

LOWER PLATTE SOUTH NRD INTEGRATED MANAGEMENT PLAN 2024 ANNUAL REPORT

David Potter, Asst. General Manager

Dick Ehrman, Water Resources Coordinator

Steve Herdzina, Water Resources Compliance Specialist



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natural resources district

Tyler Martin, IWM Coordinator

Madeline Johnson, Environmental Specialist III

Brendan Auer, Environmental Specialist II



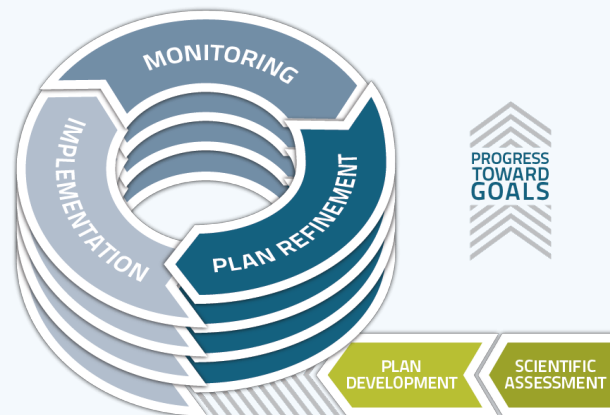
VOLUNTARY INTEGRATED MANAGEMENT PLAN

- LPSNRD and the NeDNR jointly adopted a voluntary IMP, effective May 15, 2014.
 - Consists of Goals, Objectives, and Actions.
 - Purpose of jointly managing groundwater and surface waters within LPSNRD is to sustain balance between water use and supplies long-term.
- *The IMP shall be reviewed annually by the District's Board of Directors and the Department to ensure that the plan continues to meet the needs of the District and Department and to identify Action steps for the next two years.*
 - Provide annual report on data collected
 - Report on new groundwater or surface water permits and uses
 - Review progress made toward achieving goals and objectives

WHY CONDUCT VOLUNTARY 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

Water Inventory

Water Inventory includes the inflow, precipitation, and water storage available to the District along with the water use and outflows from the District.

Goal: Ensure the District has sufficient data to enable the achievement of a water supply that is in balance with current and future water demands in the District.

Water Supply Management

Water Supply Management is the management of water supply, both in and out of the District, through human efforts.

Goal: Ensure a sustainable water supply is available in the amounts and location of the demands through management actions to meet the District's short and long term needs.

Water Use Management

Water Use Management is the management of how water is used and consumed while meeting current and future demands.

Goal: Encourage all water users to minimize water use while optimizing benefits.

REPORT REVIEW

- Covers progress made towards voluntary IMP action items for both LPSNRD and the NeDNR in the calendar year 2024.
- LPSNRD and NeDNR are currently undergoing a review and update of the IMP.

SURFACE WATER AND GROUNDWATER MONITORING

NeDNR DATA COLLECTION & MONITORING

NeDNR Monitoring

- Surface water permitting activities
- NeDNR streamgage measurements
- Surface water pump site inspections
- Surface water irrigation use

NeDNR SURFACE WATER PERMITTING

NeDNR Surface Water Permitting Actions Within the IMP Area Applications Approved

Surface Water Appropriations Approved in 2024 Within the IMP area								
Appropriation Number	Date Approved	Source	Location of Diversion or Reservoir	Sub-Basin	Use	Grant in cfs	Grant in af	Acres
Lower Platte South	A-19960	1/17/2024	Holmes Creek, Trib to	Reed Reservoir	ST	0	73	0
Lower Platte South	A-20011	10/2/2024	Middle Creek, Trib to	Piening Water Quality Basin	ST	0	67.87	0
Lower Platte South	A-20035	10/18/2024	Middle Creek	Pump	IR	1.29	270	90

