2024 Upper Platte River Basin-Wide IMP Report DRAFT Covering 2023 Activities

Annual Report of the Department of Natural Resources

To Meet the Requirements of the North Platte, South Platte, Twin Platte, Central Platte, and Tri-Basin Natural Resources Districts' Upper Platte River Basin Integrated Management Plans for the 2024 Upper Platte River Basin-Wide Meeting

Fourth report for the second 10-year increment of the IMPs and Upper Platte River Basin-Wide Plan, adopted in September 2019

> Nebraska Department of Natural Resources July 17, 2024

DRAFT ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES TO MEET THE REQUIREMENTS OF THE NORTH PLATTE, SOUTH PLATTE, TWIN PLATTE, CENTRAL PLATTE, AND TRI-BASIN NATURAL RESOURCES DISTRICTS' PLATTE BASIN INTEGRATED MANAGEMENT PLANS ON 2023 ACTIVITIES

FOR THE 2024 UPPER PLATTE RIVER BASIN-WIDE MEETING

I. INTRODUCTION

This report, presented at the annual basin-wide meeting on August 1, 2024, is intended to satisfy the tracking, reporting, and evaluation requirements of the Nebraska Department of Natural Resources (Department) as described in the Monitoring and Studies section of the North Platte, South Platte, Central Platte, Twin Platte, and Tri-Basin Natural Resources Districts' (Upper Platte Basin NRDs) integrated management plans (IMPs). The tracking, reporting, and evaluation processes are described in more detail in the Monitoring and Studies section of the IMPs. This is the fourth report to be filed following adoption of the second increment IMPs in September 2019 and contains information on activities from January 1, 2023, to December 31, 2023.

Each of the five Upper Platte Basin IMPs require that the Department annually track and report on the following items: 1) any surface water permits issued; 2) any dam safety permits issued; 3) any groundwater permits issued; and 4) the associated offsets/mitigations for any new permits issued. These items are included in this report. The IMPs also discuss the inclusion of information on the location, amount, and timing of the depletions caused by each permitted new or expanded water use as well as the same information for the associated offset/mitigation. To facilitate the exchange of information between the Department and the NRDs, the Department reports on the cancellation of surface water permits each year.

In addition to reporting on annual permitting activities, the Department is also required to report the following items every five years: 1) National Agricultural Statistics Service (NASS) livestock data; 2) U.S. Census Bureau population data; 3) inventory of sandpits; 4) inventory of reservoirs of less than 15 acre-feet; 5) any retirements of irrigated acres or other activities in the NRDs by the Department for the purpose of returning to a fully appropriated condition; and 6) offsets/mitigations for depletions resulting from increased consumptive use related to the items listed. These items, as well as the items reported annually, were analyzed as part of the 2019 and 2023 Robust Reviews, which were completed as part of the IMP requirements. The Robust Review analysis is described in more detail in the IMPs. The full 2019 Robust Review report is available on the Department's website, and the 2023 Robust Review report will be available in 2024.

The items tracked and reported here will be used by the Upper Platte Basin NRDs and the Department to measure the success of the controls, incentive measures, and other action items in meeting the goals and objectives of the IMPs. Two evaluation processes for measuring success are described in the IMPs. The first is

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a yearly evaluation of the data contained in the annual report that will include a forecast of the balance of depletions and accretions for permitted new activities using analytical methods. The second evaluation process involves updating and running groundwater models with any of the relevant data from the annual exchange along with the data that is to be collected and considered every five years (Robust Review). In addition to these evaluation processes, the information that is tracked and reported will also be used by the State to help meet requirements of the Platte River Recovery Implementation Program (PRRIP).

II. ACTIVITIES TO BE REPORTED ANNUALLY (JANUARY 1, 2023, THROUGH DECEMBER 31, 2023)

A. Summary

When a surface water or groundwater permit is reviewed, the Department assesses the potential for the permitted action to increase, decrease, or have no effect on consumptive water use. Depending on the circumstances, the applicant may be required to take action that would offset/mitigate the effect of any increase in consumptive use. Described in each section below are the permits issued by the Department and the associated review of potential changes in consumptive use.

The Department issued ten (10) new surface water permits in 2023. Copies of the applications and orders for each permit are available in Appendix 1. More detailed information on each permit is available from the Department upon request.

B. Surface Water Applications Approved – Table 1, Page 6-7

The Department approved ten (10) new surface water applications in 2023. Eight (8) were temporary permits for groundwater recharge, and two (2) permits were for temporary construction. Temporary recharge permits only allow the diversion of streamflows in excess of already permitted uses and target flows when they are available during non-irrigation periods in the spring and fall and are intended to supply baseflow accretions back to the river. Temporary construction permits are for less than ten acre-feet over one year. All temporary permits expire one year from the issued date. The conditions under which each permit can operate are specified in the order for each permit (see Appendix 1).

