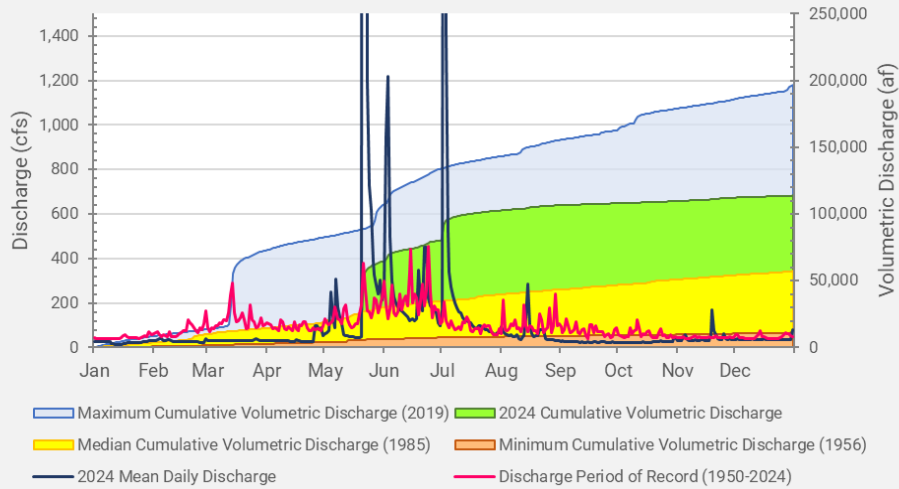


Platte River near Leshara  
USGS #06796500

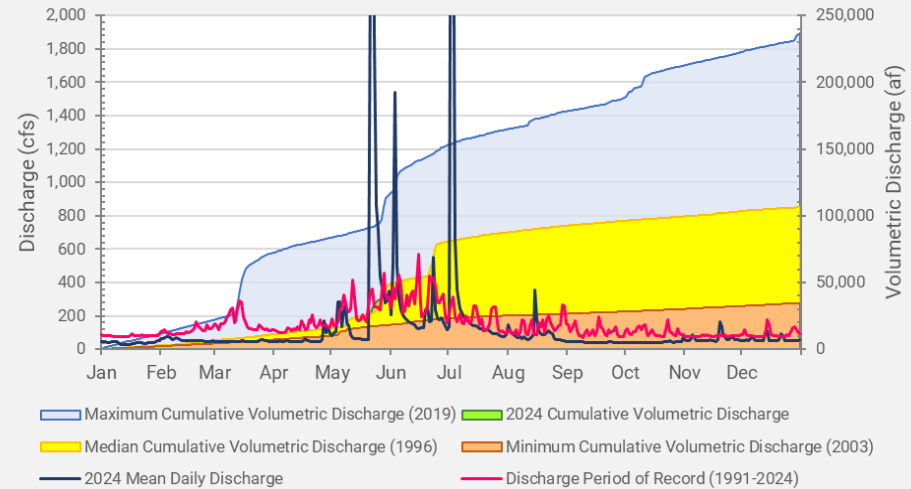


# SURFACE WATER MONITORING

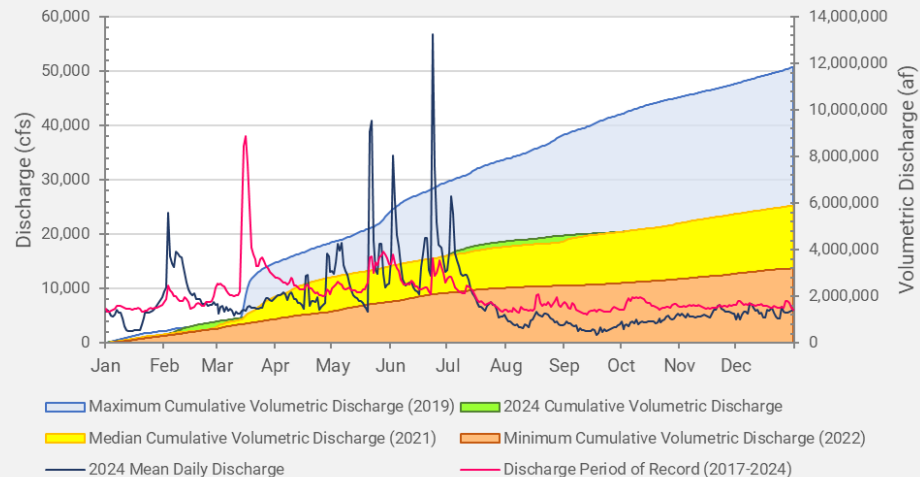
Wahoo Creek at Ithaca  
USGS #06804000



Wahoo Creek at Ashland  
USGS #06804700



Platte River near Ashland  
USGS #06801000



# NE DNR SURFACE WATER PUMP SITE INSPECTIONS

During Summer 2024, the Department inspected 139 pump sites within the LPNNRD. Of the sites visited:

