



Dave Heineman
Governor

STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
Brian P. Dunnigan, P.E.
Director

IN REPLY TO:

May 14, 2012

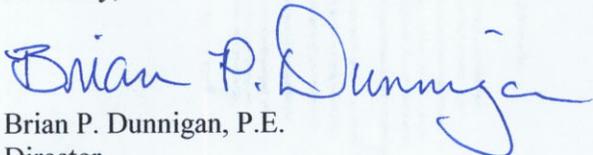
Roger W. Houdersheldt, Board Chairman
Upper Big Blue Natural Resources District
105 North Lincoln Avenue
York, NE 68467

Re: Upper Platte Basin Integrated Management Area Annual Report

Dear Mr. Houdersheldt:

Enclosed is the 2012 Annual Report of the Upper Platte Basin Integrated Management Area within the Upper Big Blue NRD. This report documents the items for which the Department is responsible under the Monitoring and Studies section of the Integrated Management Plan. Also, enclosed for your reference are Nebraska's 2010 Annual Report and the 2011 update to the Governance Committee of the Platte River Recovery and Implementation Program submitted as part of the Nebraska New Depletions Plan reporting.

Sincerely,


Brian P. Dunnigan, P.E.
Director

Enclosures

cc: John Turnbull, District Manager

**2012 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES
TO MEET THE REQUIREMENTS OF THE UPPER BIG BLUE NATURAL
RESOURCES DISTRICT'S INTEGRATED MANAGEMENT PLAN**

I. INTRODUCTION

This report is intended to satisfy the Department of Natural Resources (Department) tracking and reporting requirements as described in the Monitoring and Studies section of the Upper Big Blue Natural Resources District's integrated management plan (IMP). The Upper Big Blue Natural Resources District's IMP requires that the Department track and report on the following items on an annual basis: 1) any surface water permits issued; 2) any dam safety permits issued; 3) any groundwater permits issued; and 4) the associated offsets for any new permits issued. The Department is also required to report items every five (5) years, they include: 1) National Agricultural Statistics Service livestock data; 2) U.S. Census Bureau population data; 3) inventory of sandpits; 4) inventory of reservoirs of less than fifteen (15) acre-feet; 5) any retirements of irrigated acres or other water uses; and 6) offsets provided for depletions resulting from increased consumptive use related to the items listed above.

The items tracked and reported will be used by the Upper Big Blue NRD and the Department to measure the success of the controls, and other action items in meeting the goals and objectives of the IMPs. Two evaluation components for measuring success are described in the IMP. The tracking, reporting, and evaluation processes are described in more detail in the Monitoring and Studies section of the IMP. In addition to the 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 (Program).

The 2012 report is the second report to be filed following approval of the IMP in October 2010. This report contains information on the above listed items from January 1, 2011 to December 31, 2011.

II. ACTIVITIES TO BE REPORTED ANNUALLY

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 mitigate the effect of any increase in water use. Described in this section are the permits issued by the Department and the associated review of potential changes in the water use.

The Department issued no surface water, ground water, or dam safety permits; therefore there is no change in water use with respect to permitted activities.

2012 ANNUAL REPORT OF THE DEPARTMENT OF NATURAL RESOURCES

These data in addition to NRD permitted activities are incorporated by the Department into the annual reporting under the Nebraska New Depletions Plan.

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

For purposes of the Platte River Recovery and Implementation Program, the Department collected and analyzed a dataset for National Agricultural Statistics Service Livestock Data, and U.S. Census Bureau Population Data in calendar years 1997 and 2005 and sandpits and other reservoirs smaller than fifteen (15) acre-feet (those not requiring a permit) from 2005 aerial imagery. The National Agricultural Statistics Service Livestock Data and U.S. Census Bureau Population Data have been compiled and analyzed for 2010. Analysis of 2010 sandpits and small reservoirs is presently underway. These data will be reported by the Department through the Nebraska New Depletions Plan reporting.



Dave Heineman
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STATE OF NEBRASKA
DEPARTMENT OF NATURAL RESOURCES
Brian P. Dunnigan, P.E.
Director

IN REPLY TO:

VIA ELECTRONIC MAIL ONLY

Date: January 6, 2012

TO: Governance Committee (GC) of the Platte River Recovery Implementation Program (PRRIP)

FROM: Jim Schneider, State of Nebraska's Representative to the GC Deputy Director, Nebraska Department of Natural Resources

SUBJECT: Nebraska's Annual Report Under Bullet #3 Section IV of the Platte River Recovery Implementation Program Nebraska New Depletion Plan January 1, 2010 to December 31, 2010

This report fulfills the annual reporting requirement for Nebraska for the period January 1, 2010 to December 31, 2010 for the Platte River Recovery Implementation Program (PRRIP) Attachment 5, Section 8, Section IV, Bullet 3, Nebraska New Depletion Plan (NNDP).

This report contains information on the following activities in Nebraska in the 28/40 area:

- 1) Permitted new and expanded uses of surface water;
- 2) Permitted new and expanded uses of groundwater;
- 3) Collective depletion for these new and expanded permitted uses;
- 4) Collective mitigation for these new and expanded permitted uses; and
- 5) Additional measures to be implemented by Nebraska to satisfy all mitigation elements required because of new depletions to target flows.

Data in this report are from the Nebraska Department of Natural Resources (Department) and the five Natural Resources Districts (NRDs) with land in the 28/40 area.

Nebraska's Annual Report
 Under Bullet #3 Section IV of the
 Platte River Recovery Implementation Program
 Nebraska New Depletion Plan
 January 1, 2010 to December 31, 2010

Permitted and Expanded Uses of Surface and Groundwater (Section IV, Bullet 3, #1 and #2).

Tables 1 – 3 summarize the water use permits issued in 2010 by river reach (both upstream and within the PRRIP critical habitat reach) (figure 1). In 2010, the NRDs and the Department issued the following permits:

- 58 groundwater transfer permits (table 1);
- 54 groundwater well permits (table 2);
- 5 groundwater variance permits (table 3); and
- No new surface water permits.

Tables 4 – 6 provide a detailed list of these permitted uses and mitigation of these uses.

Table 1: Groundwater (GW) Transfer Permits in the 28/40 area upstream and within the PRRIP Critical Habitat Reach (based on the new and/or expanded use portion of the transfer.)

Use	# Upstream	# Within	Total
GW Transfers	40 ¹	18	58

¹of 40 groundwater transfers, 1 is industrial).

Table 2: Groundwater Well Permits in the 28/40 area upstream and within the PRRIP Critical Habitat Reach.

Use	# Upstream	# Within	Total
Dewatering	4	0	4
Domestic	1	0	1
Industrial	1	0	1
Supplemental	4	3	7
Municipal	0	0	0
Replacement	12	25	37
Other	2	2	4
Total	24	30	54

Nebraska's Annual Report
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Table 3: Groundwater Variance Permits in the 28/40 area upstream and within the PRRIP Critical Habitat Reach.