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C. Dam Safety Applications Approved – Table 2, Page 8

There were no Dam Safety applications approved by the Department in 2023.

D. Groundwater Permits Approved – Table 3, Page 8

There were no Groundwater Permits approved by the Department in 2023.

E. Offsets/Mitigations for Issued Permits

No offsets were necessary for the eight (8) surface water applications approved for the purpose of groundwater recharge because the permits contained limitations that would ensure that these diversions would not impact state protected flows or species target flows.

No offsets were necessary for the two (2) temporary construction permits approved in 2023 because they were not for new consumptive uses. Water used for these permits was sourced from previously permitted appropriations. Variances for these permits were granted under *Title 457 Neb. Admin. Code* Chapter 23, § 001.06, as the uses are temporary for public construction and the total volumes requested are less than 10 acre-feet. Permit A-19925 allows a temporary use of less than 10 acre-feet pumped from the Tri-County Supply Canal for the purposes of compacting soil at a nearby road construction site. Permit A-19225 does not increase the existing diversion into Tri-County Canal under appropriation A-2355, but repurposes water already diverted and consumed under A-2355 for a temporary use. Permit A-19948 is not a new consumptive use because it allows the repurposing of impounded water from Elwood Reservoir (storage under permit A-2374R, approved 1/9/1974) to be used in the Elwood Dam Seepage Mitigation Project.

F. Additional Reporting of Cancelled Permits – Table 4, Pages 9-10

To facilitate the exchange of information between the Department and the NRDs, the Department is also reporting on the cancellation of eleven (11) surface water permits. Eight (8) of the cancelled permits were temporary groundwater recharge permits issued for one year, one (1) permit was a temporary construction permit issued for one year, and two (2) permits were irrigation appropriations cancelled after a preliminary determination of

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nonuse. Copies of the applications and orders for the cancelled surface water permits can be found in Appendix 1 of this report.

G. Net Effect due to New or Expanded Permitted Activity and Offsets/Mitigations

Projects for the purpose of providing accretions to the river to offset other depletions were analyzed as part of the 2023 Robust Review Report, which will be released in late 2024. Based on the analysis conducted for the Robust Review of the projects in place through 2020, the total of Nebraska's offset/mitigation efforts and depletions from new uses within the basin result in a net increase to streamflow.

A guidance document for the annual calculations, Basin-wide Technical Committee Guidance Document – Procedures for Annual Accounting Review and Robust Review to Assist Integrated Management Planning and Facilitate Reporting to the Platte River Recovery and Implementation Program, can be found on the Department's website at

https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/water-planning/upper-platte/other/basin-wide-technical-committee-guidance20120814.pdf.

III. ACTIVITIES TO BE REPORTED ON A FIVE (5) YEAR BASIS

For the five (5) year tracking requirements, the Department reports on changes in livestock and human populations and may conduct an inventory of sandpits and reservoirs less than 15 acre-feet. The Department also reports on retirements of irrigated acres and other activities conducted for the purpose of returning to a fully appropriated condition and any offsets/mitigations necessary for depletions resulting from increased consumptive use by the items reported in this section.

Human and livestock population analyses were updated as part of the 2023 Robust Review and can be found in the Robust Review report that is planned for release in late 2024. The inventory of sandpits and reservoirs less than 15 acre-feet for 2005 to 2010 was reported in the 2019 Robust Review report.

All reports prior to 2016 are available from the Department upon request. More recent reports can be found at https://dnr.nebraska.gov/water-planning/upper-platte-basin-wide-meetings-and-annual-reports.

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IV. OTHER TECHNICAL ANALYSES

The Department and NRDs used the updated Western Water Use Management Model (WWUMM) and COHYST Model to complete the 2023 Robust Review analyses as required by Neb. Rev. Stat. § 46-755(5)(d), the Upper Platte Basin-Wide Plan, and the IMPs. In 2024, the Department and NRDs presented the results of the 2023 Robust Review to each NRD's board and consulted with them as to whether the results necessitate IMP updates in 2024.

The reports, technical analyses, and modeling files that guided development efforts for the second increment basin-wide plan and IMPs are available at http://upjointplanning.nebraska.gov/ for the 2019 Robust Review. The update on technical analyses and modeling files from the second increment from the 2023 will be reported in the Robust Review report released in late 2024.

IV. SUMMARY

During 2023, the Department issued ten (10) new surface water permits. These permitted activities resulted in no new net depletions to the basin.