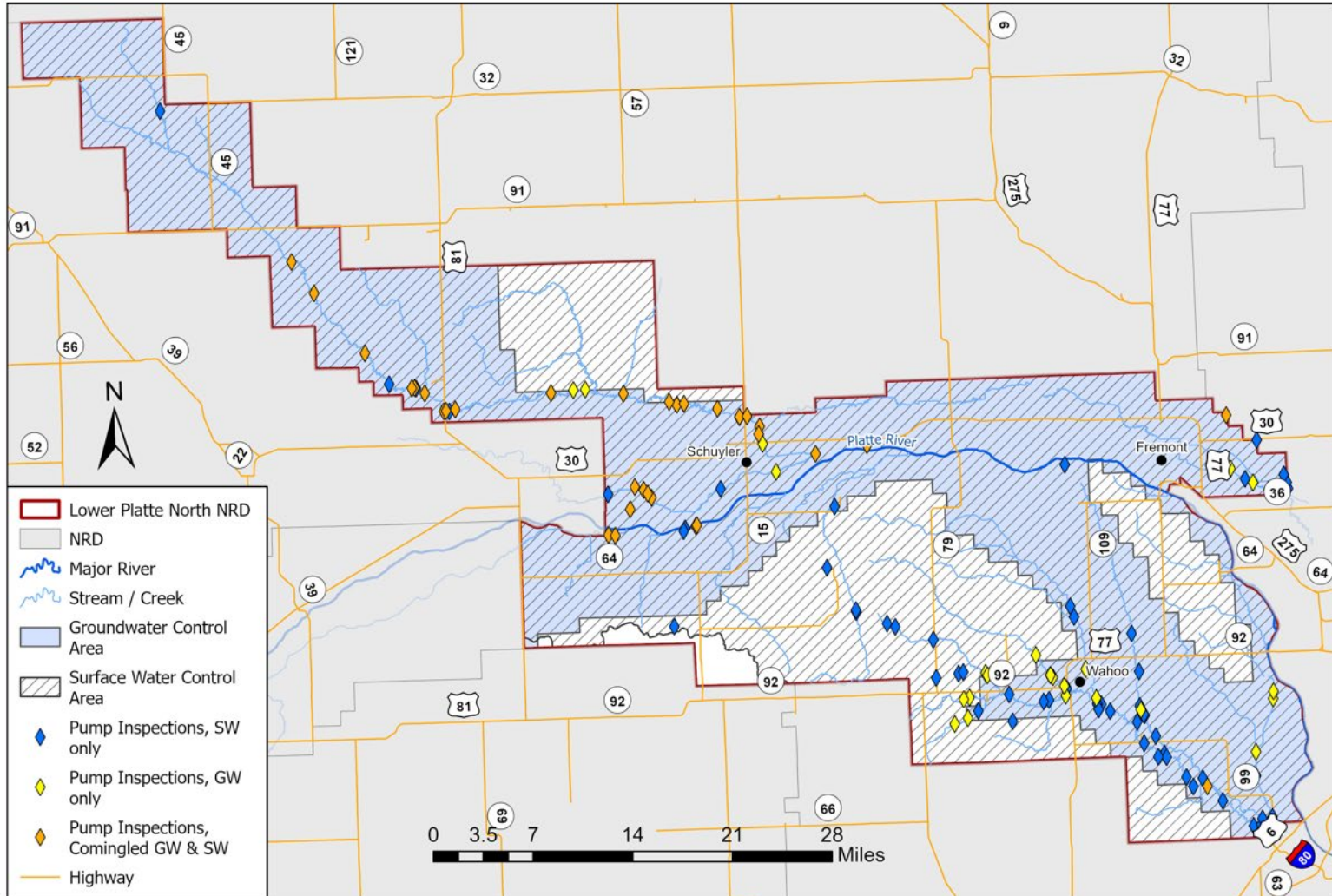
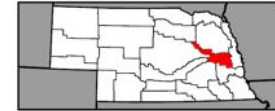
- 16 were surface water
- 49 were groundwater
- 71 appeared to be dryland
- 30 comingled
- A total of 197 pump site observations were made. Some rights were visited more than once for water administration purposes.