Use	# Upstream	# Within	Total
Industrial	1	0	1
Pooling	0	0	0
Transfer Well	0	0	0
Area Correction	0	2	2
CRP Reinstatement	0	1	1
Other	0	1	1
Total	1	4	5



Platte River Regions in Nebraska New Depletions Plan Annual Report 2011, Platte River Recovery Implementation Program (PRRIP)

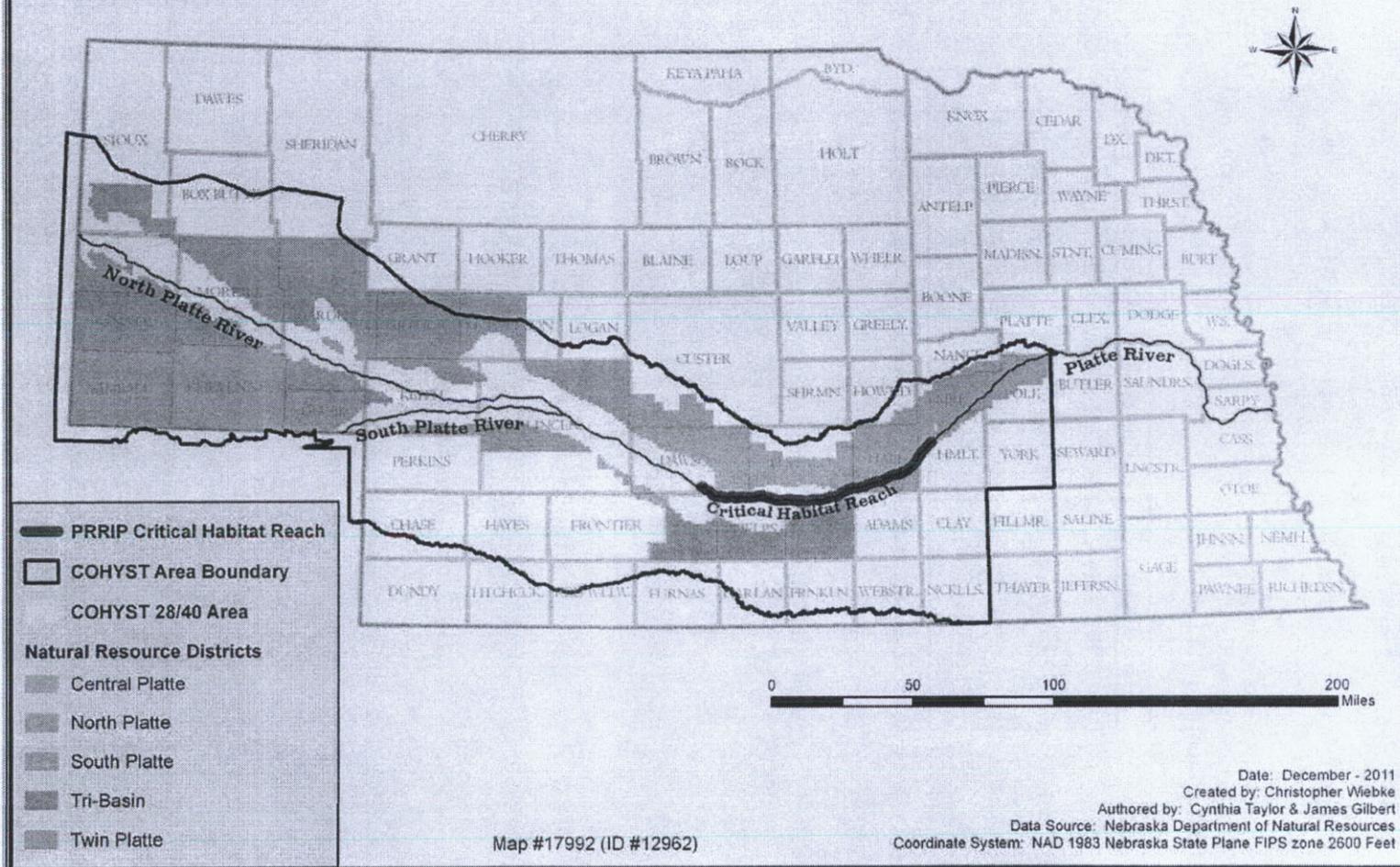


Figure 1: COHYST 28/40 modeled area and PRRIP Critical Habitat Reach.

Table 4: Groundwater Transfer Permits

NRD	Permit Type	NRD Permit	Permit Date	Section	Township	Range	East/ West	Transferred Acres	Notes	Year Implemented	Associated Well Permit
CPNRD	New or Expanded Use	210	1/13/2010	31	10	12	W	53.49		2010	
CPNRD	Mitigation	210	1/13/2010	14	8	15	W	1.14		2010	
CPNRD	New or Expanded Use	215	1/19/2010	1	10	11	W	0.34		2010	
CPNRD	New or Expanded Use	215	1/19/2010	1	10	11	W	0.34		2010	
CPNRD	New or Expanded Use	215	1/19/2010	1	10	11	W	0.34		2010	
CPNRD	Mitigation	215	1/19/2010	1	10	11	W	1.12		2010	
CPNRD	Mitigation	215	1/19/2010	20	9	11	W	0.06		2010	
CPNRD	Mitigation	216	1/26/2010	8	8	15	W	24.21		2010	
CPNRD	New or Expanded Use	217	2/4/2010	36	12	25	W	2.70		2010	
CPNRD	Mitigation	217	2/4/2010	36	12	25	W	1.35		2010	
CPNRD	Mitigation	217	2/4/2010	36	12	25	W	1.35		2010	
CPNRD	New or Expanded Use	218	2/26/2010	17	13	9	W	3.81		2010	
CPNRD	Mitigation	218	2/26/2010	20	9	11	W	0.76		2010	
CPNRD	New or Expanded Use	219	3/3/2010	13	9	11	W	0.96		2010	
CPNRD	Mitigation	219	3/3/2010	20	9	11	W	0.39		2010	
CPNRD	New or Expanded Use	220	3/3/2010	15	11	10	W	4.04		2010	
CPNRD	Mitigation	220	3/3/2010	20	9	11	W	0.89		2010	
CPNRD	New or Expanded Use	223	4/1/2010	3	9	19	W	2.06		2010	
CPNRD	New or Expanded Use	223	4/1/2010	3	9	19	W	2.06		2010	
CPNRD	New or Expanded Use	223	4/1/2010	3	9	19	W	2.06		2010	
CPNRD	Mitigation	223	4/1/2010	3	9	19	W	11.75		2010	
CPNRD	Mitigation	223	4/1/2010	35	9	19	W	5.82		2010	
CPNRD	Mitigation	223	4/1/2010	3	9	19	W	11.75		2010	
CPNRD	Mitigation	223	4/1/2010	35	9	19	W	5.82		2010	
CPNRD	New or Expanded Use	227	4/29/2010	20	9	22	W	1.88		2010	
CPNRD	New or Expanded Use	227	4/29/2010	20	9	22	W	1.88		2010	
CPNRD	Mitigation	227	4/29/2010	20	9	22	W	1.03		2010	
CPNRD	Mitigation	227	4/29/2010	20	9	22	W	1.03		2010	
CPNRD	New or Expanded Use	231	5/4/2010	36	12	25	W	5.12		2010	
CPNRD	Mitigation	231	5/4/2010	36	12	25	W	3.39		2010	
CPNRD	Mitigation	231	5/4/2010	36	12	25	W	3.39		2010	

