

INTEGRATED MANAGEMENT PLAN  
Jointly Developed by the  
DEPARTMENT OF NATURAL RESOURCES  
and the  
UPPER REPUBLICAN NATURAL RESOURCES DISTRICT

**I. AUTHORITY**

This Integrated Management Plan (IMP) was prepared by the Board of Directors for the Upper Republican Natural Resources District (URNRD) and the Nebraska Department of Natural Resources (NDNR) in accordance with the Nebraska Ground Water Management and Protection Act, *Neb. Rev. Stat.* §§ 46-701 to 46-753 (Reissue 2004).

**II. BACKGROUND**

Commencing in 1978, the URNRD has adopted and enforced rules and regulations for the purpose of managing the ground water resources within the URNRD. On April 11, 2003, effective May 8, 2003, the URNRD, pursuant to applicable statutory rulemaking procedures and *Neb. Rev. Stat.* § 46-656.25 (Reissue 1998), adopted the *State of Nebraska Upper Republican Natural Resources District Amendments to Rules and Regulations for Ground Water Control – Order No. 26* and the *Upper Republican Natural Resources District Technical Manual of Policies and Procedures TM-26* (the “URNRD Rules” or “the Rules”). In the regular meeting, on July 6, 2004, the URNRD voted to extend Order No. 26 until September 1, 2005. Rule 9A of the Rules provides for a basic allocation of ground water to certified irrigated acres within the URNRD of 72.5 acre-inches for the five (5) year period between January 1, 2003 and December 31, 2007, an annualized allocation of 14.5 acre-inches. Since their adoption, the Rules have prohibited additional allocations for ground water use and additional well permits, except under limited circumstances. In addition, among other things, the Rules continued and recodified the URNRD’s practice of allowing ground water users to carry forward the unused portion of their allocation, together with any remaining unused portions of allocations from previous years, into succeeding allocation periods and permitted the URNRD to approve pooling contracts, both in accordance with the URNRD Rules.

In 1943 the States of Colorado, Kansas and Nebraska entered into the Republican River Compact (the “Compact”) with the approval of the United States Congress. The Compact provides for the allocation of the “virgin water supply” of the Republican River Basin (the “Basin”) between the three States. Following several years of dispute about Nebraska’s consumptive use of water within the Basin, Kansas filed an original action in the United States Supreme Court against the States of Nebraska and Colorado in 1998, seeking, among other things, to include ground water in the calculation of the virgin water supply and consumptive use. The United States Supreme Court appointed a Special Master who recommended that the depletions to stream flow from the use of ground water must be included in the virgin water supply and be part of the calculation of each State’s beneficial consumptive use. The United

States Supreme Court adopted the Special Master's recommendation. Subsequent to this determination, the States entered into a Settlement Agreement resolving the remaining issues in the case. The Settlement Agreement was approved by the United States Supreme Court on May 19, 2003.

Both prior and subsequent to the approval of the Settlement Agreement, the NDNR conducted and participated in several meetings with the URNRD, including several public meetings. During the course of those meetings the NDNR explained, in order for the State of Nebraska to achieve and maintain compliance with the terms of the Settlement Agreement, it would be necessary to (1) continue the moratorium on new surface water appropriations and new ground water wells, (2) reduce all ground water pumpage from historic levels across the entire Basin and (3) further reduce ground water pumping needed to comply with the Compact in water short years, to be accomplished to the extent possible through the use of incentive programs to reduce consumptive use of water. Ground water within the Basin is regulated by four Natural Resource Districts: the URNRD, the Middle Republican Natural Resources District (MRNRD) and the Lower Republican Natural Resources District (LRNRD) and the Tri-Basin Natural Resources District (the "Tri-Basin") (collectively hereinafter the "Districts"). Similar discussions were held between the NDNR and each of the Districts regarding the need (1) to accurately measure actual ground water pumpage and surface water diversions throughout the Basin and within each District, (2) for the Tri-Basin to maintain, at sufficient levels to offset depletions to the Republican River caused by ground water pumping within the Republican River Compact area within the Tri-Basin, the Compact Imported Water Supply that Nebraska receives because of discharges from the "ground water mound"; and, 3) for each of the Districts other than the Tri-Basin to reduce its ground water pumping from their 1998-2002 baseline pumping volumes, as defined below.