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

# NEDNR SURFACE WATER PUMP SITE INSPECTIONS



## 2024 Pump Site Inspections within the Lower Platte North IMP Control Area



# NEEDNR SURFACE WATER PUMP SITE INSPECTIONS

## 2024 Surface Water Pump Site Inspections - Lower Platte Basin NRDs

NRD	Total Number of Permits	Number of pump site Inspections	Number of pump sites set up for irrigation
Lower Elkhorn	339	323	71
Lower Loup	754	658	348
Lower Platte North	139	139	24
Lower Platte South	149	124	8
Papio-Missouri River	50	46	20
Upper Elkhorn	73	73	17
Upper Loup	24	18	0
<b>Total</b>	<b>1528</b>	<b>1381</b>	<b>488</b>

# NE DNR VOLUNTARY SURFACE WATER USE REPORTING FOR LPNNRD

	Surface Water Only	Groundwater Only	Co-Mingled	Dryland	Estimated Average Inches
<i>2024 Water Use Acres and Source</i>					
# Responses	21	10	9	2	5.8
Acres Irrigated	1521	322			

# HYDROLOGIC INVESTIGATION PROJECT (HIP)

- Designed to identify GW/SW interaction throughout Nebraska
- Assist in aligning and verifying actual conditions of modeling efforts
- Ongoing and Planned Efforts:
  - Identification of perennial and intermittent streams to increase the accuracy of our various models
  - Remote sensing

# 2024 Surface Water Administration in the Lower Platte Basin

Date of closure	Date Reopened	Permit Type	Number Affected	Reason for Closure	Reason for Reopening
5/29/2024	6/03/2024	Natural Flow	19	LLNRD Instream flow not met	LLNRD Instream flow being met
5/29/2024	6/03/2024	Storage	1	LLNRD Instream flow not met	LLNRD Instream flow being met
7/18/2024	8/15/2024	Natural Flow	142	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
7/18/2024	8/15/2024	Storage	29	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
8/27/2024	10/31/2024	Natural Flow	161	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
8/27/2024	10/31/2024	Storage	30	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
9/5/2024	10/31/2024	Natural Flow	82	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
9/5/2024	10/31/2024	Storage	87	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded

# NEDNR GROUNDWATER PERMITTING ACTIONS

Groundwater permits cancelled = 1

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

# MUNICIPAL & INDUSTRIAL SURFACE WATER USES

- No new surface water applications for municipal or industrial uses were approved during 2024.

# NEEDNR SURFACE WATER PERMITTING ACTIONS

- Approved for expedited transfer = 0
- Applications approved = 4 (See below)

## Surface Water Applications Approved January 1, 2024 to December 31, 2024

Appropriation Number	Date Approved	Source	Diversion/Reservoir Location	Use	Grant (cfs)	Grant (af)	Acres	New Acres
A-19949	1/3/2024	Wahoo Creek, North Fork, Trib to	Wahoo Creek 26A	ST	0	65.2	0	0
A-19973	7/26/2024	Wahoo Creek	Pump	IR	0.84	177.3	59.1	59.1
A-19956	1/5/2024	Wahoo Creek, North Fork, Trib to	Wahoo Creek 26B	FC	0	121.6	0	0
A-19957	1/5/2024	Wahoo Creek, North Fork, Trib to	Wahoo Creek 27	FC	0	169.5	0	0