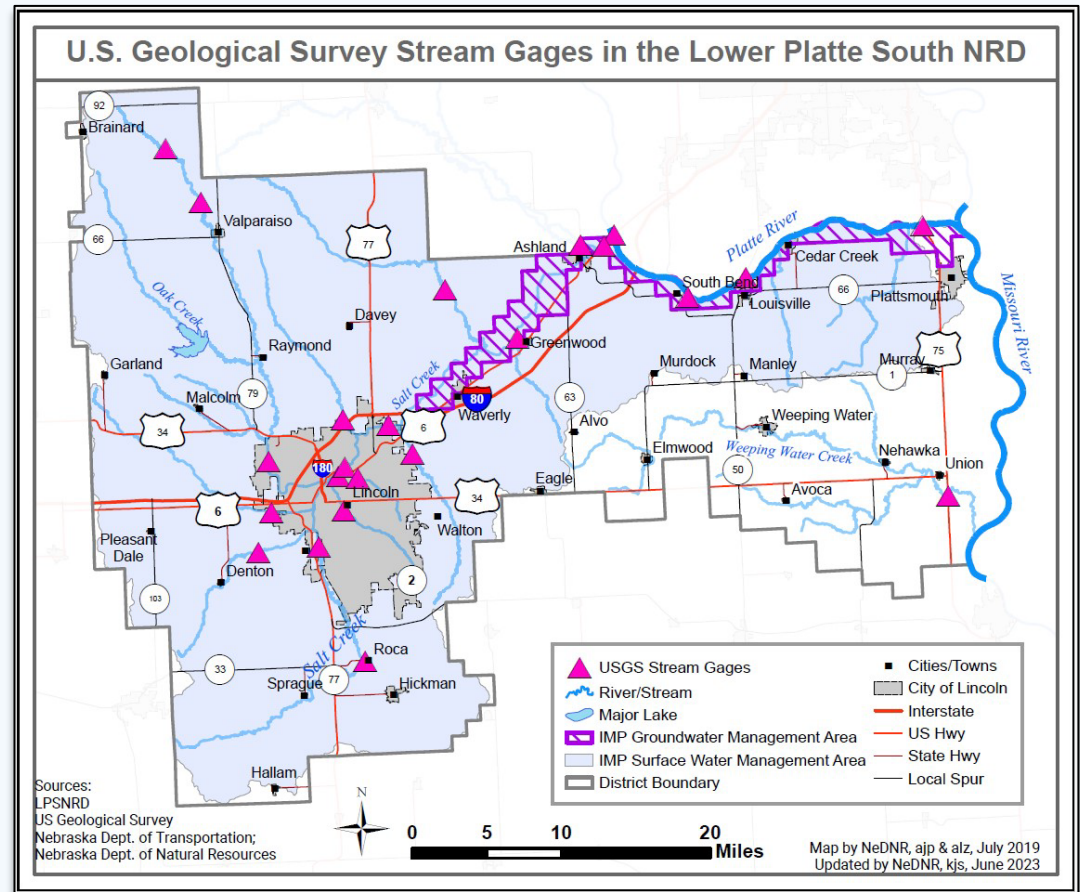
NeDNR SURFACE WATER PERMITTING

NeDNR 2024 Surface Water Permitting Actions Within the IMP Area Appropriations Cancelled or Expired