CPNRD	New or Expanded Use	236	5/11/2010	33	9	17	W	0.65		2010	
CPNRD	New or Expanded Use	236	5/11/2010	33	9	17	W	0.65		2010	
CPNRD	Mitigation	236	5/11/2010	33	9	17	W	1.02		2010	
CPNRD	New or Expanded Use	237	5/11/2010	10	10	22	W	1.46		2010	
CPNRD	New or Expanded Use	239	6/16/2010	26	12	25	W	0.54		2010	
CPNRD	Mitigation	239	6/16/2010	26	12	25	W	1.00		2010	
CPNRD	New or Expanded Use	240	6/16/2010	17	10	12	W	1.96		2010	
CPNRD	New or Expanded Use	240	6/16/2010	17	10	12	W	1.96		2010	
CPNRD	Mitigation	240	6/16/2010	11	8	14	W	1.00		2010	
CPNRD	New or Expanded Use	246	6/16/2010	3	10	24	W	2.64		2010	
CPNRD	New or Expanded Use	246	6/16/2010	3	10	24	W	2.64		2010	
CPNRD	Mitigation	246	6/16/2010	3	10	24	W	2.50		2010	
CPNRD	Mitigation	246	6/16/2010	3	10	24	W	2.50		2010	
CPNRD	New or Expanded Use	247	6/16/2010	12	10	25	W	3.92		2010	
CPNRD	Mitigation	247	6/16/2010	12	10	25	W	3.91		2010	
CPNRD	New or Expanded Use	252	6/17/2010	14	9	11	W	1.96		2010	
CPNRD	New or Expanded Use	252	6/17/2010	14	9	11	W	1.96		2010	
CPNRD	Mitigation	252	6/17/2010	14	9	11	W	4.47		2010	
CPNRD	New or Expanded Use	255	6/21/2010	11	11	25	W	1.46		2010	
CPNRD	Mitigation	255	6/21/2010	11	11	25	W	1.47		2010	
CPNRD	New or Expanded Use	257	6/21/2010	3	8	15	W	1.87		2010	
CPNRD	Mitigation	257	6/21/2010	3	8	15	W	1.00		2010	
CPNRD	Mitigation	257	6/21/2010	3	8	15	W	1.00		2010	
CPNRD	New or Expanded Use	267	7/16/2010	9	10	22	W	1.97		2010	
CPNRD	Mitigation	267	7/16/2010	9	10	22	W	2.00		2010	
CPNRD	New or Expanded Use	270	7/21/2010	32	9	21	W	2.72		2010	
CPNRD	Mitigation	270	7/21/2010	32	9	21	W	1.11		2010	
CPNRD	New or Expanded Use	289	9/22/2010	2	9	21	W	2.23		2011	
CPNRD	Mitigation	289	9/22/2010	2	9	21	W	2.22		2011	
CPNRD	New or Expanded Use	292	10/12/2010	26	12	25	W	1.73		2011	
CPNRD	Mitigation	292	10/12/2010	26	12	25	W	1.10		2010	
CPNRD	Mitigation	292	10/12/2010	26	12	25	W	1.10		2010	
CPNRD	New or Expanded Use	295	10/12/2010	31	9	23	W	2.01		2011	
CPNRD	Mitigation	295	10/12/2010	31	9	23	W	2.12		2011	

CPNRD	New or Expanded Use	296	11/15/2010	27	14	8	W	29.37		2011	
CPNRD	New or Expanded Use	296	11/15/2010	27	14	8	W	29.37		2011	
CPNRD	Mitigation	296	11/15/2010	20	9	11	W	10.19		2010	
CPNRD	New or Expanded Use	305	12/15/2010	16	11	22	W	2.09		2011	
CPNRD	Mitigation	305	12/15/2010	4	10	22	W	1.01		2011	
CPNRD	New or Expanded Use	306	12/20/2010	13	10	15	W	82.50		2011	
CPNRD	New or Expanded Use	306	12/20/2010	13	10	15	W	82.50		2011	
CPNRD	Mitigation	306	12/20/2010	30	11	24	W	4.83		2010	
CPNRD	New or Expanded Use	308	12/20/2010	10	11	24	W	1.32		2011	
CPNRD	New or Expanded Use	308	12/20/2010	10	11	24	W	1.32		2011	
CPNRD	Mitigation	308	12/20/2010	10	11	24	W	1.02		2011	
CPNRD	New or Expanded Use	309	12/20/2010	4	10	22	W	2.41		2011	
CPNRD	New or Expanded Use	309	12/20/2010	4	10	22	W	2.41		2011	
CPNRD	New or Expanded Use	309	12/20/2010	4	10	22	W	2.41		2011	
CPNRD	Mitigation	309	12/20/2010	4	10	22	W	3.04		2011	
CPNRD	New or Expanded Use	314	1/17/2011	32	9	17	W	1.10		2011	
CPNRD	Mitigation	314	1/17/2011	32	9	17	W	1.03		2011	
SPNRD	New or Expanded Use	IND-018-Smith	1/1/2010	1	12	44	W		No Baseline Industrial Use, Offset by allocation on irrigated acres.	2010	
SPNRD	Mitigation	IND-018-Smith	1/1/2010	16	12	43	W	36.00	No Baseline Industrial Use, Offset by allocation on irrigated acres.	2010	
TBNRD	New or Expanded Use	GWT-0229	3/10/2010	19	8	23	W	54.00		2010	
TBNRD	Mitigation	GWT-0229	3/10/2010	19	8	23	W	54.00		2010	
TBNRD	New or Expanded Use	TBAT-0065	4/14/2010	2	7	16	W	41.00		2010	
TBNRD	Mitigation	TBAT-0065	4/14/2010	21	8	23	W	41.00		2010	
TBNRD	New or Expanded Use	TBAT-0067	4/14/2010	20	8	15	W	7.65		2010	
TBNRD	Mitigation	TBAT-0067	4/14/2010	27	8	15	W	9.00		2010	
TBNRD	New or Expanded Use	TBAT-0077A	12/14/2010	12	7	16	W	19.81		2011	
TBNRD	Mitigation	TBAT-0077A	12/14/2010	6	7	22	W	19.80		2011	
TBNRD	New or Expanded Use	TBAT-0077B	12/14/2010	12	7	16	W	5.91		2011	
TBNRD	Mitigation	TBAT-0077B	12/14/2010	5	7	22	W	5.91		2011	
TPNRD	New or Expanded Use	TP-TRANS-10.06		13	14	32	W	4.79		2010	
TPNRD	Mitigation	TP-TRANS-10.06		13	14	32	W	4.79		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.08		25	14	32	W	8.41		2010	
TPNRD	Mitigation	TP-TRANS-10.08		25	14	32	W	8.41		2010	

TPNRD	New or Expanded Use	TP-TRANS-10.09	6	12	40	W	15.00		2011	
TPNRD	Mitigation	TP-TRANS-10.09	6	12	40	W	0.52		2011	
TPNRD	Mitigation	TP-TRANS-10.09	7	12	40	W	14.48		2011	
TPNRD	New or Expanded Use	TP-TRANS-10.11	11	12	39	W	126.50		2010	
TPNRD	Mitigation	TP-TRANS-10.11	5	12	39	W	126.50		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.13	23	14	33	W	6.60		2010	
TPNRD	Mitigation	TP-TRANS-10.13	23	14	33	W	5.48		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.15	9	13	38	W	1.42		2010	
TPNRD	Mitigation	TP-TRANS-10.15	9	13	38	W	1.42		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.16	34	13	34	W	132.00		2010	
TPNRD	Mitigation	TP-TRANS-10.16	10	13	38	W	29.91		2010	
TPNRD	Mitigation	TP-TRANS-10.16	29	13	40	W	25.19		2010	
TPNRD	Mitigation	TP-TRANS-10.16	1	12	39	W	36.77		2010	
TPNRD	Mitigation	TP-TRANS-10.16	33	13	40	W	26.82		2010	
TPNRD	Mitigation	TP-TRANS-10.16	6	12	38	W	14.40		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.19	35	12	26	W	2.23		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.19	26	12	26	W	7.77		2010	
TPNRD	Mitigation	TP-TRANS-10.19	35	12	26	W	8.80		2010	
TPNRD	Mitigation	TP-TRANS-10.19	26	12	26	W	1.20		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.20	34	13	34	W	132.00		2010	
TPNRD	Mitigation	TP-TRANS-10.20	6	13	35	W	19.22		2010	
TPNRD	Mitigation	TP-TRANS-10.20	6	12	38	W	11.27		2010	
TPNRD	Mitigation	TP-TRANS-10.20	6	13	36	W	29.97		2010	
TPNRD	Mitigation	TP-TRANS-10.20	20	14	38	W	41.70		2010	
TPNRD	Mitigation	TP-TRANS-10.20	5	13	37	W	29.03		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.21	20	11	26	W	0.57		2010	
TPNRD	Mitigation	TP-TRANS-10.21	20	11	26	W	0.57		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.22	18	14	31	W	11.30		2010	
TPNRD	Mitigation	TP-TRANS-10.22	18	14	31	W	5.14		2010	
TPNRD	Mitigation	TP-TRANS-10.22	7	14	31	W	6.16		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.23	26	13	40	W	2.82		2010	
TPNRD	Mitigation	TP-TRANS-10.23	26	13	40	W	2.82		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.25	15	11	26	W	3.10		2010	
TPNRD	Mitigation	TP-TRANS-10.25	15	11	26	W	3.10		2010	