Since 1978, with adoption of its Order #1, the URNRD has required the metering, data collection and reporting of ground water use, resulting in actual pumping and use data, and has imposed allocations and regulation on ground water users within the URNRD, while the use of wells in the MRNRD and LRNRD were neither reported nor regulated during the same period. In order to estimate pumping in the MRNRD and LRNRD, other methods based on hours of operation using electrical power information and individual pumping rates were used. The NDNR has determined the following pumping volumes for the period 1998-2002: 531,763 acre-feet for the URNRD, 309,479 acre-feet for the MRNRD and 242,289 acre-feet for the LRNRD. These pumping volumes are used throughout this IMP and are referenced as the "1998-2002 baseline pumping volumes." NDNR, through the use of the Republican River Compact Administration Ground Water Model, has also determined each District's depletions to stream flow for the period 1998-2002 ("1998-2002 baseline depletion"): 74,161 acre-feet for the URNRD, 52,168 acre-feet for the MRNRD and 43,954 acre-feet for the LRNRD. Those depletion numbers have resulted in the following depletion proportions: 44% for the URNRD, 30% for the MRNRD and 26% for the LRNRD. These depletion proportions are used throughout this IMP and are referenced as the "1998-2002 baseline depletion proportions." The percentage of allowable ground water depletions for each Republican River District were based on the proportion of the average ground water depletions caused by ground water pumping within each District that occurred during the base-line period from 1998-2002 as determined by model runs of the Republican River Compact Administration Ground Water Model with ground water pumping in each District alternated turned off and then on. The pumping volumes used to

make these determinations will be evaluated within the next five years to determine their accuracy as compared with metered pumping volumes. If the baseline pumping volumes are found to be in error, the pumping volumes for the 1998-2002 period will be revised and the percentage of depletions for this period will be readjusted based on the new pumping volumes.

The URNRD and the NDNR adopted an integrated management plan on May 3<sup>rd</sup>, 2005, that contained groundwater rules and regulations for the 2005-2007 period. The integrated management plan provided for a groundwater allocation of 13.5 inches per certified acre, continued the pooling of allocations, and the carry forward of unused allocations, among other things. The goal of the 2005 integrated management plan was to reduce water use by 5% from the 1998-2002 baseline. Since that time, efforts have been taken to implement or conduct incentive programs, studies, and research to further our understanding and ability to comply with the Republican River Compact and Settlement. The URNRD and the NDNR wish to adopt and implement a revised IMP for the regulation of water resources within the District as required by the laws of the State of Nebraska.

The URNRD has agreed to meet its responsibility under *Neb. Rev. Stat. §46-715*, including meeting the obligations under the Settlement Agreement, by adopting revised rules to implement the integrated management plan with regulations and other augmentation programs sufficient to reduce the URNRD's depletions to streamflow to meet the District's proportional share of the requirements of the Republican River Settlement Agreement. To ensure each District within the Republican River Basin will be treated equally, the NDNR has agreed not to approve any plan, unless the plan would restrict the use of water by each District to within the allocation granted to it as determined by the 1998-2002 baseline pumping volumes and that each District shall be assigned its proportionate share of streamflow depletion as calculated by the 1998-2002 baseline depletion percentages. NDNR agrees the failure of any District to adopt, implement or enforce IMPs adequate to meet their proportionate share of the responsibility to achieve and maintain Nebraska's compliance with the Compact shall not in itself require any additional action by the other Districts.

The NRD and the NDNR agree that the IMP for the District shall keep the District's depletions including credits for streamflow augmentation to an amount within 44% of the State's allowable ground water depletions. Based upon its calculations, the NDNR believes that a 20% reduction in pumping from the 98-02 baseline would be sufficient without additional streamflow augmentation to keep the District's net depletions within the URNRD's 44% share of the State's allowable ground water depletions during periods of average precipitation throughout the basin, through the year 2020.