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Table 1: Surface Water Applications Approved by the Department during Reporting Period January 1, 2023, to December 31, 2023

Appropriation Number	Approval Date	S-T-R W	Source or Canal	Use	Grant in CFS	Grant in AF	Surface Water or Groundwater Mitigation	Associated Variance
A-19899	3/13/2023	08-13-29 W	Tri-County Canal	Temporary Recharge	950		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9862
A-19900	3/13/2023	18-10-23 W	Dawson County Canal	Temporary Recharge	100		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9853
A-19901	3/13/2023	19-12-26 W	Gothenburg Canal	Temporary Recharge	100		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9854
A-19902	3/13/2023	18-14-33 W	Paxton-Hershey Canal	Temporary Recharge	102.78		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9855
A-19903	3/13/2023	18-14-36 W	Keith-Lincoln Canal	Temporary Recharge	80.56		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9856

Appropriation Number	Approval Date	S-T-R W	Source or Canal	Use	Grant in CFS	Grant in AF	Surface Water or Groundwater Mitigation	Associated Variance
A-19904	3/13/2023	13-14-34 W	North Platte Canal	Temporary Recharge	201		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9857
A-19905	3/13/2023	12-14-33 W	Suburban Canal	Temporary Recharge	77.47		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9858
A-19906	3/13/2023	14-12-43 W	Western Canal	Temporary Recharge	176.26		Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.03	VAR-9859
A-19925	6/8/2023	17-13-29 W	Tri-County Canal	Temporary Construction		10	Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.06	VAR-10008
A-19948	9/14/2023	30-08-22 W	Elwood Reservoir, A-2374R	Temporary Construction		9.99	Variance granted pursuant to 457 Neb. Admin. Code Ch. 23 § 001.06	VAR-10071

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Table 2: Dam Safety Permits Approved by the Department during Reporting Period January 1, 2023, to December 31, 2023

There were no Dam Safety Permits approved by the Department during 2023.

Table 3: Groundwater Permits issued by the Department during Reporting Period January 1, 2023, to December 31, 2023

There were no Groundwater Permits issued by the Department during 2023.

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Table 4: Surface Water Permits Cancelled by the Department during Reporting Period January 1, 2023, to December 31, 2023

Appropriation Number	Modification Number	Cancellation Date	S-T-R W	Canal or Source	Use	Cancellation in CFS	Cancellation in AF	Begin Acres	Cancelled Acres
A-9810	PDNU-9963	5/22/2023	27-16-05 W	Prairie Creek	Irrigation	1.16	244.5	81.5	81.5
A-17245	PDNU-9964	5/22/2023	27-16-05 W	Prairie Creek	Irrigation	1.07	225.3	75.1	75.1
A-19801	VAR-9469	1/14/2023	30-15-38 W	Kingsley Reservoir	Temporary Manufacturing		2		
A-19807	VAR-9543	3/10/2023	19-12-26 W	Gothenburg Canal	Temporary Recharge	100			
A-19808	VAR-9544	3/10/2023	18-10-23 W	Dawson County Canal	Temporary Recharge	100			

Appropriation Number	Modification Number	Cancellation Date	S-T-R W	Canal or Source	Use	Cancellation in CFS	Cancellation in AF	Begin Acres	Cancelled Acres
A-19813	VAR-9561	3/14/2023	18-14-36 W	Keith-Lincoln Canal	Temporary Recharge	80.56			
A-19814	VAR-9569	3/14/2023	13-14-34 W	North Platte Canal	Temporary Recharge	201			
A-19815	VAR-9563	3/14/2023	14-12-43 W	Western Canal	Temporary Recharge	176.26			
A-19816	VAR-9565	3/14/2023	12-14-33 W	Suburban Canal	Temporary Recharge	77.47			
A-19817	VAR-9567	3/14/2023	18-14-33 W	Paxton- Hershey Canal	Temporary Recharge	102.78			
A-19831	VAR-9610	4/25/2023	08-13-29 W	Tri-County Canal	Temporary Recharge	950			

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Definitions

Depending on the types of permits issued or cancelled in a given year, not all definitions may be relevant to the current year's report.

