

Nebraska Update on Bullets 2, 4 and 5 under Section IV
of the Nebraska New Depletion Plan (NNDP)

1. Bullet 2, Section IV NNDP: By December 31, 2010, the state will put into place the measures necessary to offset in amount, timing and location then existing depletions to target flows and to state-protected flows caused by new water uses begun between 1997 and 2005 and/or will indicate the extent to which it intends to rely on water from one or more Program water projects that have not yet been completed.

Nebraska has in place the institutional mechanisms that provide for compliance with the Nebraska New Depletion Plan (NNDP). The mechanisms, Integrated Management Plans (IMPs) and the Platte Basin Habitat Enhancement Program (PBHEP), provide for regulatory and voluntary measures to meet the requirements of the NNDP. An update on each of these mechanisms is given below and each also references pertinent parts of Section V of the NNDP, Tasks Remaining to be Completed.

A. Adopt and Implement IMPs (NNDP Section V.m)

The Department and the North Platte, South Platte, Twin Platte, Central Platte and Tri-Basin NRDs adopted IMPs in September of 2009. Those IMPs encompass the 28% in 40-year lines for the Platte River and its baseflow tributaries. Implementation of the IMPs is an ongoing process, including, but not limited to, the generation of annual reports, an annual basin-wide meeting, monitoring plans, and analysis of progress. Each IMP contains a chapter regarding the overappropriated area, which specifies depletion targets for each year 2009 through 2019, and provides for the evaluation of that NRD's progress toward offsetting those depletion targets. For NRDs that did not have sufficient offset mechanisms in place at the time the IMP was written, the IMP specifies that if a target depletion value is not offset by 2012, the Department and NRD will determine what steps need to be taken to ensure that regulatory actions will be in place by the beginning of the 2014 irrigation season. Regulatory actions that may be chosen range from annual allocations of groundwater use to reductions in irrigated acres and management of crop type. The IMPs also provide for an annual review of progress at meeting the depletion targets and a more robust review that corresponds with the five-year assessment described in bullet #4 of Section IV of the NNDP.

A copy of each IMP and the Basin-Wide Plan can be found at the following website:

http://www.dnr.ne.gov/IWM/docs/IWM_ApprovedPlans.html

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B. Determine what measures will be utilized to offset, in amount, timing and location, the depletions; secure funding and implement the measures (NNDP Section V.h, i)

Nebraska has formed the Platte Basin Habitat Enhancement Program (PBHEP). The five Platte Basin NRDs and the state have jointly committed to contribute \$4,100,000 annually to PBHEP. Additionally, the partners of PBHEP have received monies from the Nebraska Environmental Trust for approximately \$1,000,000 per year for a three-year period to supplement the NRDs and state contributions. One objective of PBHEP is to permanently retire the consumptive use of water so that stream flows are enhanced. In addition, PBHEP provides an institutional mechanism through which the state can provide monies to water action plan type projects. Currently PBHEP is focusing on matching federal dollars in programs such as the Conservation Reserve and Enhancement Program (CREP), Environmental Quality Incentive Program (EQIP), and Agricultural Water Enhancement Program (AWEP). The general purpose of these programs is to permanently or temporarily retire irrigation on tracts of land and converting the use to dryland agriculture, rangeland, pastureland, and/or wildlife habitat for the purpose of reducing water consumption.

Nebraska began the CREP program in 2005. Since that time 10,747 acres have been contracted in the five NRDs and are summarized in table 1. Nebraska is eligible to enroll 50,000 more acres in CREP. To reach more people who are interested in the program, Nebraska has requested a change to expand the area in which acres are eligible. The environmental assessment of this change is to be finalized by the end of January 2011. Various EQIP programs have been implemented by the five Platte Basin NRDs since 2005 and are summarized in table 1. Nebraska received funding for AWEP in the 2010 federal fiscal year and received project approval for five years. For the first year 3,291 acres of land have been contracted in this program. To date, PBHEP has spent \$1,167,239, is processing \$245,194 and has several upcoming projects that are expected to expend the remaining available funds through June 30, 2011.

In cases in which the federal program provides temporary retirement of irrigation, Nebraska has pursued permanent retirement for such tracts. To date approximately 5,750 acres have been permanently retired and the details are reported in table 1.