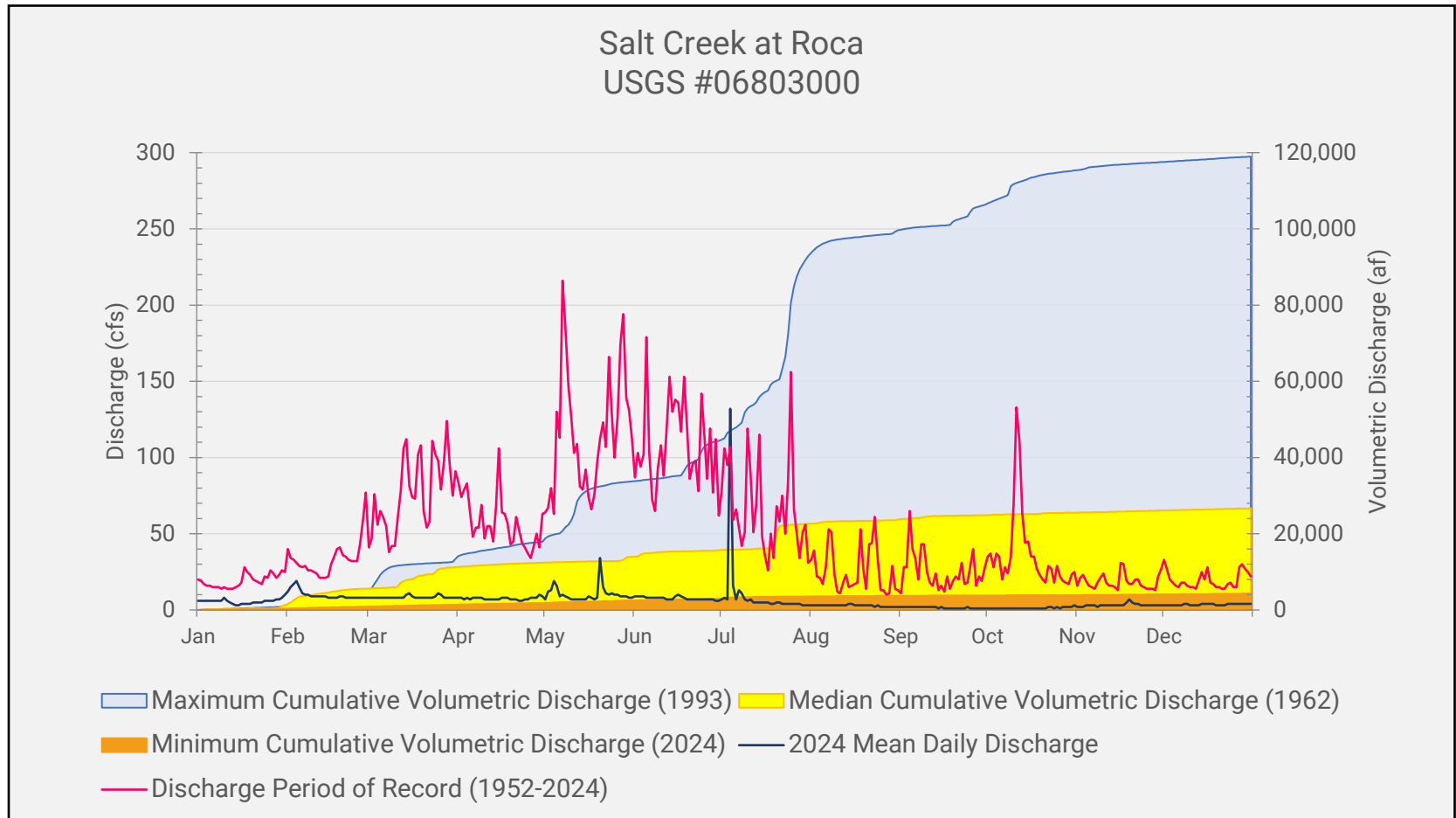
Surface Water Appropriations Expired, Cancelled-in-Part or Cancelled-in-Full in 2024 Within the IMP Area											
Appropriation Number	Cancel Date	Source	NeDNR Action	Location of Diversion or Reservoir	Use	Begin Acres	Cancelled			Estimated Date of Last Use	Basis for NeDNR Action
							Acres	Grant in cfs	Grant in af		
A-11211	3/18/2024	Oak Creek, Middle	Cancelled in Full	Pump	IR	57	57	0.81	171	Pre-2016	REL-10180
A-13666	1/5/2024	Oak Creek, North, Trib. To	Cancelled in Full	Pump	IR	27.3	27.3	0.39	81.9	Unknown	REL-10110
A-11495	4/23/2024	Oak Creek, Middle	Cancelled in Part	Pump	IR	26	176.5	0.37	78	2017	REL-10218

NeDNR SURFACE WATER MONITORING

- 21 USGS streamgages
- 1950s first installations
- 2016 last installation
- 16 receive partial LPSNRD funding