TPNRD	New or Expanded Use	TP-TRANS-10.26		3	13	39	W	8.19		2010	
TPNRD	Mitigation	TP-TRANS-10.26		3	13	39	W	8.19		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.27		31	13	40	W	5.00		2010	
TPNRD	Mitigation	TP-TRANS-10.27		31	13	40	W	5.00		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.28		14	14	32	W	7.01		2010	
TPNRD	Mitigation	TP-TRANS-10.28		14	14	32	W	6.01		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.30		12	13	35	W	27.24		2010	
TPNRD	Mitigation	TP-TRANS-10.30		12	13	35	W	27.24		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.32		31	13	40	W	6.31		2010	
TPNRD	Mitigation	TP-TRANS-10.32		31	13	40	W	6.31		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.33		6	13	33	W	26.54		2010	
TPNRD	Mitigation	TP-TRANS-10.33		6	13	33	W	26.54		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.36		4	12	41	W	32.52		2010	
TPNRD	Mitigation	TP-TRANS-10.36		4	12	41	W	32.52		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.37		7	13	38	W	8.07		2010	
TPNRD	Mitigation	TP-TRANS-10.37		7	13	38	W	8.07		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.38		26	13	34	W	2.50		2010	
TPNRD	Mitigation	TP-TRANS-10.38		26	13	34	W	2.50		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.41		30	14	33	W	3.89		2010	
TPNRD	Mitigation	TP-TRANS-10.41		30	14	33	W	3.89		2010	
TPNRD	New or Expanded Use	TP-TRANS-10.42		22	13	35	W	6.10		2011	
TPNRD	Mitigation	TP-TRANS-10.42		4	13	36	W	6.10		2011	

Table 5. Groundwater Well Permits²

NRD	Permit Type	NRD Permit	DNR Well Registration #	Permit Date	Section	Township	Range	East/West	Sub Section	Notes	Year Implemented
CPNRD	New Well - Dewatering	CPDW2410025	G-158378	12/23/2010	15	11	25	W			2011
CPNRD	New Well - Dewatering	CPDW2410026	G-158379	12/23/2010	15	11	25	W			2011
CPNRD	New Well - Replacement	CPRP1010028	No new permit pending	12/15/2010	32	9	15	W			
CPNRD	New Well	CPNP2410019	G-160469	11/29/2010	26	11	25	W		Converted from SW to GW; no new use	2011
CPNRD	New Well	CPNP2410020	G-160470	11/29/2010	21	11	25	W		Converted from SW to GW; no new use	2011
CPNRD	New Well - Replacement	CPRP1010001	G-006095	1/25/2010	8	8	15	W		Associated GW transfer permit # 216	2010
CPNRD	New Well - Replacement	CPRP1010002	Well drilled but not yet registered	2/1/2010	34	9	15	W			
CPNRD	New Well - Replacement	CPRP1010003	G-045612	2/8/2010	27	9	14	W			2010
CPNRD	New Well - Replacement	CPRP1010006		3/4/2010	3	8	15	W		Associated GW transfer permit # 257	
CPNRD	New Well - Replacement	CPRP1010015	Well drilled but not yet registered	7/28/2010	9	8	15	W			
CPNRD	New Well - Replacement	CPRP1010016	Well drilled but not yet registered	7/30/2010	7	8	15	W			
CPNRD	New Well - Replacement	CPRP1010021	G-017919	10/27/2010	31	9	14	W			2011
CPNRD	New Well - Replacement	CPRP1010024	G-037082	11/29/2010	23	9	17	W			2011
CPNRD	New Well - Replacement	CPRP1010025	G-014845	11/29/2010	13	8	15	W			2010
CPNRD	New Well - Replacement	CPRP2410001	A-007561A	2/2/2010	19	10	21	W			2010
CPNRD	New Well - Replacement	CPRP2410005	G-014396	4/28/2010	3	10	24	W		Associated GW transfer permit # 246	2010
CPNRD	New Well - Replacement	CPRP2410009	G-016671	6/3/2010	12	11	25	W			2010
CPNRD	New Well - Replacement	CPRP2410010	G-030236	7/1/2010	32	9	23	W			2010
CPNRD	New Well - Replacement	CPRP2410011	G-013370	10/12/2010	16	9	22	W			2011
CPNRD	New Well - Replacement	CPRP2410015	G-010638	10/26/2010	10	11	24	W		Associated GW transfer permit # 308	
CPNRD	New Well - Replacement	CPRP2410016	Well not drilled yet	11/1/2010	23	9	22	W			
CPNRD	New Well - Replacement	CPRP2410021	G-010199	12/8/2010	3	10	23	W			2011
CPNRD	New Well - Replacement	CPRP2410022	G-017210	12/14/2010	1	8	19	W			2011
CPNRD	New Well - Supplemental to GW	CPSG1010023	G-160318	11/23/2010	2	8	18	W			
CPNRD	New Well - Supplemental to GW	CPSG2410023	G-15891	12/22/2010	15	10	23	W			2011
CPNRD	New Well - Supplemental to GW	CPSG2410024	G-158915	12/22/2010	15	10	23	W			2011
CPNRD	New Well - Supplemental to SW	CPSS1010029	Well not drilled yet	12/17/2010	33	9	18	W			
NPNRD	New Well - Industrial	NP-IN-09012	G-155458	1/29/2010	25	22	55	W		Well G-096889 was decommissioned and the use discontinued for use as the mitigation for well G-155458 and corresponding use. The analysis of accretions/depletions between the two wells shows that there is not an increase in depletions to the NP River.	2010