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Table 1: Acres in various types of irrigation retirement

Acres Retirement Type	Central Platte	North Platte	South Platte	Tri-Basin	Twin Platte	Total
CREP	1,162	7,093	0	1,636	856	10,747
EQIP	0	2,352 ³	977	1,206	0	4,601
AWEP	1,612	1,254	142	0	283	3,291
PBHEP ¹	1,303	0	63	0	0	1,366
Other Retired Acres	1,027	0	66	167 ²	0	1,194
Total	5,059¹	10,699	1,185¹	3,009	1,139	21,198

Notes

- 1 Central Platte Laird Tract: 45 acres in CREP
South Platte Adamson Tract: 62.6 acres in EQIP
- 2 Tri-Basin 73.12 acres permanent retirement, remainder are temporary
- 3 North Platte All acres are for Pumpkin Creek EQIP and are permanently retired

PBHEP funds may also be used in areas where these types of federal programs are not available or where the partners determine that the program goals can be achieved by other water action plan type projects such as the conjunctive management of water and the capture of high flows for later release.

Because this three-year program may not be sufficient to offset the depletions due to the increase in uses subsequent to July 1997, the Platte Basin NRDs and the Department are committed to continuing their respective cash contributions as well as to reapplying to the Nebraska Environmental Trust for continued funding until such time as the post-1997 depletions are fully offset.

Nebraska has created a cash fund in which state and federal agencies or individual operators contribute funds to pay for offsets for new or expanded water activities that result in a depletion to the Platte River. These monies will be spent through the PBHEP.

At the present time, the PRRIP water action plan project studies have moved forward significantly, but a comprehensive comparison of each project's cost-benefit ratio has not been developed; therefore, Nebraska has determined that it is premature to identify the water action projects the state intends to rely on to provide offsets. As the water action plan projects move forward and each project's feasibility, including cost-benefit ratio, is determined, Nebraska will then identify the projects that may be relied upon to supply offsets. Additionally, Nebraska is prepared to contribute funds to the feasibility study of the CNPPID

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J-2 Reservoir, Elm Creek Reservoir (WP-4(a)), the groundwater recharge project (WP-4(b)) and/or a Nebraska Ground Water Management project involving Dry Creek (Tier II WAPP) in order to demonstrate its preparedness to assume its proportionate share of the responsibility to complete the Program projects that could be used to provide offsets for Nebraska. In the meantime, Nebraska will continue moving forward with the PBHEP and looks forward to a time when an assessment of the benefits of the water action plan projects is available.

In parallel efforts to PBHEP, Nebraska is developing management projects beyond those explicitly detailed in the PRRIP Water Action Plan.

North Platte Management Options Plan - In the North Platte River Basin, the Department and NPNRD are conducting a Management Options Plan (MOP) study. MOP is multi-phase project to evaluate potential management options available to meet the goals and objectives of the IMP. Phase I has been completed and Phase II is underway. The purpose of Phase I was to complete an evaluation of potential management options using ranking criteria. The primary criteria categories were implementation, yield, cost, and socioeconomic impacts, with each of the categories having a number of subcategories. The purpose of Phase II is to evaluate the highest ranked options identified in Phase I at a reconnaissance level for legal issues, socioeconomic impacts, capitol and operating costs, and net benefit of water to the river. The four management options being evaluated are: 1) Recharge/Aquifer Storage and Recovery, 2) Surface Water Demand Options (Rotational Fallowing, Leasing, and Permanent Dry-up), 3) Ground Water Demand Options (Rotational Fallowing, Leasing, and Permanent Dry-up), and 4) Conjunctive Management. Phases III and IV of the project will consist of pre-feasibility and feasibility evaluations and eventual implementation of the preferred options. For questions or a copy of the phase I report contact Tina Kurtz with the NPNRD.

Conjunctive Management Demonstration Project - Nebraska is also developing a conceptual design standard for conjunctive management projects. This is a study of a hypothetical project located in the TPNRD and focuses on the necessary steps to evaluate the feasibility of a conjunctive management project (one that would change the operational characteristics of the surface water irrigation district). The final product of this effort will serve as a template for developing and evaluating conjunctive management projects. The report for this project is on schedule to be completed in the near future. When it is available, it will be on the Department website:

<http://www.dnr.ne.gov/docs/studiesandresearch.html>

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2. Bullet 1, Bullet 4 and Bullet 5, Section IV NNDP: 1) Report on new and expanded water use in the COHYST modeled area begun between 1997 and 2005 and the amount, timing and location of any depletions to target flow; 4) Starting in 2010 begin to conduct a new land use inventory and collect other such information as is necessary to assess the sufficiency of the offset measures implemented because of new and expanded uses of surface water and groundwater subject to the NNDP; 5) Report on the results of the 2010 assessment by January 2012.

