



2014 Platte Basin-Wide IMP Report

**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
for the 2014 Basin-Wide Meeting**

Nebraska Department of Natural Resources
June 18, 2014



**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
FOR THE 2014 BASIN-WIDE MEETING**

I. INTRODUCTION

This report, to be presented at the annual basin-wide meeting, is intended to satisfy the tracking, reporting, and evaluation requirements of the 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 (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 fifth report to be filed following adoption of the IMPs in September 2009 and contains information on activities from January 1, 2013, to December 31, 2013.

Each of the 5 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. The above 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.

In addition to reporting on annual permitting activities, the Department is also required to report the following items every 5 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 (af); 5) any retirements of irrigated acres or other activities 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 above. The above items were included in the 2011 report¹ and will not be included in the 2014 report. These items, as well as the items reported annually, will be used in a robust analysis planned to be conducted every 5 years. This robust analysis is described in more detail in the IMPs.

Following the reporting at the annual basin-wide meeting, the items tracked and reported will be used by the 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

¹ *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' Integrated Management Plans for the 2011 Basin-Wide Meeting* available at <http://dnr.nebraska.gov/iwm/dnr-annual-reports-for-platte-basin-wide-meeting>

of the IMPs. Two evaluation processes for measuring success are described in the IMPs. The first is an annual 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. The second evaluation process occurs every 5 years and is more robust, including updating and running groundwater models. 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, 2013 THROUGH DECEMBER 31, 2013)

A. Summary

Items reported annually include permits that are issued by the Department. When a surface water or groundwater permit is reviewed, the Department assesses the potential for the permitted action to increase, decrease, or not affect water use. Depending on the circumstances, the applicant may be required to take action that would offset/mitigate the effect of any increase in water use. Described in each section below are the permits issued by the Department and the associated review of potential changes in the water use. The Department issued no new surface water permits, no dam safety permits, and 1 groundwater permit. Copies of the applications and orders for each permit are available in Appendix 1. More detailed information on each permit is available at the Department offices in Lincoln, Nebraska.

B. Surface Water Permits Issued – Table 1

No new surface water permits were issued in calendar year 2013.

C. Dam Safety Permits Issued – Table 2

No new dam safety permits were issued in calendar year 2013.

D. Groundwater Permits Issued – Table 3

One groundwater permit for 3 wells was issued by the Department for municipal use. Pursuant to *Neb. Rev. Stat.* § 46-613.01, the Department consulted with the North Platte NRD during the process of permit issuance. The proposed withdrawal associated with this permit represents a decrease in overall water use and a net cumulative effect that is hydrologically positive compared to historical use; therefore, no additional depletion or offset/mitigation analysis is required by the Department for this permit.

E. Offsets/Mitigations for Issued Permits

No offsets/mitigations were necessary for the 1 groundwater transfer permit issued.

F. Additional Reporting of Cancelled Permits – Table 4

To facilitate the exchange of information between the Department and the NRDs, the Department is also reporting on the cancellation of surface water permits. Six surface water permits were cancelled during the reporting period. Four of these were temporary permits which expired during the reporting period. Two were irrigation permits, one of which was only cancelled in part. Copies of the application and order for each cancelled surface water permit can be found in Appendix 1 of this report.

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

Due to the nature of the permitted actions, no depletion or offset/mitigation analysis and estimates were necessary for 2013 activities.

Projects for the purpose of providing accretions to the river are discussed in more detail in the Department's December 31, 2013, update to the Governance Committee, "Nebraska Update on Continued Implementation of the Nebraska New Depletion Plan (NNDP)," attached to this report in Appendix 1. Based on the analysis presented in that update, 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 <http://dnr.nebraska.gov/iwm/basin-wide-technical-committee-guidance-document>

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

A. Summary

For the 5 year tracking requirements, the Department reports on changes in livestock and human populations and conducts 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.

B. Inventory of Sandpits and Reservoirs Less Than 15 Acre-Foot in Volume

The inventory of sandpits and reservoirs less than 15 acre-feet for 2005 to 2010 was recently completed. Geospatial technologies and Farm Service Agency aerial images

were used to conduct this inventory. The 2005 baseline spatial inventory of these water bodies was compared to the 2010 inventory to identify new reservoirs and new or expanded sandpits. New reservoir features were cross-referenced with Dam Safety and Surface Water rights records to determine if storage permits existed and if there were any associated depletions and offsets/mitigations. New or expanded sandpits were checked for depletions estimates and existing offsets/mitigations. If the water bodies did not have existing offsets/mitigations, further analysis was done to determine their impact on consumptive use.

In total, there were 9 new reservoirs and 94 new or expanded sandpits, totaling 747 acres, which required consumptive use analysis. This analysis was done by using the Natural Resources Conservation Service (NRCS) Consumptive Use Calculator² to estimate the change in monthly evapotranspiration (ET) from 2005 land cover conditions to 2010 land cover conditions: shallow water for reservoirs and deep water for sandpits. It was found that consumptive use (ET) increased during all months for the new reservoirs and increased during October to April (non-irrigation months) and decreased during May to September (irrigation months) for new or expanded sandpits. Overall, there was estimated to be an annual decrease of 678 acre-feet consumptive use resulting from these changes in small water bodies. More than 2,500 working hours were invested in this analysis by the Department.

More information about the sandpits and reservoirs analysis can be found on the Department's website at <http://dnr.nebraska.gov/iwm/2005-2010-consumptive-use-of-small-man-made-water-bodies-in-the-platte-surface-water-basin-above-columbus>.

