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LOWER PLATTE SOUTH
natural resources district

2023 Report
Lower Platte River Basin Coalition

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LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT 2023 REPORT AS REQUIRED BY THE DISTRICT'S VOLUNTARY INTEGRATED MANAGEMENT PLAN

I. INTRODUCTION

In 2009, the Lower Platte South Natural Resources District (LPSNRD or District) adopted rules and regulations for the management of ground and surface water in what is known as the hydrologically connected area (HCA). The HCA was delineated by the Nebraska Department of Natural Resources (NDNR) based upon the likelihood of hydrologic connection between surface water and shallow ground water. For LPSNRD, this area consists of all or parts of about 70 sections along both sides of Salt Creek roughly between Waverly and Ashland, and then along the south side of the Platte River from Ashland to Plattsmouth. The location of the HCA can be seen in all of the figures attached to this report.

As a natural extension of the above activities, the District developed its voluntary Integrated Management Plan (IMP) in conjunction with NDNR. Following approval by both LPSNRD and NDNR, the IMP became effective on May 15, 2014. For more detail regarding the development of the IMP, see LPSNRD-NDNR, 2014.

As part of the effort toward a more comprehensive management strategy, LPSNRD joined six other NRDs and NDNR to form the Lower Platte River Basin Coalition (LPRBC) to jointly develop a water management plan for the entire Lower Platte River basin. As of early 2018, all seven participating NRD Boards and NDNR had approved the Interlocal Agreement that continues the Coalition and adopts the first five-year plan. For more information on the LPRBC, refer to its website at <https://lprbc.nebraska.gov/>.

II. ACTIVITIES TO BE REPORTED

The activities reported in this document cover the period from January 1, 2023 through December 31, 2023.

A. CERTIFICATION OF GROUND WATER USES AND CHANGES TO THOSE CERTIFICATIONS

LPSNRD began certification of irrigated acres within its jurisdiction in 2009 and required that all such irrigated acres be certified with the District by January 31, 2011 in its updated Ground Water Rules and Regulations. Going forward, current regulations require that any new irrigated acres be certified with the District prior to being irrigated.

For the HCA, the process of certifying irrigated acres documented “historically irrigated acres,” which were defined as acres irrigated with ground water prior to December 16, 2008; these acres within the HCA were required to be certified by March 31, 2010. In its initial documentation of historically irrigated acres, the District issued 34 separate certifications from 27 landowners in the HCA for a total of 2,964.48 acres. State law current at the time allowed for an annual

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expansion in the HCA of 20% of the documented historically irrigated acres, meaning that LPSNRD could allow up to 592.9 acres of newly irrigated land in the HCA each year. District regulations have maintained that annual limit of expansion since that time, but LPSNRD never received applications for expansion which have approached that annual limit. Since the initiation of the LPRBC, LPSNRD has managed expansions and additional uses under the agreed upon formula for the cooperating NRDs. Currently, the LPSNRD can approve allowable expansion of irrigated acres in accordance with the allowable new depletions in each five-year increment as agreed upon by the Lower Platte River Basin Water Management Plan Coalition. At the beginning of the second five-year increment in 2022, LPSNRD had a total allowable new depletion amount of 2,098 acre-feet.

For the 2023 reporting period, there was one reduction of 5.75 certified acres in the HCA. As a result, as of December 31, 2023, LPSNRD had a total of 3,279.73 certified irrigated acres in the entire HCA; the locations of those certified acres are shown in Figure 1. In 2023, the LPSNRD did not issue any new well permits in the HCA.

The following table shows estimated accretions for the retirement of acres. The estimates for irrigation use are approximated using the agreed-upon methodology of area in acres multiplied by the stream depletion factor (SDF) multiplied by the normal irrigation requirement in feet (NIR), all multiplied by 0.30 for peak depletion during June, July, and August:

$$\text{Peak Accretion (acre-feet)} = A \times \text{SDF} \times \text{NIR} \times 0.3$$

County	Legal	Use	Acres	SDF	NIR, Feet	Peak Accretion, Acre-Feet
Saunders	T13N R10E S31	Decertified	5.75	.99	0.55	0.939
TOTALS			5.75			0.939

In addition to the above amounts of groundwater depletion, the NeDNR has estimated net stream peak depletions in LPSNRD at 29.2 acre-feet for 2022.