NPNRD	New Well - Replacement	NP-RP-10001	A-011085D	4/7/2010	X	X	X	W		This well was drilled in 2010 but has not been pumped or hooked up to the system due to high uranium. According to the city it may be several years before it is used.; CU mitigation is NRD; Point of withdrawal change is City of Scottsbluff	
NPNRD	New Well - Replacement	NP-RP-10003	G-058566	4/23/2010	11	17	44	W			2010
NPNRD	New Well - Replacement	NP-RP-10005	G-013483	12/10/2010	14	22	54	W			2011
NPNRD	New Well - Replacement	NP-RP-10006	A-007071	12/10/2010	23	22	54	W			2011
SPNRD	New Well - Replacement	SP-RP-185-2010	G-013945	4/15/2010	10	12	42	W			2010
TBNRD	New Well - Replacement	TBRP-G000597	G-000597	11/5/2010	21	7	17	W			2011
TBNRD	New Well - Replacement	TBRP-G006451	G-006451	5/28/2010	24	8	20	W			2010
TBNRD	New Well - Replacement	TBRP-G011192	G-011192	2/23/2010	19	8	14	W			2011
TBNRD	New Well - Replacement	TBRP-G021397	G-021397	4/26/2010	7	7	16	W			2010
TBNRD	New Well - Replacement	TBRP-G023093	G-023093	12/1/2010	13	7	20	W			2011
TBNRD	New Well - Replacement	TBRP-G026092	G-026092	5/28/2010	30	7	17	W			2010
TBNRD	New Well - Replacement	TBRP-G026577	G-026577	4/29/2010	23	7	17	W			2010
TBNRD	New Well - Replacement	TBRP-G036447	G-036447	2/23/2010	1	6	19	W			2010
TBNRD	New Well - Replacement	TBRP-G044307	G-044307	9/29/2010	27	7	17	W			2011
TBNRD	New Well - Replacement	TBRP-G050885	G-050885	4/6/2010	22	8	14	W			2010
TBNRD	New Well - Replacement	TBRP-G062020	G-062020	4/26/2010	11	7	18	W			2010
TBNRD	New Well - Replacement	TBRP-G069410	G-069410	3/18/2010	34	8	19	W			2010
TBNRD	New Well - Replacement	TBRP-G074157	G-074157	8/2/2010	5	7	18	W			2011
TBNRD	New Well - Supplemental to GW	TBSG-1391	See notes	12/21/2010	23	8	15	W		Supplemental to G. Water Use Reg # G-071869 -No NEW Acres	2011
TBNRD	New Well - Supplemental to SW	TBSS-1390	G-158114	11/30/2010	7	7	18	W		Purpose to supplement surface water - if needed	2011
TBNRD	New Well	TBTF-1384	See notes	5/12/2010	2	7	16	W		VOID - This well was not drilled; associated transfer permit #TBAT-0065	
TPNRD	New Well - Dewatering	TP-DW-10.03	G-155242	2/11/2010	31	14	33	W	SESE	De-watering well - less than 90 days	2010
TPNRD	New Well - Dewatering	TP-DW-10.04	G-155241	2/11/2010	31	14	33	W	NENE	De-watering well - less than 90 days	2010
TPNRD	New Well - Supplemental to GW	TP-NP-10.05	See notes	3/18/2010	2	11	27	W	NESW	Requesting a supplemental GW well - an old well needs a helper well for pivot - no new irrigated acres	2010
TPNRD	New Well - Supplemental to GW	TP-NP-10.07	G-158984	3/19/2010	6	12	40	W	SW	Convert flood ground to a pivot. Will use the old flood well to do the corners. No new acres. Associated transfer permits #TP-TRANS-10.13 and TP-TRANS010.09	2010
TPNRD	New Well - Domestic	TP-NP-10.24	G-156468	8/19/2010	25	13	41	W	NWSW	Want to pump <50 gpm from domestic well	2010

²All replacement wells and all supplemental wells result in no new consumptive use.

Table 6. Variance Permits

NRD	Permit Date	NRD Permit	DNR Well Registration #	Section	Township	Range	East/West	Type of Variance	Notes	Year Implemented	Associated Well Permit
SPNRD		Ind-10-McClung	G-002327	2	12	42	W	Industrial	Industry established in 1985 (aerial crop spraying) with insufficient data to develop baseline, has 3 years to develop.	2010	
TBNRD		NA 16	G-018313	18	8	19	W	Acre Certification Correction	Acre Certification Correction	1942	
TBNRD		NA 17	G-008246	18	8	18	W	Acre Certification Correction	Acre Certification Correction	1957	
TBNRD		NA 18	G-059262	33	8	16	W	Reinstatement of CRP Acres	CRP Contract - Irrigation established prior to 1997	2010	
TBNRD	5/12/10	TBTF-1384		2	7	16	W		New well not drilled; permit expired, using old [G-116982] well at this time. Associated transfer permit # TBAT-0065	2010	TBTF-1384

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Under Bullet #3 Section IV of the
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Nebraska New Depletion Plan
January 1, 2010 to December 31, 2010

Collective Depletion and Mitigation for New and Expanded Permitted Uses (Section IV, Bullet 3, #3 and #4)

Table 7 shows the total estimated stream depletions (new or expanded uses), total accretions (mitigation), and the net effect by stream reach during the first 10-year increment (2010 to 2019). Values in table 7 were derived from the information for the permits listed in tables 4 – 6 above; a positive value indicates that the mitigation exceeded the depletive effect of the new or expanded permitted uses. Effects to the river were estimated for each permitted action representing a new consumptive use of water and the corresponding mitigation for each new use. Due to the nature of the permitted actions, only the transfers listed in table 4 were new or expanded uses that required this evaluation. For each permitted action evaluated, there was a new use initiated and an existing use retired. For actions where the new and retired uses were a change in agricultural land use, the difference in consumptive use was estimated based on land use conversions typical of the area (e.g. irrigated corn to dryland corn or vice versa). The change in consumptive use for other types of uses, such as new industrial uses, was estimated based upon available data. The yearly effect to the river from each individual permitted action (new/expanded uses or mitigations) was estimated using an annual depletion percentage series developed using the Hunt equation and average hydraulic characteristics taken from COHYST data.

Figure 2 illustrates the net accretions or net depletions upstream from and within the critical habitat reach, and the aggregate net effects of both reaches when considered together. Nebraska's mitigation efforts within the 28/40 area result in a net increase to streamflow in the PRRIP Critical Habitat Reach (CHR).

Nebraska's Annual Report
 Under Bullet #3 Section IV of the
 Platte River Recovery Implementation Program
 Nebraska New Depletion Plan
 January 1, 2010 to December 31, 2010

Table 7. Effects to stream flow in Platte River resulting from permitted new or expanded groundwater uses and mitigation (in acre-feet) that occurred in 2010; a positive values indicates that the mitigation exceeded the depletive effect of the new or expanded permitted use (see tables 4 – 6 for the mitigation for any given permit).

	Upstream of Critical Habitat Reach			Within Critical Habitat Reach			Aggregate Net Effect from Both Reaches
	Depletions/ New Uses	Accretions/ Mitigation	Net Effect	Depletions/ New Uses	Accretions/ Mitigation	Net Effect	Net Effect
2010	-17	35	18	-6	4	-2	16
2011	-27	59	33	-13	7	-6	26
2012	-35	78	42	-19	9	-10	32
2013	-44	93	49	-25	11	-14	35
2014	-52	105	53	-29	12	-17	37
2015	-59	116	57	-33	13	-19	37
2016	-66	125	59	-36	14	-22	37
2017	-72	133	61	-39	15	-24	37
2018	-78	140	62	-42	16	-26	36
2019	-83	146	63	-44	16	-28	35