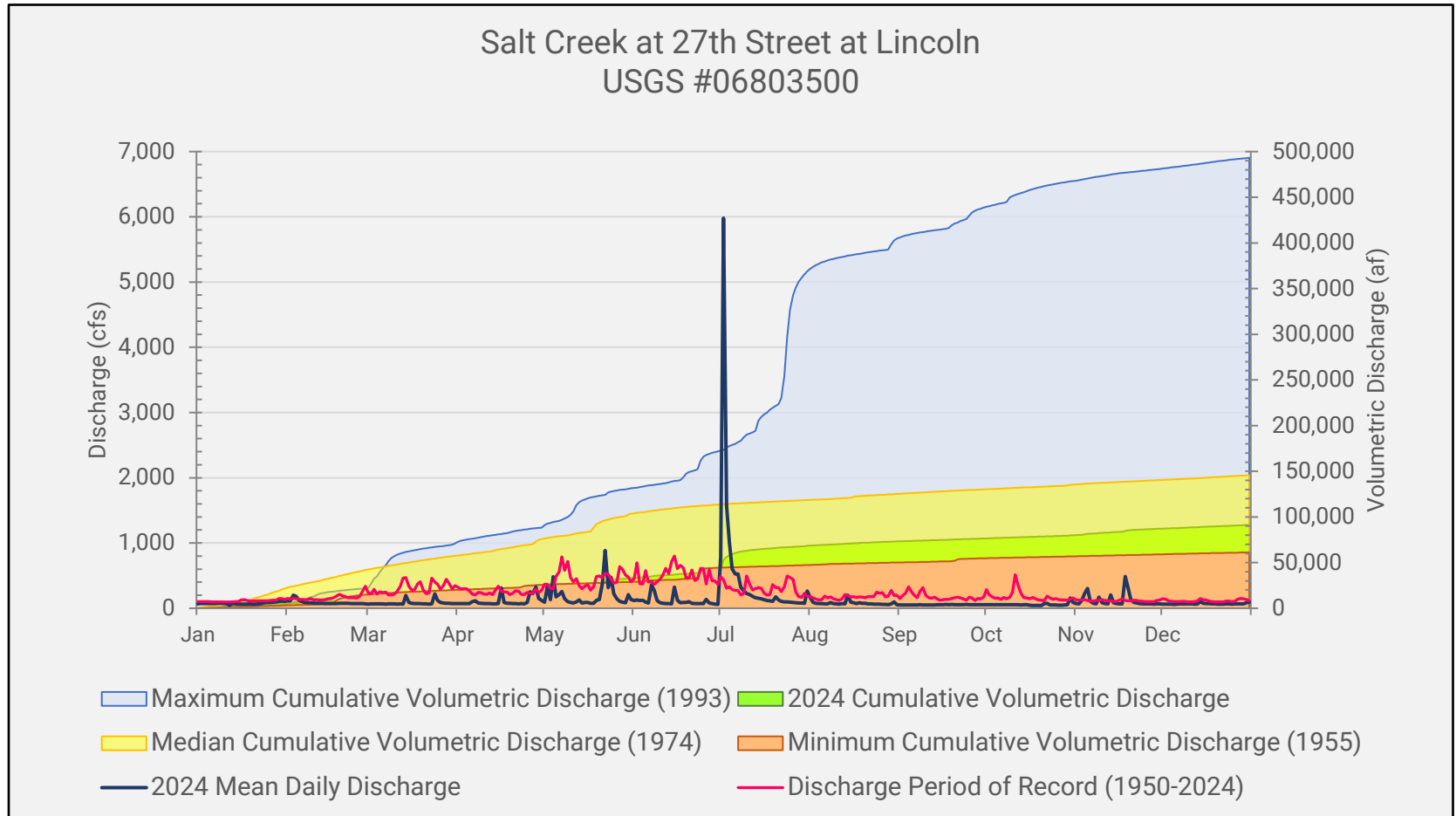


SURFACE WATER MONITORING

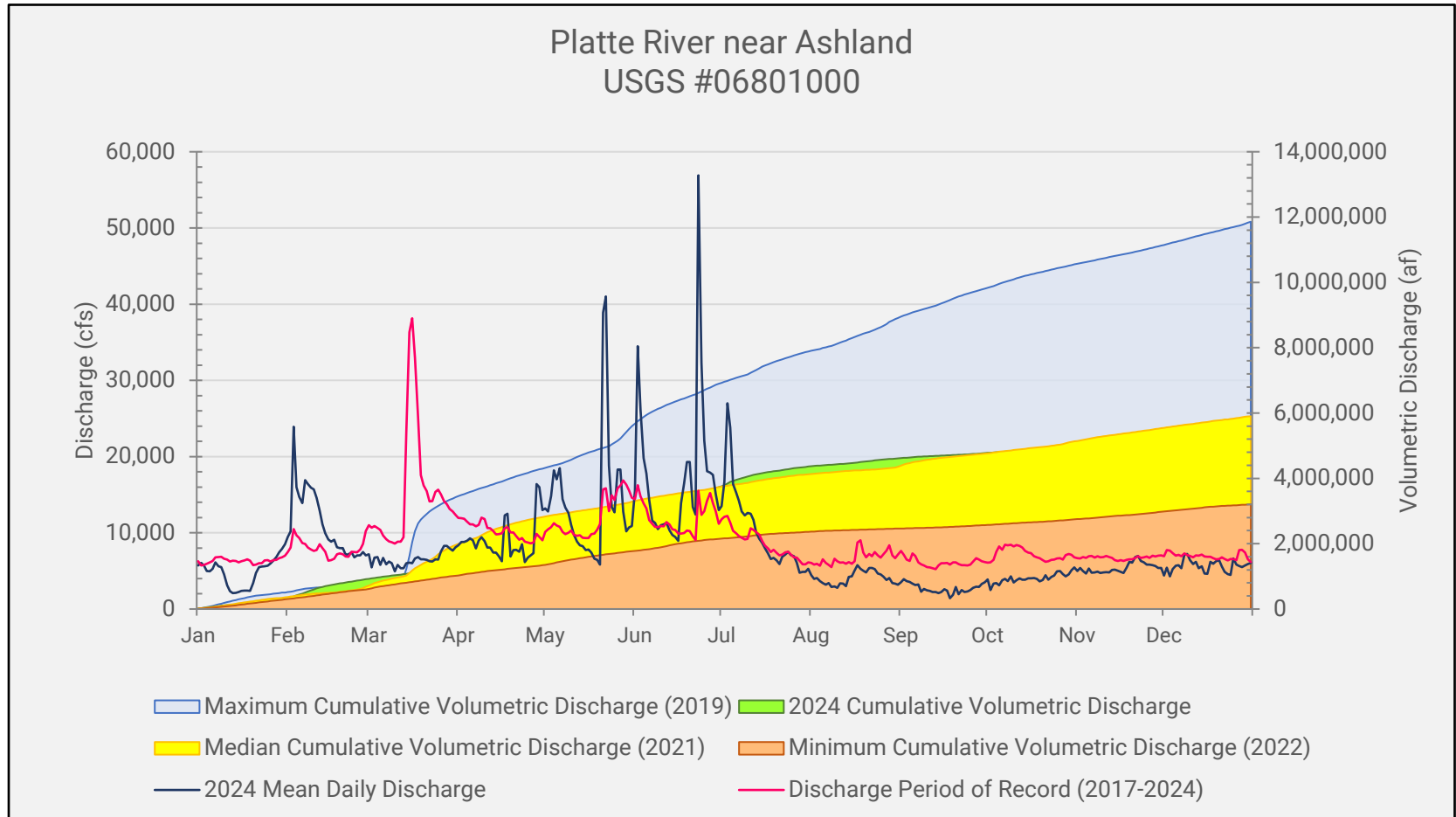


Note: Minimum Cumulative Volumetric Discharge (2024) and 2024 Cumulative Volumetric Discharge are identical, so 2024 Cumulative Volumetric Discharge is hidden.