### **III. DEFINITIONS**

**A. Allowable Ground Water Depletions** - the maximum level of depletions to streamflow from ground water pumping within the Republican River Compact area that can be allowed without exceeding the Compact allocation.

**B. Allowable Ground Water Depletions for the URNRD** - the depletions to stream flow from ground water pumping in the URNRD that are no greater than 44% of the total allowable ground water depletions.

**C. Allowable Streamflow Depletions** - the maximum amount of streamflow depletion in the Republican River Basin that can be allowed without violating the Compact.

**D. Baseline Depletion Percentages** - the annual mean depletions to stream flow in the Republican River Basin caused by surface water and ground water use in the years 1998-2002 inclusive. The baseline depletions are 74,161 acre feet for the URNRD, 52,168 acre feet for the MRNRD, and 43,954 acre feet for the LRNRD. The percentage depletions assigned to the Districts are: URNRD, 44%; MRNRD, 30%; and LRNRD, 26%.

**E. Baseline Pumping Volumes** - the annual mean ground water pumping from the period 1998 to 2002. The baseline pumping volumes are 531,763 acre-feet for the URNRD, 309,479 acre-feet for the MRNRD and 242,289 acre-feet for the LRNRD .

**F. Compliance Standard** - the criteria that will be used to determine whether URNRD's rules, regulations, and other programs are sufficient to meet the goals and objectives of this IMP pertaining to pumping volumes and depletions.

**G. Net Depletions** - a District's ground water depletions less any reduction in streamflow depletions or increase in allocation resulting from streamflow augmentation projects, including surface water leases.

#### **IV. GOALS AND OBJECTIVES**

Pursuant to *Neb. Rev. Stat. § 46-715* (Reissue 2004), the goals and objectives of this IMP must have as a purpose "sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the river basin ... can be achieved and maintained for both the near term and the long term." The following goals and objectives are also adopted by the URNRD and the NDNR to meet the additional requirements of *Neb. Rev. Stat. §46-715*.

##### **A. Goals:**

1. In cooperation with the State of Nebraska and the other Districts, maintain compliance with the Compact as adopted in 1943 and as implemented in accordance with the Settlement Agreement approved by the United States Supreme Court on May 19, 2003;

2. Ensure that water users within the URNRD assume their share, but only their share, of the responsibility to maintain compliance with the Compact;
3. Provide the URNRD's share of compliance responsibility and impact be apportioned within the URNRD in an equitable manner and to the extent possible, minimize the adverse economic, social and environmental consequences arising from compliance activities.;
4. Protect ground water users whose water wells are dependent on recharge from the river or stream and the surface water appropriators on such river or stream from streamflow depletions caused by surface water uses and ground water uses begun after the date the river basin was designated as fully appropriated; and
5. Reserve any streamflow available from regulation, incentive programs, and purchased or leased surface water required to maintain compact compliance from any use that would negate the benefit of such regulations or programs.

**B. Objectives:**

1. With limited exceptions, prevent the initiation of new or expanded uses of water that increase Nebraska's computed beneficial consumptive use of water within the URNRD, as required for Compact compliance and by Nebraska law
2. Ensure administration of surface water appropriations in the Basin is in accordance with the Compact and Nebraska law;
3. Reduce existing ground water use within the URNRD by 20% from the 1998-2002 baseline pumping volumes under average precipitation conditions so that, when combined with streamflow augmentation and incentive programs, the URNRD's depletions are maintained within 44% of Nebraska's allowable ground water depletions as computed through use of the Republican River Compact Administration Ground Water Model;
4. After taking into account any reduction in beneficial consumptive use achieved through basin-wide incentive and streamflow augmentation programs, make such additional reductions in ground water use in water short years as are necessary to achieve a reduction in beneficial consumptive use in the URNRD in an amount proportionate to the total reduction in consumptive use required by the Republican River Settlement Agreement in Nebraska above Guide Rock in such years;
5. Cause the reductions in water use required for Compact compliance to be achieved through a combination of regulatory, incentive, and augmentation programs designed to reduce beneficial consumptive use, relying on incentive programs available to as many of the URNRD water users as possible;
6. Cooperate with the NDNR to investigate and explore methods to manage the impact of vegetative growth on stream flow: and

7. Develop a program to provide offsets for new consumptive uses of water so that economic development in the district may continue without producing an overall increase in ground water depletions as a result of new uses.