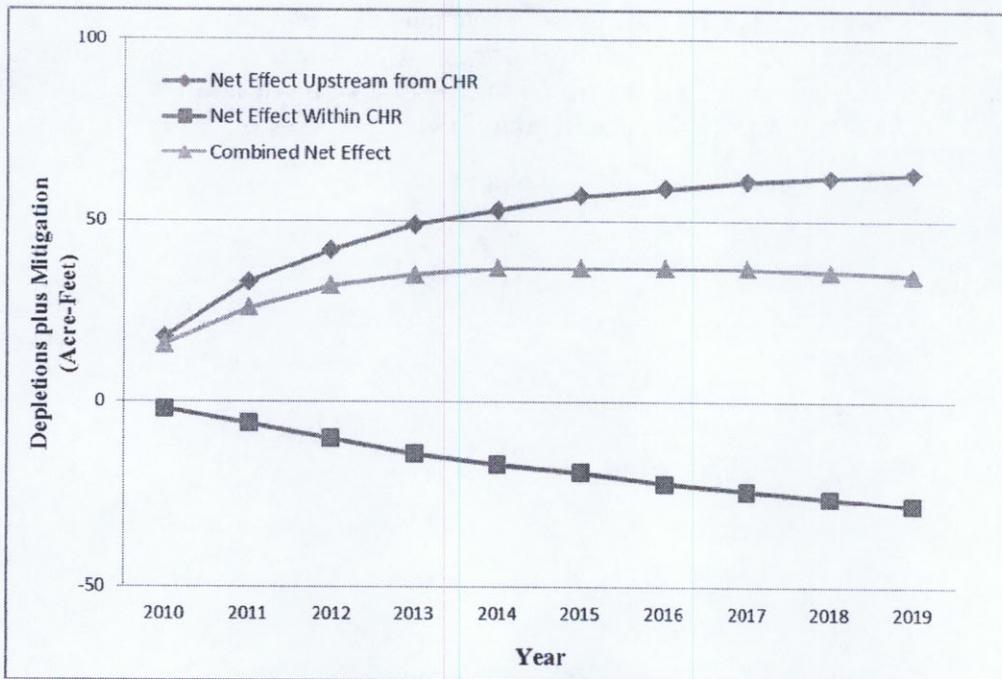


Figure 2: Aggregate net effect to streamflow resulting from depletions/new uses and accretions/mitigations for the first 10-year increment, 2010 to 2019.

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Implementation of additional measures to satisfy all mitigation required because of new depletions to target flows (Section IV, Bullet 3, #5).

Based upon the analysis of annual stream flow depletions and mitigations, no additional measures are required at this time.

Questions about information provided in the tables should be directed to:

Central Platte NRD (CPNRD)	308-385-6282	Ron Bishop
North Platte NRD (NPNRD)	308-632-2749	Tina Kurtz
South Platte NRD (SPNRD)	308-254-2377	Rod Horn
Tri-Basin NRD (TBNRD)	308-995-6688	John Thorburn
Twin Platte NRD (TPNRD)	308-535-8080	Kent Miller
NDNR	402-471-2899	Jennifer Schellpeper

Supporting information can be found at: <http://dnr.ne.gov/newsreleases/annualreport2011>



Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES
Brian P. Dunnigan, P.E.
Director

IN REPLY TO:

VIA ELECTRONIC MAIL ONLY

Date: January 6, 2012

TO: Governance Committee (GC) of the Platte River Recovery Implementation Program (PRRIP)

FROM: Jim Schneider, State of Nebraska's Representative to the GC
Deputy Director, Nebraska Department of Natural Resources

SUBJECT: Nebraska Update on Continued Implementation of the Nebraska New Depletion Plan (NNDP)

Nebraska is meeting the terms of the Nebraska New Depletions Plan (NNDP). Based upon current estimates, the amount of accretions due to mitigation measures exceeds the amount of depletions from new or expanded uses. Details on the analysis and Nebraska's continued efforts to implement the NNDP are discussed in this memo. This memo also contains a general description of Nebraska's continuing work to conduct a complete and comprehensive assessment of all post-July 1, 1997, activities.

This update is being provided to the Governance Committee to outline Nebraska's depletive activities and mitigation measures through November 1, 2011, resulting from new and expanded uses of water as defined in the NNDP. This update utilizes information from previous memos and annual reports as well as additional information developed by Nebraska to summarize the net effect (difference between depletive activities and mitigation measures) through the end of the first increment (2019). The four sections in this update are described in detail below. If there are questions on the contents of this document please contact Jennifer Schellpeper at 402-471-2899 or jennifer.schellpeper@nebraska.gov.

MEMO ORGANIZATION

Section 1 includes updates on 3 separate items: a) an update to the Nebraska annual report for the period 2006 to 2009 (12/30/2010) on the estimated depletions due to activities permitted between 2006 and 2009; b) a review of the estimated depletions of unpermitted new or expanded uses since July 1, 1997 (some of which were previously reported in Nebraska's December 2, 2008, memo (2008 Memo) to the Governance Committee (GC)); and c) new values for the depletive effects due to changes in human and livestock populations through 2010.

iwip/members/schellpeper

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Nebraska Update on Continued Implementation of
the Nebraska New Depletion Plan (NNDP), January 6, 2012

Section 2 reviews the mitigation measures currently in place to offset the depletions from the activities described in Section 1 (some of which were also previously reported in the 2008 Memo to the GC). Section 2 also discusses the institutional mechanisms and inter-agency programs and projects (federal, state, and local Nebraska Natural Resource Districts (NRDs)) that are being implemented to mitigate depletions.

Section 3 summarizes the net effect of the combined depletions and mitigation measures from Sections 1 and 2 and the resulting effect of these activities on streamflows of the Platte River in Nebraska.

Section 4 describes the continued efforts currently in process to refine assessment methodologies. This section describes the development and refinement of datasets and modeling projects that Nebraska is currently pursuing to comprehensively assess the effects of all new or expanded activities that have occurred since July 1, 1997.

1.0 UPDATE ON NEW OR EXPANDED ACTIVITIES

1.1 Net effect to streamflow of permitted new or expanded water use activities between 2006 and 2010

The NNDP specifies that Nebraska is to supply an annual report of all permitted new or expanded water uses, their associated depletive effects, and the mitigation measures supplied to offset those depletions. Nebraska's first annual report (12/30/2010) for activities permitted in 2006 through 2009 listed the permits, but it did not include their associated depletive effects and the mitigation measures supplied as offset. An analysis of depletions and mitigations is necessary to understand the net effect of permitted activities, and Nebraska has now completed that analysis. Table 1 includes those depletions and mitigations, along with the depletions and mitigations from permits issued in 2010 that are reported in Nebraska's second annual report (1/6/2012) for activities permitted in calendar year 2010. Nebraska's 1/6/2012 annual report describes the methodology used to calculate the depletion and mitigation values. A negative value in the tables represents depletion to the stream, and a positive value represents an accretion to the stream. Table 1 shows that the net effect of the permitted activities is positive in years 2007 through 2010; therefore, no additional mitigation measures are needed to maintain a neutral balance to streamflow.

Nebraska Update on Continued Implementation of
the Nebraska New Depletion Plan (NNDP), January 6, 2012

Table 1. 2006-2010 permitted new and expanded groundwater and surface water use depletions and mitigations (acre-feet).