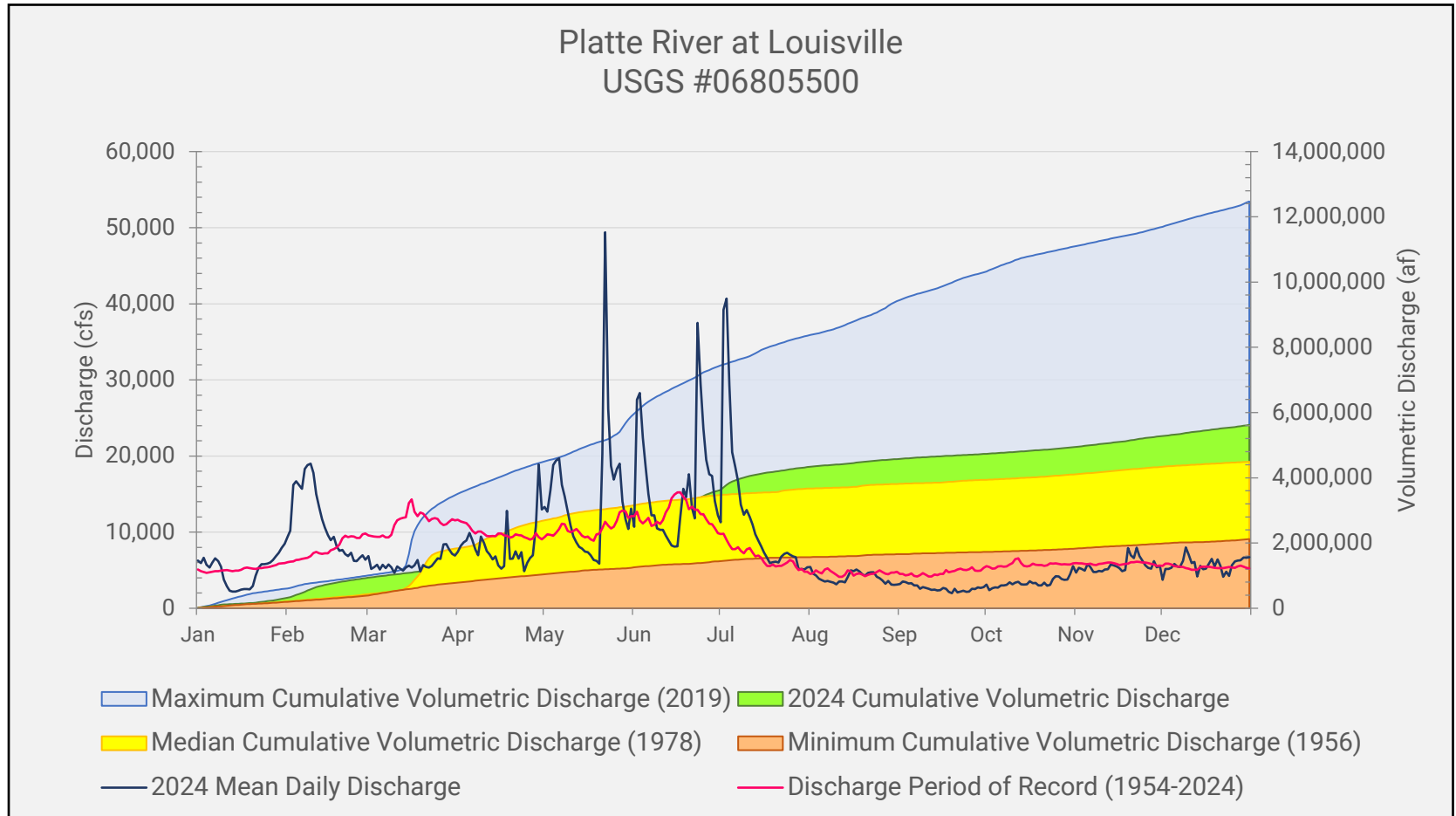
SURFACE WATER MONITORING



SURFACE WATER MONITORING



SURFACE WATER MONITORING



NeDNR SURFACE WATER MONITORING

- Surface Water Pump Site Visits:
 - NeDNR Field Office staff inspected 171 of a possible 200 irrigation permit pump-sites (85%).
 - A total of 177 observations made*
 - 35 sites had been set up for surface water irrigation

* Field staff can visit sites more than once a year

NEDNR SURFACE WATER MONITORING

- Voluntary Surface Water Use Reporting
 - 59 reports out of 200 water rights 2024 (30%)
- Reporting includes information about
 - whether permit holder irrigated,
 - reasons for not irrigating (if applicable),
 - types of crops grown,
 - number of irrigated acres, and
 - use of groundwater or surface water.

LPSNRD DATA COLLECTION & MONITORING

NRD Monitoring

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

LPSNRD GROUNDWATER PERMITTING ACTIVITY

- Well Permits and Construction in 2024
 - 14 Well permits issued
 - 11 Well completed (2 located in HCA)



LPSNRD GROUNDWATER MONITORING & DATA COLLECTION

Average Well Level Change by Groundwater Reservoir	
GW Reservoir	Spring 2023 to Spring 2024 (ft)
Crete-Princeton-Adams	-1.21
Dwight-Valparaiso	-1.81
Lower Salt Creek	-2.06
Missouri River Valley	-3.84
Platte River Valley	-0.08
Remaining Area	-1.15



LPSNRD GROUNDWATER MONITORING & DATA COLLECTION

- Hydrologically Connected Area (HCA) 360 wells
 - 42 wells over 50 gal/min. in 2024
 - 665 million gallons pumped in total
 - 30 irrigation wells account for 40% of total
 - 5 commercial wells account for 56% of total
 - 0 new irrigated acres approved in 2024
- Entire District
 - Flow meters on all wells pumping over 50 gal/min.
 - 364 wells pumping over 50 gal/min. in 2024
 - 5.12 billion gallons pumped total
 - 293 irrigation wells account for 66% of total