# NeDNR SURFACE WATER PERMITTING ACTIONS

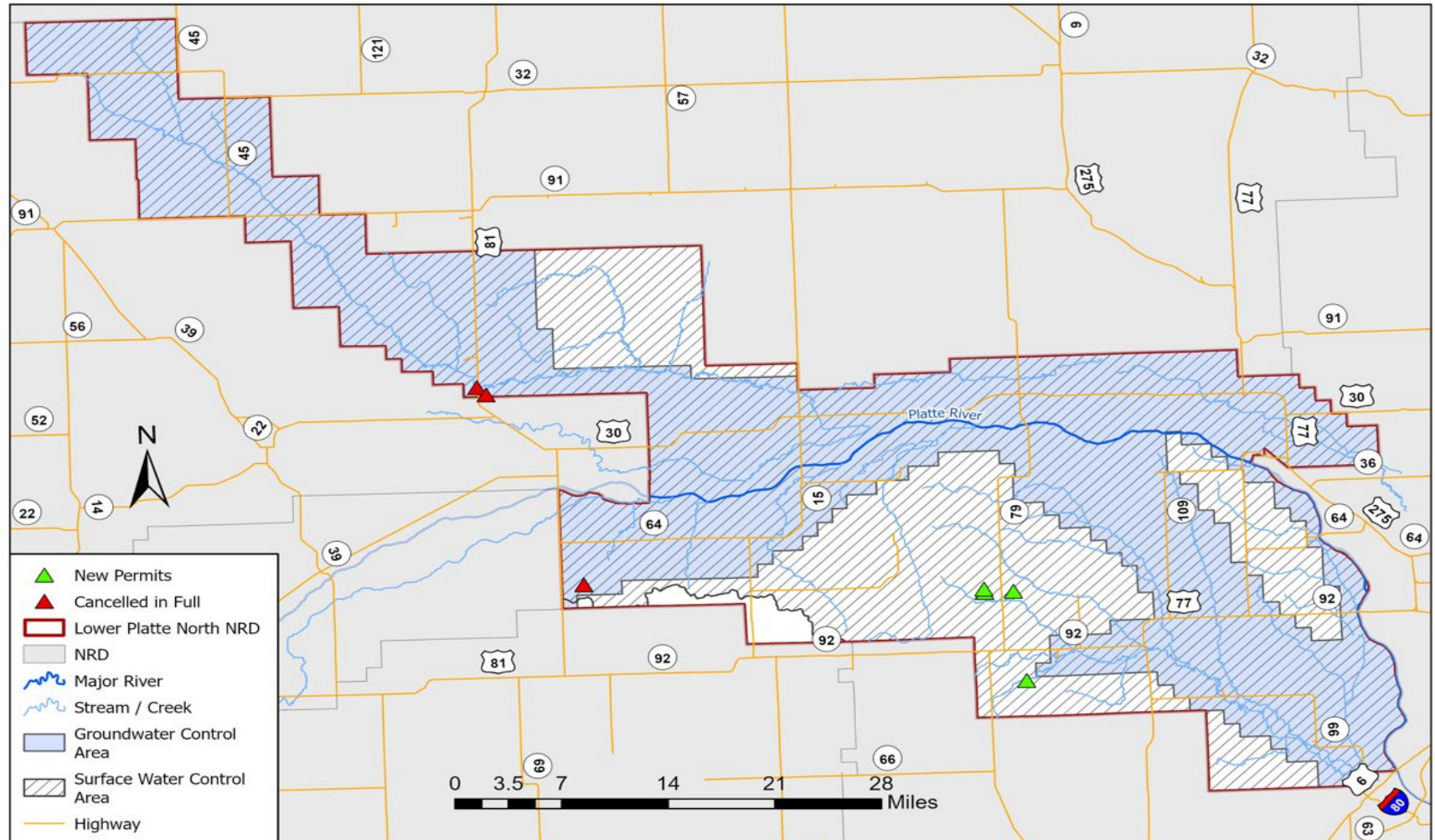
## Surface Water Appropriations Expired, Cancelled-in-Part or Cancelled-in-Full in 2024 Within the Voluntary IMP Area

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-19732	1/17/2024	Gruenewald Reservoir	Cancelled in Full	S08 T15N-R01E	IR	95.0	128	0	60.5	Never Used	BUC-10121
A-2787B	12/9/2024	Shell Creek	Cancelled in Full	S30 T18N-R01W	IR	45.5	45.5	0.33	136.5	Unknown	REL-10797