Year	Upstream of Critical Habitat Reach			Within Critical Habitat Reach			Net effect of permitted activities
	Depletions	Mitigations	Net	Depletions	Mitigations	Net	Total
2006	-9	25	15	-206	4	-202	-187
2007	-25	66	41	-11	15	4	45
2008	-84	180	95	-31	38	7	102
2009	-190	377	187	-60	55	-5	182
2010	-285	522	237	-94	124	30	267
2011	-346	618	272	-125	157	33	304
2012	-393	689	295	-151	179	28	323
2013	-434	745	311	-174	196	21	332
2014	-469	790	322	-194	208	14	337
2015	-499	829	331	-213	219	7	337
2016	-526	862	337	-229	228	-1	336
2017	-549	891	342	-244	236	-8	334
2018	-571	916	345	-258	243	-15	330
2019	-591	938	348	-270	248	-22	326

1.2 Update on other new or expanded water use activities

In addition to the post-2005 permitted activities, the NNDP states that Nebraska will mitigate for various permitted and unpermitted new or expanded water use activities occurring after July 1, 1997. In the 2008 Memo, Nebraska assessed various water use activities (from irrigated acres, human population, and livestock population) between 1997 and 2005 within the COHYST modeled area. Since then, Nebraska has updated the population data for humans and livestock through 2010 and made preliminary estimates of their depletive effects, -500 acre-feet annually due to human population change and -15 acre-feet annually due to livestock population change. The irrigated acres data has not been updated through 2010 and will be as discussed in more detail in section 4 of this report. The estimated depletive effect from the original 1997 to 2005 change in irrigated acres and the updated human and livestock depletive effects are summed in table 2 under “Depletive effect from other activities”.

Nebraska Update on Continued Implementation of
the Nebraska New Depletion Plan (NNDP), January 6, 2012

Table 2. Net effect of permitted activities, and the depletive effect of other activities through 2019 (acre-feet).

Year	Net effect of permitted activities	Depletive effect ¹ from other activities
2012	323	-19,285
2013	332	-19,691
2014	337	-20,002
2015	337	-20,206
2016	336	-20,398
2017	334	-20,804
2018	330	-21,277
2019	326	-21,554

2.0 MITIGATION MEASURES FOR NEW OR EXPANDED WATER USE ACTIVITIES

2.1 Introduction / Background

This section summarizes various mitigation measures that Nebraska has implemented to address the depletive effects described in Section 1. This summary supplements previously reported information and includes a discussion of commitments to implement Water Action Plan projects and other projects for which Nebraska is currently contracting. This section does not include the mitigation measures for new or expanded water use activities permitted between 2006 and 2010 described in Section 1.

2.2 Mitigation Measures Implemented through November 1, 2011

Nebraska has in place the funding and the institutional mechanisms (integrated management plans (IMPs), monitoring protocols, projects, etc.) that provide for implementing mitigation measures, meeting the terms of NNDP and meeting the broader objectives of Nebraska's IMPs. The accretive effect of all mitigation measures described in this section is summarized in table 3.

¹ Human population numbers are from U.S. Census Bureau data, and consumptive use per person is assumed to be 100 gallons per capita/day. Livestock population numbers are estimated from cattle population reported by National Agricultural Statistics Service, and consumptive use is assumed to be 7 gallons/day.

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Table 3. Accretive effect from other mitigation measures through 2019 (acre-feet).

Year	Accretive effect from other mitigation measures
2012	21,427
2013	21,940
2014	38,374
2015	38,567
2016	38,500
2017	38,524
2018	38,605
2019	38,707

Nebraska has several projects in various stages of implementation to provide mitigation for new and expanded uses. Most of the projects are funded through the Platte Basin Habitat Enhancement Project (PBHEP). From 2009-2011, through cash contributions from the NRDs, the Department of Natural Resources (Department) water resources cash fund (WRCF), and a grant from the Nebraska Environmental Trust, PBHEP committed \$15 million to water acquisition, some of which remains to be implemented. A new funding mechanism, the Platte Basin Water Management Action Initiative (Initiative), is intended to replace PBHEP once all the funding from PBHEP is utilized. The Department, via the WRCF, and the NRDs have committed \$16.5 million over the next three-year period to the Initiative.

The Department and the NRDs are retiring water use on irrigated land utilizing several programs in addition to PBHEP. Federal programs include the Agricultural Water Enhancement Program (AWEP), Conservation Reserve Enhancement Program (CREP), and Environmental Quality Incentives Program (EQIP). Enrollment in these programs has resulted in both temporary and permanent retirements of irrigated acres throughout the Platte River Basin (table 4). These retirements reduce the consumptive use of irrigation water and subsequently the amount of streamflow depletion due to those uses. AWEP, CREP, and EQIP have temporarily retired 16,271 acres, retirements which last anywhere from three to 15 years, and they have permanently retired 3,862 acres. Some NRDs have also retired irrigated acres through other conservation easements, which have permanently retired 1,348 acres and temporarily retired 358 acres.

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Table 4. Total acres in various types of irrigation retirement through November 1, 2011.*

	AWEP	CREP	EQIP	PBHEP	Other
Total	4,121	10,718	5,293	2,485	1,706

* A grand total of all acres retired by all these programs are not presented because some acres are enrolled in more than one program. This overlap has been accounted for in the estimate of streamflow accretions resulting from retirements in the "Accretive effect from other mitigation measures" column in tables 3 and 5.

Beyond the permanent retirement of irrigated acres (table 4), PBHEP has approved funding for the North Dry Creek Augmentation Project, Cozad Canal Conjunctive Management Project, and the Thirty-Mile Canal Conjunctive Management Project. According to analysis completed by individual NRDs, these three projects are estimated to supply 16,972 acre-feet of water² annually in the critical habitat reach of the central Platte River.

In 2011, with funding through PBHEP, Nebraska also initiated a groundwater recharge demonstration project that diverted flows of the Platte River in excess of PRRIP target flows. Diverted water was directed into existing canals so that the water would seep through the canals, laterals, and ponds into the groundwater and eventually return to the Platte River. Diversions were made before and after normal irrigation season diversions in 2011. Current diversion data (from before irrigation season only) and analysis estimate that approximately 77,000 acre-feet of excess flow was diverted and about 31,000 acre-feet of the diverted flows seeped into the groundwater system.

In 2008 and 2009, Tri-Basin NRD (TBNRD) contracted with Central Nebraska Public Power and Irrigation District (CNPPID) to divert water from the Platte River into Elwood Reservoir for purposes of increasing groundwater recharge from the reservoir. A total of 9,800 and 2,900 acre-feet of water were diverted in 2008 and 2009, respectively, and were above and beyond normal diversions into the reservoir for irrigation deliveries. These diversions were made from the Platte River when streamflows exceeded target flows or when irrigation deliveries were suspended due to heavy rainfall in the irrigated area of the CNPPID. The recharge to groundwater will provide future accretions to the Platte River.

Nebraska is also working closely with PRRIP and CNPPID to develop the J-2 re-regulating reservoir, a Water Action Plan project. The Department will subcontract with several NRDs who will implement portions of Nebraska's share of the project. Nebraska is committed to providing adequate funding so that approximately one-quarter of the project yield will be for the benefit of Nebraska toward meeting the terms of the NNDP. At this time, one-quarter of the project is estimated to yield 10,200 acre-feet of water annually³, intended to meet Nebraska's commitment to offset new and expanded uses since July 1, 1997.

² North Dry Creek Project yields 972 AF/year (from letter dated October 3, 2011, from John Thorburn, Manager, Tri-Basin NRD to Jim Schneider, Deputy Director, Nebraska Department of Natural Resources).

Cozad Canal yields 8,000 AF/year and Thirty-Mile Canal yields 8,000 AF/year (from letter dated September 20, 2011, from Mark M. Czaplewski, PBHEP Coordinator to Mark Brohman, Executive Director, Nebraska Environmental Trust).