LPSNRD EDUCATION, OUTREACH, AND COLLABORATION

- Groundwater Management Planning review
- Best management practices Irrigation Certification Program
- Media, Social Media, Web
- Publications
- ENWRA, LPRBC, LPRC, LPRCA, USGS, NeDNR



JOINT ENDEAVORS AND ACTION PLANS

REGIONAL AND BASIN COLLABORATIONS

LPSNRD AND NEDNR

- **Lower Platte River Basin Consortium**

- Water supply resiliency, drought planning
- Ongoing drought monitoring and communication with the public
- Drought contingency plan adopted in 2019, Plan updated in 2024

- **Lower Platte River Basin Coalition**

- Coordination and consistency across the Basin
- Basin-wide Plan approved October 2017
- Second increment adopted in 2022 and extended one year through 2027
- Planning for Third Increment currently underway

NEW DEPLETIONS ACCOUNTING

LOWER PLATTE RIVER BASIN 2022-2024

2022 - 2024 Estimated Stream Depletions and Accretions Summary														
NRD	2022				2023				2024				Net Total Depletions[1]	
	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	0.0	10.0	0.0	0.0	0.0	38.0	0.0	413.2	0.0	243.5	0.0	122	0
Lower Loup	146.0	17.4	83.9	9.5	46.1	0.0	19.2	0.0	200.0	0.0	0.0	0.0	289	8
Lower Platte North	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	33.4	348.2	0.0	66.03	47	282
Lower Platte South	39.2	10.0	20.0	10.0	0.0	0.0	0.0	50.0	50.9	140.9	0.0	0.0	70	91
Papio-Missouri River	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	294.4	0.0	0.0	0.0	294	18
Upper Elkhorn	0.0	0.0	0.0	0.0	0.0	30.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31
Upper Loup	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Basin Total	185	45	114	20	60	31	57	50	991	489	244	66	823	430

CU = Consumptive Use AF = Acre Feet

JOINTLY IDENTIFIED ACTIONS FOR THE NEXT TWO YEARS



LPSNRD ACTIONS

- Continue to monitor groundwater level changes through its network of groundwater monitoring wells.
- Continue to meter and require annual pumping reports for groundwater wells that have capacity to pump over 50 gpm, as well as public supply wells, and assimilate the data into a comprehensive dataset.
- Continue to collect information on municipal, rural water, and non-municipal industrial water use, land use and population changes, and changes in climate.
- Develop recommendations for the development and management of geographic areas with limited aquifers.
- Conduct discussions with municipalities and rural water districts on coordinating services with regional systems and on water shortage action plans.
- Update Groundwater Management Plan

NeDNR ACTIONS

- Continue surface water monitoring activities including tracking surface water permit changes, pump site inspections and the voluntary surface water use reporting program.
- Continue technical analyses and development of tools (INSIGHT) for water management, expanding the network to eastern Nebraska as data become available.
- Continue development of the Lower Platte Missouri Tributaries models and convey progress and outcomes to LPSNRD.



JOINT LPSNRD AND NeDNR ACTIONS

- Continue to participate in basin-wide or regional groups such as ENWRA, the Lower Platte River Consortium, Lower Platte River Basin Coalition, and the Lower Platte River Corridor Alliance.
- NeDNR and LPSNRD have exchanged letters agreeing to amend the IMP to achieve consistency with the Lower Platte Basin Water Management Plan, specifically with stream depletion-based limits on new groundwater and surface water uses.
- Continue respective public outreach activities and seek additional opportunities for joint public outreach events and publications.
- Continue to evaluate the need for modifications to the LPSNRD streamgauge network.
- Continue to conduct quarterly coordination meetings with LPSNRD and NeDNR staff to discuss IMP and related action items. Include the LPSNRD Water Resources Subcommittee members on coordination meetings twice per year.
- Development, testing, and further incorporation of AEM data for the LPMT-3D model.
- Ongoing Annual reporting and tracking requirements for IMP and Basin Plan.
- IMP language updates to better align with Basin Plan.



QUESTIONS?

THANK YOU.



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