# MAP OF SURFACE WATER PERMITTING ACTIONS

NEBRASKA  
DEPT. OF WATER, ENERGY, AND ENVIRONMENT

## 2024 Surface Water Permitting Actions within the Lower Platte North IMP Control Area



# LPNNRD

## DATA COLLECTION & MONITORING

- Groundwater elevation data
- Flow meter data (if meter data is collected)
- Certified irrigated groundwater acres
- Municipal and industrial groundwater uses
- New groundwater consumptive uses (agricultural, municipal, industrial)
- Retirement of groundwater consumptive uses (agricultural, municipal, industrial)
- Well drilling permits approved, cancelled, or denied
- Variances for new water uses granted, cancelled, or denied
- Water transfer permits granted, cancelled, or denied
- Stream gage measurements on District maintained gages
- District regulations/management activities (designated groundwater management areas, use restriction, etc.)
- New depletions accounting report
- Streamflow accretion activities (new projects, conjunctive management projects, etc.)
- Water banking activities (if bank exists)

# 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")

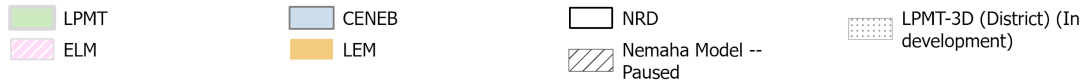
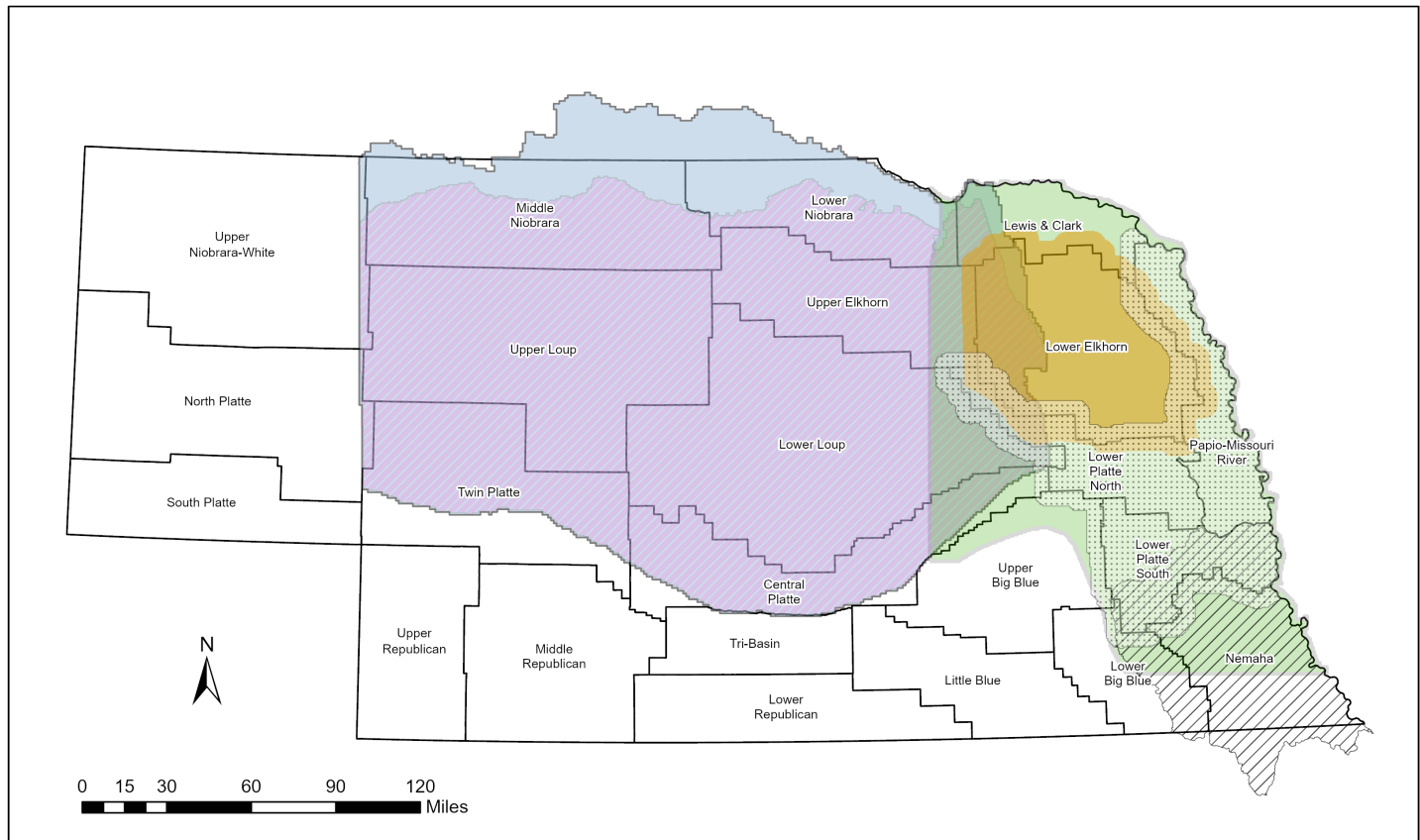
# LPNNRD