#### **V. MAP - see map 1.**

The area subject to this IMP is the geographic area within the boundaries of the URNRD.

#### **VI. FORECAST OF MAXIMUM AMOUNT OF WATER THAT MAY BE AVAILABLE FROM STREAMFLOW DEPLETIONS**

Each year in compliance with *Neb. Rev. Stat. § 46-715(5)* the NDNR in consultation with the Republican River NRDs shall forecast the maximum amount of water that may be available from streamflow for beneficial use in the short term and long term to comply with the Compact. This forecast will be used to assist the NDNR and the NRDs in ensuring compliance with the Compact.

#### **VII. GROUND WATER CONTROLS**

The URNRD will utilize the ground water controls as provided by *NEB.REV.STAT. §§ 46-715, 46-739 and 46-740* to form the Ground Water Controls component of this IMP. The controls that the NDNR and URNRD agree are necessary and shall be continued are: 1) groundwater allocations and 2) a moratorium on new water wells and irrigated acre as are required by the RRSA. In order to provide the URNRD flexibility in addressing compliance, the URNRD may implement a reduction in irrigated acres and incentive programs targeting acres with a higher streamflow depletion factor as alternatives to District-wide reductions in allocation or irrigated acres. The controls shall be set forth in detail and implemented through the URNRD's Rules and Regulations and the provisions of the URNRD's Rules and Regulations shall be sufficient so as to meet the Compliance Standards set forth below. If it is determined by NDNR and the URNRD that all of the Districts in the basin have met their proportional share of responsibility, but Nebraska is nonetheless out of compliance with the RRSA, further reductions in net depletions will be necessary. Any further reduction in net depletions will be based on the same proportions as contained in the 1998-2002 baseline depletion percentages.

In addition to satisfying the compliance standards, the rules and regulations adopted by the URNRD shall contain provisions which adequately assure that no new ground water uses initiated after July 14, 2004, will adversely impact surface water appropriators or ground water users whose water wells are dependent upon recharge from the stream or river. If the Compliance Standards are met, the URNRD may amend or modify its rules and regulations without the approval of NDNR, except for the rules and regulations pertaining to the satisfaction of the requirements of *NEB.REV.STAT. §46-715(3)(b)* and *46-715(3)(c)*. In the event the Compliance Standards are not met, URNRD, with the assistance of NDNR, shall formulate adequate rules

and regulations, acceptable to NDNR, to meet the Compliance Standards. The necessary revisions to the rules and regulations shall place the District in a position where it meets the Compliance Standards within one (1) year from the date of determination the State is not in compliance with the RRSA, or within two (2) years from the date of determination the District has failed to meet the Compliance Standards, but the State is in compliance with the RRSA.

### **VIII. COMPLIANCE STANDARDS**

1. PURPOSE. These Compliance Standards are established by NDNR and URNRD to assess whether the course of action taken by the URNRD, with the intention of providing their proportionate share of assistance to the State in order for the State to maintain compliance with the RRSA and Compact, are sufficient. The action taken by the URNRD shall be evaluated in connection with the action taken by the other Districts in the Republican River Basin and any other relevant considerations, including the information and data provided by NDNR and past action by the District.

2. DURATION. These Compliance Standards shall be used to assess the action taken by the URNRD commencing January 1, 2008 through January 1, 2013. Prior to January 1, 2013 the NDNR and URNRD shall reexamine the sufficiency and effectiveness of the Compliance Standards to determine if amendments or revisions are necessary to ensure the State's compliance with the RRSA and Compact. Nothing contained herein shall prohibit or preclude any amendment or revision, at anytime, by the NDNR and URNRD, when such action is necessary under the circumstances. Further, nothing contained in this subsection shall be construed as eliminating the review of the provisions of this IMP as required by *NEB.REV.STAT.* §46-715.

3. STANDARDS. The URNRD shall adopt and implement rules and regulations which shall provide that the following standards are met.