C. Other Activities to be Reported on a 5 Year Basis

Other activities in this section were reported for the 2010 calendar year in the 2011 report. Activities between calendar years 1997 and 2005 were reported in the 2010 report.³ Updates to livestock and human population data in the 2010 and 2011 reports are available on the Department website at: <http://dnr.nebraska.gov/iwm/dnr-annual-reports-for-platte-basin-wide-meeting>

The next update to this section of the report will be for changes in activities occurring between calendar year 2010 and calendar year 2015.

² The NRCS Consumptive Use Calculator is an Excel Spreadsheet tool which can be downloaded from the Department's Platte River Recovery Nebraska Depletion Plan webpage at <http://dnr.nebraska.gov/iwm/prrip-depletion> . More information on using this calculator can be found here <http://dnr.nebraska.gov/iwm/prrip-nrcs-consumptive-use-calculator-report>.

³ *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' Integrated Management Plans for the 2010 Basin-Wide Meeting* <http://dnr.nebraska.gov/iwm/dnr-annual-reports-for-platte-basin-wide-meeting>

IV. SUMMARY

During 2013, the Department issued no new surface water permits, no dam safety permits, and 1 groundwater permit. As described in the December 2013 Update on the NNDP, when all activities in the basin are tracked and summed, the net effect of new or expanded uses and offset/mitigation activities is positive to the river.

2014 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES

Table 1: Department Surface Water Permits Issued during Reporting Period January 1, 2013, to December 31, 2013

There were no new surface water permits issued in 2013.

Table 2: Department Dam Safety Permits Issued during Reporting Period January 1, 2013, to December 31, 2013

There were no new dam safety permits issued in 2013.

Table 3: Department Municipal and Industrial Groundwater Permits Issued during Reporting Period January 1, 2013, to December 31, 2013

Permit Number	Well Registration Number	NRD GW Transfer Permit Number	Approval Date	Well Type	Section	Township	Range	Permitted Max. Daily Rate (gal.)	Permitted Total Annual Consumptive Use (gal.)	Offset Scheme
MT-40	G-155040	N/A	1/31/2013	Municipal	*	23	58	1,620,000	176,273,381	Retirement of existing municipal wells; retirement of 66.2 irrigated acres; future offsets to be determined as needed per 46-740 & IMP
MT-40	G-162496	N/A	1/31/2013	Municipal	*	23	58	1,620,000	176,273,381	Retirement of existing municipal wells; retirement of 66.2 irrigated acres; future offsets to be determined as needed per 46-740 & IMP
MT-40	G-162497	N/A	1/31/2013	Municipal	*	23	58	1,620,000	176,273,381	Retirement of existing municipal wells; retirement of 66.2 irrigated acres; future offsets to be determined as needed per 46-740 & IMP

*Section has been removed for Public Water Supply

2014 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES

Table 4: Department Cancelled Surface Water Permits during Reporting Period January 1, 2013, to December 31, 2013

Appropriation Number	Modification Number	Order of Cancellation Date	Section	Township	Range	Use	Begin Acres	Cancelled Acres	Cancellation in CFS	Cancellation in AF	Right ID
A-15378	REL-4743	7/31/2013	33	10	21	Irrigation	64.0	64.0	0.91	---	645
A-1656	REL-4724	10/10/2013	5	9	16	Irrigation	18.8	1.7	0.02	---	830
A-18863	VAR-2182	1/13/2013	18	20	15	Temporary Groundwater Recharge	N/A	N/A	30.0	---	11077
A-18948	VAR-2377	8/8/2013	3	14	38	Temporary Construction	N/A	N/A	---	2.5	11181
A-18959	VAR-2370	11/29/2013	3	8	21	Temporary Groundwater Recharge	N/A	N/A	350	---	11192
A-18987	VAR-2397	11/29/2013	3	14	38	Temporary Groundwater Recharge	N/A	N/A	---	6000	11225

Copies of the Applications and Orders for each cancelled permit can be found in the Appendix 1 of this report.

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 applications 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 remaining in an appropriation after any acres may 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."
Date of Action	The date the water appropriation was approved.
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.
Grant in CFS	This refers to the approved amount of cubic feet per second of water legally allowed to be pumped.
Instream Use	This refers to water that is used, but not withdrawn, from a surface water source.

2014 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES

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. Also referred to as mitigation.
Order Date	This is the date the water appropriation or project was legally approved, denied, cancelled or altered.
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.
Project Name	This name is provided by the applicant.
Relinquishment (REL)	The 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 use of the dam, well, or water appropriation.
Variance (VAR)	A variance is issued to allow an exception to the stay on new irrigated acres or new consumptive uses while providing adequate offsets/mitigations or transfers to assure that there is no new increase in depletions to the river or impacts to existing surface water or groundwater uses; any request that is contrary to existing rules or regulations will require a variance.
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

	<p>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:</p> <p>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.</p>
--	---

The complete document and appendix are available from the Department website: <http://dnr.nebraska.gov/iwm/dnr-annual-reports-for-platte-basin-wide-meeting> or may be requested in paper or electronic format by contacting Jessie Wietjes at (402) 471-0376 or jessie.wietjes@nebraska.gov.

Listing of Document and Appendix:

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 2014 Basin-Wide Meeting.

Appendix 1

- Applications and Orders for Department permits issued (surface water permits, dam safety permits, groundwater permits). Maps and location information included in the original Applications and Order for MT-40 have been redacted for public safety.
- Applications and Orders for Department cancelled surface water permits.
- Nebraska Department of Natural Resources December 31, 2013, report to the Governance Committee (GC) of the Platte River Recovery Implementation Program (PRRIP), “Nebraska Update on Continued Implementation of the Nebraska New Depletion Plan (NNDP).”