## 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

# BASIN-WIDE MODELING EFFORTS

## Lower Platte Missouri Tributaries Basin Model Coverage



Created by NeDNR | JWJ | 22 July 2024

# LOWER PLATTE 3-DISTRICT MODEL (LP3D)

- Completed constructing model inputs into sub-regional model (LP3D) (Spring 2025)
- Calibration efforts are nearly complete and model stress testing is ongoing
- Scheduled documentation and publication of completed model for late 2025
- To be used for updated HCA and basin-wide analysis

# BASIN COALITION PLAN IMPLEMENTATION

# BASIN-WIDE ACTIVITIES

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

- Managers' and Technical Team meetings
- Annual reporting (see next slides)
- Annual Reporting Database
  - Tool to report and store annual water use data
- Lower Platte Missouri Tributaries Model
  - Tool to analyze aquifer-stream interactions

# ESTIMATED STREAM DEPLETIONS

# NEW DEPLETIONS ACCOUNTING

## LOWER PLATTE RIVER BASIN 2022-2024

2022-2024 Estimated Stream Depletions and Accretions Summary														
NRD	2022				2023				2024				Net Total Depletions	
	Depletions		Accretions		Depletions		Accretions		Depletions		Accretions			
	Peak	Non-Peak	Peak	Non-Peak	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	413.2	0	243.5	0	122	0
Lower Loup	145.97	17.4	83.87	9.5	46.1	0	19.2	0	200.0	0	0	0	289	8
Lower Platte North	0	0	0	0	14	0	0	0	33.4	348.2	0	66.03	47	282
Lower Platte South	39.2	10	20	10	0	0	0	50	50.9	140.9	0	0	70	91
Papio-Missouri River	0	18	0	0	0	0	0	0	294.4	0	0	0	294	18
Upper Elkhorn	0	0	0	0	0	30.9	0	0	0	0	0	0	0	31
Upper Loup	0	0	0	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>991</b>	<b>489</b>	<b>244</b>	<b>66</b>	<b>823</b>	<b>430</b>

# DEPLETIONS PERCENTAGES

## BASIN WIDE AND LPNNRD

NRD	Total New Peak Season Depletions	Remaining 5-YR Allowable Depletion (AF)	Combined Percent of Allowable	Percent of Remaining 5-YR Allowable Depletion
Upper Loup NRD	51.3	5302.7	1.0%	97.6%
Lower Loup NRD	145.5	11768.0	1.2%	98.8%
Upper Elkhorn NRD	2.5	2924.5	0.1%	98.6%
Lower Elkhorn NRD	603.4	7484.7	7.5%	89.7%
Papio-Missouri River NRD	342.6	1410.8	19.5%	77.3%
Lower Platte South NRD	50.9	2015.6	2.5%	96.1%
Lower Platte North NRD	210.5	3360.9	5.9%	90.0%
<b>TOTALS</b>	<b>1407</b>	<b>34267</b>	<b>3.9%</b>	<b>94%</b>

# LOWER PLATTE RIVER BASIN COALITION

## 3<sup>RD</sup> INCREMENT PLANNING

- Land Use updates
- Watershed Model
- Groundwater Model
- Hydrologically Connected Areas
- INSIGHT Analysis
- BWP Updates

# ACTIONS AND GOALS

# EDUCATION & OUTREACH ACTIVITIES

## DWEE

- State Fair
- Husker Harvest Days

## LPNNRD

- Nitrogen Certification Classes
- School Presentations

## Joint Activities

- Spring Conservation Educational Event

# JOINTLY IDENTIFIED ACTIONS FOR NEXT TWO YEARS

- Cooperate on efforts to increase sources of available surface & groundwater 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)
- Participate in education and outreach events
- Update the LPNNRD to work together with the Basin-wide Plan
- Finish the LPMT-3D Model for inclusion in the 5-year BWP update

# QUESTIONS?

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# THANK YOU!

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