- A. Provide for a 20% reduction in pumping from the 1998-2002 baseline ground water pumping volume so that the average ground water pumping volume is no greater than 425,000 acre feet over the long term. It is understood that if precipitation is lower than average for any given year, the ground water pumping volume for that year may be above 425,000 acre feet provided that Standard B is met. If incentive or augmentation programs are implemented so that on average stream flow is increased, the ground water pumping volume may be increased above the 425,000 acre feet by an amount that would cause streamflow depletions equivalent to the increased streamflow resulting from the incentive and augmentation programs as determined by the RRCAGWM.
- B. Provide the URNRD's net depletions shall be no greater than 44% of the allowable ground water depletions as determined by the accounting by the RRCAGWM.

The procedures for determining whether the compliance standards are met will be based on the RRSA and the baseline ground water pumping volumes.

## **IX. SURFACE WATER CONTROLS – Nebraska Department of Natural Resources (NDNR)**

The authority for the surface water component of this IMP is *Neb. Rev. Stat.* §§ 46-715 and 46-716 (Reissue 2004). The surface water controls that will be continued and/or begun by the NDNR are as follows:

1. The NDNR will do the following additional surface water administration as required by the Settlement Agreement:
  - To provide for regulation of natural flow between Harlan County Lake and Superior-Courtland Diversion Dam, Nebraska will recognize a priority date of February 26, 1948 for Kansas Bostwick Irrigation District, the same priority date as the priority date held by the Nebraska Bostwick Irrigation District's Courtland Canal water right.
  - When water is needed for diversion at Guide Rock and the projected or actual irrigation supply is less than 130,000 acre-feet of storage available for use from Harlan County Lake as determined by the Bureau of Reclamation using the methodology described in Harlan County Lake Operation Consensus Plan attached as Appendix K to the Settlement Agreement, Nebraska will close junior, and require compliance with senior, natural flow diversions of surface water between Harlan County Lake and Guide Rock.
  - Nebraska will protect storage water released from Harlan County Lake for delivery at Guide Rock from surface water diversions.
  - Nebraska, in concert with Kansas and in collaboration with the United States, and in the manner described in Appendix L to the Settlement Agreement, will take actions to minimize the bypass flows at Superior-Courtland Diversion Dam.
2. Metering of all surface water diversions at the point of diversion from the stream will continue to be required. For surface water canals that are not part of a Bureau of Reclamation project, farm turnouts will be required to install and maintain a NDNR approved measuring device by the start of the 2005 irrigation season. All measuring devices shall meet the NDNR standards for installation, accuracy and maintenance. All appropriators will be monitored to ensure that neither the rate of diversion nor the annual amount diverted exceeds that allowed by the applicable permit or by statute.
3. The NDNR's moratorium on the issuance of new surface water permits was made formal by Order of the Director dated July 14, 2004. Exceptions may be granted by the NDNR to the extent permitted by *Neb. Rev. Stat.* § 46-714(3) (Reissue 2004) or to allow issuance of permits for existing reservoirs that currently do not now have such



- permits. Such reservoirs are limited to those identified through the Settlement Agreement required inventory of reservoirs with over 15 acre-feet capacity.
4. All proposed transfers of surface water rights shall be subject to the criteria for such transfers as found in *Neb. Rev. Stat.* §§ 46-290 to 46-294.04 (Reissue 2004) and related NDNR rules or the criteria found in *Neb. Rev. Stat.* §§ 46-2,120 to 46-2,130 (Reissue 2004) and related NDNR rules.
  5. The NDNR completed adjudication of individual appropriators in the Republican River Basin upstream of Guide Rock in 2004. The results of that adjudication provided up-to-date records of the number and location of acres irrigated with surface water by such appropriators. Those records shall be used by the NDNR to monitor use of surface water and to make sure that unauthorized irrigation is not occurring. The NDNR will also be proactive in initiating subsequent adjudications whenever information available to the NDNR indicates the need for adjudication as outlined by state statutes.
  6. At this time, due to the already limited availability of surface water supplies, the NDNR will not require that surface water appropriators apply or utilize additional conservation measures or that they be subject to other new restrictions on surface water use, except as may be necessary to meet the goals and objectives of this plan and to maintain compliance with the compact.
  7. The Department also reserves the right to request, in the future, that this IMP be modified to require any such additional measures. In the event such a request is made, the NDNR will “allow the affected surface water appropriators and surface water project sponsors a reasonable amount of time, not to exceed one hundred eighty (180) days, unless extended by the NDNR, to identify the conservation measures to be applied or utilized, to develop a schedule for such application and utilization, and to comment on any other proposed restrictions.” *Neb. Rev. Stat.* § 46-716(2) (Reissue 2004).