Accretion	Addition to streamflow that results from an offset/mitigation action or project.				
Acre-Feet (AF)	A unit of volume, commonly used to measure quantities of water used or stored equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.				
Annotation	Modification numbers or appropriation numbers also associated with the appropriation.				
Application/Appropriation Number	Appropriations having docket numbers (D-) refer to claims covering rights which existed prior to April 4, 1895, or those rights that existed on the Missouri River that were covered by the law passed in 1980. Those appropriations having application numbers (A-) were filed after April 4, 1895.				
Begin Acres	The amount of acres included in an original appropriation, prior to any acres being cancelled.				
Cancelled Acres	The amount of acres in an appropriation that have been cancelled.				
CFS/Cubic Feet per Second	The USGS defines cubic foot per second (cfs) as "the flow rate or discharge equal to one cubic foot of water per second or about 7.5 gallons per second."				
Depletion	Reduction to streamflow that results from a new use of either groundwater or surface water.				
Flood Control	This refers to water withdrawn from the surface water source for the purpose of protecting health and well-being of society.				
GPD/Gallons per Day	This refers to the number of gallons pumped per day.				
Grant in AF	This refers to the approved amount of acre-feet of water legally allowed to be pumped from a surface water source, as long as all other conditions are met.				

Grant in CFS	This refers to the approved amount of cubic feet per second of water legally allowed to be pumped from a surface water source, as long as all other conditions are met.
Instream Use	This refers to water that is appropriated for use within the stream and is not withdrawn from a surface water source.
Offset	A reduction in water use that corresponds with an increased use of water. An offset may be used as a management strategy to balance uses and supplies. The offset will have a corresponding amount, time, and location. Also referred to as mitigation.
Order Date	This is the date the Department acted upon an application for a permit to appropriate water or a modification of an existing appropriation.
Permit Number	This refers to the number of a groundwater permit, assigned by the Department. The first letters in the permit number denotes type of permit.
Plan Number	This is a unique identifier assigned by the Dam Safety Division for the required plans of dams filed in the Department.
Project Name	This name is provided by the applicant.
Relinquishment (REL)	The voluntary yielding of a surface water appropriation by the owner. By relinquishing a surface water appropriation, the owner surrenders all claims to the right to divert water and apply it to the property in accordance with the appropriation. Relinquishments may be for part or all of an appropriation. A form must be filed with the Department for any relinquishments.
Section/Township/Range	This is the legal description of where a dam, well, or water appropriation is located.
Use	This is the legally accepted and beneficial use of the water impounded by a dam, well, or water appropriation.

Variance (VAR)	An applicant may petition the Department to file an application for a new surface water appropriation within a moratorium or stay area. This petition, also known as a "variance," if granted, would allow the applicant to file the application, and does not bind the Department to approve any application to which it relates. The variance petition must include sufficient information to indicate the proposed project is for a non-consumptive use, the applicant has a plan to offset any consumptive use, there may be unappropriated flows, the use existed prior to the moratorium, the project address a public safety issue, or the project is a temporary use less than ten (10) acre-feet for public construction.
Water Division	The State of Nebraska is divided in two water divisions by statute, denoted Water Division No. 1, and Water Division No. 2, respectively. Water Division No. 1 consists of all the lands of the state drained by the Platte Rivers and their tributaries lying west of the mouth of the Loup River; and also all other lands lying south of the Platte and South Platte rivers that may be watered from other superficial or subterranean streams not tributary to the Platte River. Water Division No. 2 consists of all lands that may be watered from the Loup, White, Niobrara, and Elkhorn rivers, and Hat Creek and their tributaries, and those lands drained by the Platte River and its tributaries lying east of the mouth of the Loup River. For convenience in the administration of the surface water laws and the distribution of water, the two water divisions have been subdivided into 12 water divisions, denoted:
	1A Platte River basin, 1B Republican River basin, 1C Little Blue River basin, 1D Big Blue River basin, 1E Lodgepole Creek basin, 1F Nemaha River basin and Lower Missouri River and tributary basins, 2A Loup River basin, 2B Elkhorn River and Salt Creek basins, 2C Niobrara River basin, 2D White River and White Clay Creek basins, 2E Hat Creek basin, 2F Upper Missouri River and Tributary basins.

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Once finalized, the completed document and appendix are available from the Department website: https://dnr.nebraska.gov/water-planning/upper-platte-basin-wide-meetings-and-annual-reports or may be requested in paper or electronic format by contacting Ryan Kelly at (402) 471-1080 at Ryan.Kelly@nebraska.gov.

Listing of Appendices and Documents:

Annual Report of the Department of the Natural Resources to Meet the Requirements of the North Platte, South Platte, Twin Platte, Central Platte, and Tri-Basin Natural Resources Districts' Integrated Management Plans for the 2024 Upper Platte River Basin-Wide Meeting.

Appendix 1

- Applications and Orders for Department issued surface water permits.
- Applications and Orders for Department issued dam safety permits.
- Applications and Orders for Department cancelled surface water permits.
- Notices and responses from the Department regarding groundwater transfer notices received.