³ Analysis by the Department

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The North Platte NRD (NPNRD) has established regulatory measures designed to meet the mitigation requirements of the NNDP. The regulatory measures put into place an allocation of all groundwater withdrawals within the COHYST 28/40 modeled area in the NPNRD such that, over the long-term, consumptive water use on all groundwater irrigated lands within the area will be reduced by approximately 7% to offset for newly added irrigated acreage subsequent to 1997.

3.0 SUMMARY OF DEPLETIVE ACTIVITIES AND MITIGATION MEASURES

3.1 Net Effect of Depletions and Mitigations Through 2019

Table 5 summarizes the net effect of all activities discussed in Section 1 and all mitigation measures discussed in Section 2. A basic premise of the NNDP is that depletions to the river be offset in time; therefore, Nebraska is reporting depletions and offsets from the current year forward. The results of this preliminary assessment indicate that current and projected mitigation measures exceed the current depletions by approximately 17,000 acre-feet per year at the end of the first increment (2019). Section 4 will further discuss Nebraska's efforts to refine this assessment.

As mentioned at the beginning of Section 2.0, beyond meeting Nebraska's obligations in the NNDP, there are broader IMP objectives the Department and the NRDs are working to attain with the mitigation measures described here. Therefore, the 17,000 acre-feet of estimated mitigation measures in excess of depletive effects are intended to be available to meet Nebraska's own water planning objectives.

Table 5. Net effect through 2019 of depletions and accretions from mitigation measures (acre-feet).

Year	Net effect of permitted activities	Depletive effect ⁴ from other activities	Accretive effect from other mitigation measures	Net effect of permitted and other activities
2012	323	-19,285	21,427	2,466
2013	332	-19,691	21,940	2,582
2014	337	-20,002	38,374	18,707
2015	337	-20,206	38,567	18,697
2016	336	-20,398	38,500	18,437
2017	334	-20,804	38,524	18,054
2018	330	-21,277	38,605	17,658
2019	326	-21,554	38,707	17,478

⁴ Human population numbers are from U.S. Census Bureau data, and consumptive use per person is assumed to be 100 gallons per capita/day. Livestock population numbers are estimated from cattle population reported by National Agricultural Statistics Service, and consumptive use per animal is assumed to be 7 gallons/day.

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4.0 NEBRASKA'S CONTINUED EFFORTS TO REFINE ASSESSMENT METHODOLOGIES

Nebraska continues to develop and refine datasets and modeling tools that will provide for a more comprehensive assessment of the net depletive effects of water use activities since 1997 through two projects, the Western Water Use Modeling (WWUM) project and the COHYST 2010 modeling project. Many of the refinements Nebraska is pursuing have been previously reported⁵, and updates on these activities are summarized in the discussion below. Section 4.1 discusses dataset development and refinement, Section 4.2 provides an update on the status of the modeling tools, and Section 4.3 presents the general process that will utilize the refined datasets and modeling tools.

4.1 Datasets

Several datasets are currently being refined and further developed for inclusion in modeling projects in order to provide a more comprehensive and accurate assessment of the combined effects of depletive and mitigative activities in Nebraska. These datasets, described below, do not include all the datasets that will be incorporated into the modeling projects. When the refined and updated datasets become available, they will be incorporated into the models spatially and temporally.

Irrigated Acres: Both the COHYST 2010 project and WWUM project have nearly completed the development of irrigated acreage datasets. Significant efforts were made by both groups over the past year to refine previous estimates by utilizing newly available information (geospatial certified acreage) and refined methods.

Municipal/Industrial Consumptive Water Use and Rural Domestic Consumptive Water Use: The Department has compiled human population change statistics and completed preliminary assessments of rural and municipal population growth through 2010. The NRDs are compiling information to identify per capita use in their respective municipal public water systems to estimate consumptive use changes due to population growth as well as data from industrial uses in the basin.

Livestock Consumptive Use: The Department has compiled livestock population change statistics and completed a preliminary assessment of the population changes and resulting consumptive use changes through 2010.

Small Reservoirs and Sand Pits: The Department is developing methodology to quantify the change in surface area since 2005 of small reservoirs and sand pits. Once this assessment is completed, changes in consumptive use will be calculated.

⁵ Schellpeper, J.J., 2008. *Nebraska New Depletions Plan Report, Memo to Platte River Governance Committee*, December 2, 2008. 11 pp.; a letter dated December 30, 2010 from Jim Schneider, Deputy Director, Nebraska Department of Natural Resources to Jerry Kenny, Executive Director, Platte River Recovery Implementation Program Governance Committee. Letter includes *Nebraska New Depletion Plan Annual Permit Activity Report* and *Nebraska Update on Bullets 2,4, and 5 under Section IV of the Nebraska New Depletion Plan*; and a memo dated February 218, 2011 from Jim Schneider to the GC dated February 28, 2011, *Overview of the Nebraska New Depletion Plan Implementation Process*.

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Recharge due to Canal Seepage Demonstration Project: The Department has compiled diversion information and developed preliminary seepage estimates from the spring 2011 basin canal recharge project. Additional work is proceeding on compiling this information for the fall 2011 basin canal recharge project.

4.2 Model Refinements

Previous comprehensive assessments by Nebraska focused on the use of modeling tools developed through the COHYST modeling project. This modeling group has now formed two separate modeling groups to implement the Western Water Use Modeling project (for the area upstream of Lake McConaughy) and COHYST 2010 modeling project (for the area downstream of Lake McConaughy to the Loup River confluence). The need for two distinct modeling projects was largely due to differing physical settings and management strategies in the two regions. Below are descriptions of the modeling tools being developed through each of these projects and the current status of the tools.

COHYST 2010 Modeling Tools: The COHYST 2010 suite of modeling tools includes four component tools: 1) watershed (CROPSIM and custom post processing); 2) routing (STELLA); 3) groundwater (MODFLOW); and 4) integrated (CROPSIM, STELLA and MODFLOW together). The CROPSIM tool is fully developed and being utilized to provide inputs for the MODFLOW tool. The MODFLOW tool is currently finishing calibration and documentation. The STELLA tool is also finishing calibration. Node rules are being refined to improve observations matches, and information transfers between the respective component tools are continually updated with any component changes.

Western Water Use Modeling Tools: The Western Water Use suite of modeling tools includes four component tools: 1) watershed (CROPSIM and custom post processing); 2) surface water operation (StateMod); 3) groundwater (MODFLOW); and 4) integrated (CROPSIM, StateMod and MODFLOW together). The CROPSIM tool is fully developed and being utilized to provide inputs for the MODFLOW tool. The MODFLOW tool is nearing completion of the pre-development period and transitioning to calibration of the development period (1953-2010). The StateMod tool is in the beginning phases of the development period calibration. Node rules are being refined to improve observations matches, and information transfers between the respective component tools are continually updated with component changes.

4.3 General Approach for Implementation of Modeling Tools and Datasets

Nebraska is finalizing a guidance document to outline the general process by which a more robust assessment of all water use activities and mitigation measures will be evaluated once datasets are finalized and model tools are completed. This process will provide a means to temporally and spatially refine Nebraska's assessment of the combined effects of depletive activities and mitigation measures summarized in Section 3 above. This approach will utilize integrated groundwater, watershed, and operations models to assess the timing, amount, and location of depletive effects and mitigation measures. Modeling tools will be peer reviewed by independent experts.

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Once all data has been compiled, the model(s) will be populated with compiled data and an assessment will be made of the impacts of new or expanded uses (depletive activities) and all mitigation measures since July 1, 1997 on the streamflow of the Platte River and its tributaries. The assessment will incorporate the effects of all depletive activities and mitigation measures that have been estimated in Sections 1 through 3 of this update.