At the beginning of the second five-year increment, LPSNRD had a total allowable new depletion amount of 2,098 acre-feet. In 2022, there was a reduction of 32.474 acre-feet resulting in a balance of 2,065.526 acre-feet of allowable depletion for the second five-year increment.

For 2023, (the second year of the second five-year increment), LPSNRD’s remaining allowable depletion is calculated as follows:

2 nd Five-Year Increment Remaining Allowable Depletion, Acre-Feet:	2,065.526
Estimated Peak Groundwater Accretion for 2023, Acre-Feet	+0.939
Estimated Peak Surface Water Depletion for 2022, Acre-Feet:	<u>-29.200</u>
Remaining Allowable Depletion for 2 nd Five-Year Increment, Acre-Feet:	<u>2,065.526</u>

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B. APPROVED TRANSFERS

There were no approved transfers in the HCA for this reporting period.

C. FLOW METER DATA

Beginning in 2011, the District included in its Ground Water Rules and Regulations the requirements that all wells pumping more than 50 gallons per minute (gpm) be fitted with a flow meter capable of totalizing the volume of water pumped. Owners of such wells are required to report their water usage on an annual basis by December 31 of each year.

Figure 2 shows the locations of wells within the HCA and their reported usage, broken up by well type (irrigation, commercial, aquaculture and other (the “other” classification includes any other recognized well category such as livestock, wetland restoration, etc.)). Note that irrigation wells are most numerous, but that the total usage of commercial wells is generally the largest volume for a given year.

D. WELL CONSTRUCTION PERMITS

Like all other NRDs, LPSNRD permits wells which pump more than 50 gpm in its jurisdiction. For the 2023 reporting period, there were no new permits completed within the HCA.

E. OTHER PERMITS

There were no other permits issued in the HCA for this reporting period.

F. MUNICIPAL INFORMATION

LPSNRD HCA Municipal Usage Information		
System Name	Population Served	2023 Usage/Gallons
Ashland, City of	3,086	190,022,000
Cass County Rural Water District 1	3,263	211,975,000
Cass County SID 5 – Buccaneer Bay	1,417	71,669,000
Greenwood, Village of	568	22,389,700
Lincoln, City of	292,000	3,632,860,530*
Louisville, City of	1,301	115,809,354
Metropolitan Utilities District	600,000	6,088,050,000*
Middle Island Lake Association	92	5,087,000
Omaha Fish and Wildlife Club	850	2,502,419
Raven’s Nest	70	7,428,627
Waverly, City of	4,279	220,527,805

*- Pumping usage information derived only from the wells located within the LPSNRD geographic boundary.

G. VARIANCES ISSUED

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There were no variances issued in the HCA for this reporting period.

H. RETIREMENTS OF IRRIGATED ACRES OR OTHER WATER USES

There was one retirement of 5.75 acres in the HCA in 2023. See Section A for more information.

I. WATER BANKING TRANSACTIONS

No water banking transactions have occurred in the HCA.

J. OFFSETS PROVIDED FOR DEPLETIONS RESULTING FROM INCREASED CONSUMPTIVE USES

LPSNRD has no data indicating any increased consumptive uses in the HCA.

K. REFERENCES

Lower Platte River Basin Coalition. 2017. Basin Water Management Plan.

LPRBC/HDR/Flatwater Group/JEO Consulting. 57 p. plus attachments.

Lower Platte River Basin Coalition. 2022. Basin Water Management Plan—Second Increment (2022-2026) of Plan Implementation. 8 p. plus attachments.

Lower Platte South Natural Resources District. 2021. 2020 Report as Required by the District's Voluntary Integrated Management Plan. 7 p.

Lower Platte South Natural Resources District & Nebraska Department of Natural Resources. 2014. Integrated Management Plan. 37 p.