A. Refinement of COHYST, Change in Irrigated Acres, Municipal, Industrial, and Other New Uses from 1997 to the Current Analysis and Resulting Amount, Location and Timing of Depletions (NNDP Section V.a – d, g, j, k, l)

Nebraska has begun the 2010 assessment described in Bullet 4 of the NNDP. To facilitate the assessment, COHYST and the post-1997 depletions continue to be refined. The coalition of interested parties is developing a modeling tool that meets the needs of the local hydrology and management system. Currently there are two project efforts moving forward. In the western portion of the basin, the NPNRD, SPNRD and DNR have formed the Western Water Use Management Joint Board. This project will enhance the western unit of the COHYST model and develop a surface water operations model so that this area can closely examine the way in which ground water options affect surface water operations and vice versa. In the central and eastern portions of the basin the group has reformed as COHYST 2010. This project is enhancing the central and eastern units of the original COHYST model and adding a watershed model and surface water operations model to the suite of modeling tools. The intent of each of these efforts is to have the modeling tools in place to conduct the 2010 assessment of the sufficiency of the implemented offset measures to mitigate for the new uses. All final COHYST documents can be found at the following website:

http://cohyst.dnr.ne.gov/cohyst_preliminarydata.html

Presentations on COHYST 2010 can be found at the following website:

http://www.dnr.ne.gov/IWM/docs/IWM_Presentations-Modeling.html

Irrigated Acres:

Current work under both projects includes a review of all data inputs previously developed by COHYST. To date, the review of irrigated acres data suggests there were some errors in the original construction of that input data set; a more rigorous review of that data is currently under way. Any final changes in this data set will be reported to the Governance Committee along with a report to describe the changes and why the changes were made. For the 2010 assessment, irrigated acres data are being developed from 1950 through 2010.

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Municipal, Industrial and Other Uses:

The two modeling projects will also examine how municipal, industrial, and livestock uses can best be incorporated into the models to show how, on a cumulative basis, Nebraska is able to sufficiently mitigate for new uses. Ongoing work to track municipal and industrial uses is described in the newly adopted IMPs.

Other uses, defined as sandpits and small reservoirs that do not require a surface water permit, will be tracked. This includes structures that may be issued an Department dam safety permit. As a baseline condition for other uses, Nebraska has conducted an inventory of such uses from aerial photography in the year 2005. Post-2005 changes in sandpits and reservoirs under 15 AF in size will be monitored by conducting a new inventory every five years starting in 2010. Every five years thereafter, Nebraska will begin to conduct an inventory of new rural domestic, livestock, sandpit, and reservoir water uses¹.

An analysis of the amount, timing and location of any depletion to the Platte River or a base flow tributary because of changes in irrigated acres, municipal, industrial or livestock uses post-1997 to 2010 will be completed once the two modeling projects have developed the appropriate tools. Model analysis will include runs to differentiate between activities occurring inside of the Platte River Basin and inside the 28% in 40 year lines and activities outside of that area, but in the modeled area.

B. Tracking System to Route Depletions, (NNDP Section V.f)

The two modeling projects, WWU and COHYST 2010, will have the ability to route flows in all areas of the Platte River Basin upstream of Chapman and within Nebraska. Until such time as these modeling tools are available, Nebraska will continue to plan to provide offsets in the same location where the depletion occurs.

¹ One of the uses for which a dam safety permit is issued is livestock waste retention reservoir. For the period 2006 – 2009 the Department issued 11 dam safety permits for the purpose of livestock waste retention. The facilities will be tracked as described in the IMPs and will be part of the modeling efforts.

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C. State Protected Flows (NNDP Section V.e)

One approach to the determination of state-protected flows is examined in a new study provided by the Department to evaluate the availability of historical “natural flow” in excess of state-protected flows and target flows. This project takes a conservative approach to estimate the quantity of state protected flows in several reaches of the Platte River from Colorado on the South Platte and Lake McConaughy on the North Platte downstream to Odessa. While this project provides one estimate of state protected flow, it does not provide a definitive value for state protected flows by reach and time period. In fact, determining a single definitive flow value by reach and time period as a state protected flow would not reflect the true nature and legally defined structure of Nebraska’s surface water appropriation system. The system fluctuates depending upon many factors such as crop rotation, changes in the efficiencies of delivery systems, the availability of alternative sources of water, weather patterns (long and short term), power availability, etc. The report Evaluation of Historic Streamflow in Excess of State Protected Flows and Target Flows will be available by January 3, 2011, on the NDNR website:

http://www.dnr.ne.gov/IWM/docs/IWM_TechnicalReports.html

Or available now at this ftp site:

<ftp://ftp.dnr.ne.gov/Pub/NorthPlatte/Report/>