## **X. AUGMENTATION AND INCENTIVE PROGRAMS**

Subject to the provisions of paragraph 5 under “Ground Water Regulations,” above, the URNRD and the NDNR intend to develop augmentation projects and to establish and implement financial or other incentive programs to reduce beneficial consumptive use of water within the URNRD. As a condition for participation in an incentive program, water users, landowners or the URNRD may be required to enter into and perform such agreements or covenants concerning the use of land or water as are necessary to produce the benefits for which the incentive program is established. Such incentive programs may include, but shall not be limited to, any program authorized by state law and/or Federal programs operated by the United States Department of Agriculture.

Any water savings generated through conservation programs, including acreage retirement or other conservation incentive programs undertaken through programs available throughout the Republican River Basin with the use of funds distributed by the State of Nebraska or the United States Government will be accounted as credits to the entire Republican River Basin and not to any District, regardless of the location or other conditions of the acreage included in the program or of the location of the effect of such water savings on the river system. Any water savings resulting from any such basin-wide programs shall be considered in the calculation of each District's depletions allocated to each of the Districts based upon the 1998-2002 baseline depletion proportions. However, should any District establish, fund, and implement its own such conservation program, the accounting of credit for the resulting water savings shall be given exclusively to that District. Also, if multiple Districts cooperate in a stream flow augmentation project, the benefits shall be allocated to each District based upon their share of the cost of the program.

## **XI. REPORTING REQUIREMENTS**

The URNRD and the NDNR will make all documents, reports, records, computer runs or other calculations or material necessary to determine compliance with the Compact available to each other, regardless of whether such documents are available under the Nebraska Public Records Act or otherwise, unless such materials are identified as confidential under Nebraska statutes or by a ruling of a court of competent jurisdiction. Specifically, and without limitation, the URNRD agrees to continue to provide any existing GIS coverage maps of all lands irrigated and to meter, record and provide to the NDNR its ground water usage records in a manner consistent with the requirements of the Republican River Compact Accounting Procedures; this information will be for each irrigation season and provided to NDNR by March 1 of the following year. The NDNR agrees to provide to the URNRD all reports and records of the other Districts necessary to determine their compliance with reductions in accordance with the formula described above, as well as all documentation and reports utilized by the NDNR to determine the Basin's virgin water supplies and Nebraska's compliance with the Compact. In the event any materials are withheld by either NDNR or URNRD under a claim of statutory confidentiality, the party withholding such materials shall describe the contents of the materials and reasons for the denial in accordance with *Neb. Rev. Stat. § 84-712.04* (Reissue 1999).

## **XII. PLAN TO GATHER AND EVALUATE DATA, INFORMATION AND METHODOLOGIES**

The DNR and the URNRD shall develop a plan to gather and evaluate data, information, and methodologies that could be used to implement Neb.Rev.Stat. Sections 46-715 to 46-717, increase understanding of the surface water and hydrologically connected ground water system, and test the validity of the conclusions and information upon which the integrated management plan is based.

### **XIII. INFORMATION CONSIDERED**

Information used in the preparation and to be used in the implementation of this IMP can be found in the simulation runs of the Republican River Compact Administration Ground Water Model, the formulae and data compliance tables of the Final Settlement Stipulation for the Compact, the URNRD's Rules, the URNRD's Ground Water Management Plan and additional data on file with the URNRD or the NDNR.

Map 1. Upper Republican Natural Resource District

## Upper Republican NRD