Respectfully submitted:

Mike Sousek, General Manager

Date

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Completed Irrigation Certifications in Hydrologically Connected Area - Lower Platte South Natural Resources District
 HCA Total Certified Acres (2023): 3,279.73 Ac

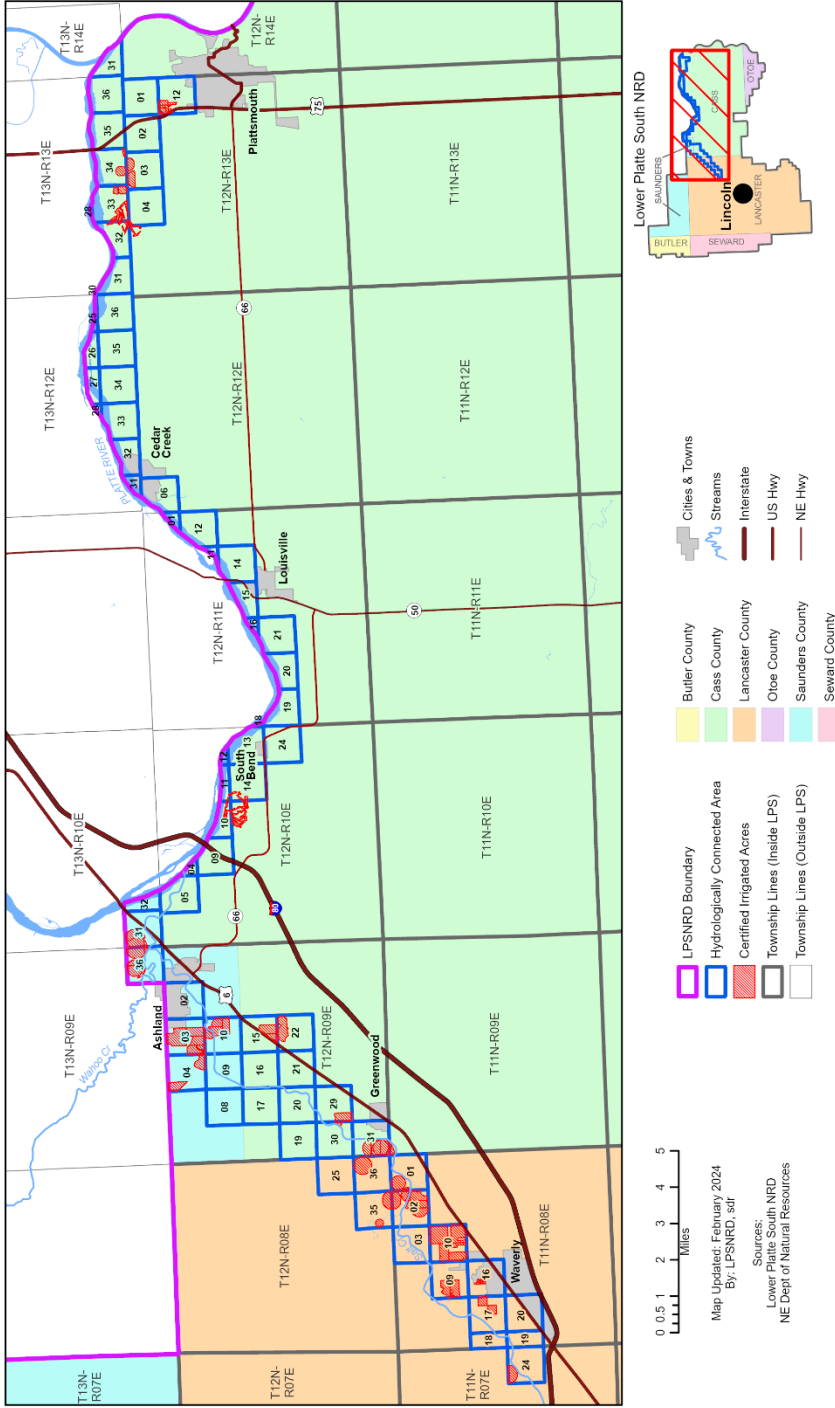


Figure 1. All certified irrigated acres within the HCA as of December 31, 2023

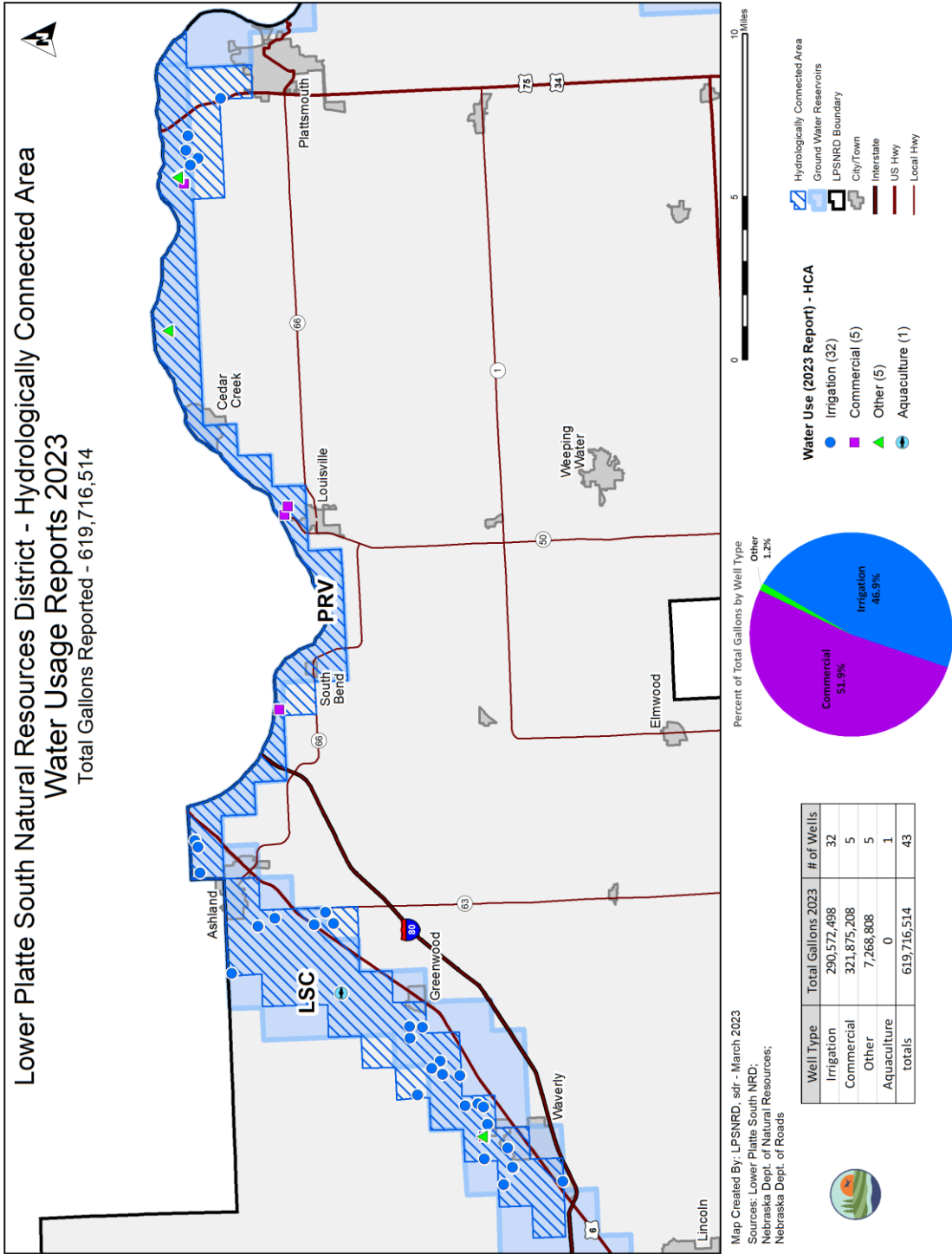


Figure 2. 2023 Water Usage Reports