

INTEGRATED MANAGEMENT PLAN
Jointly Developed by the
Twin Platte Natural Resources District
and the
Nebraska Department of Natural Resources

CHAPTER 1: EFFECTIVE DATE

- I. This Integrated Management Plan (IMP) was adopted by the Twin Platte Natural Resources District (“TPNRD” or “District”) on August 13, 2009, and by the Nebraska Department of Natural Resources (Department) on August ??, 2009.
- II. This IMP became effective on September 15, 2009.

CHAPTER 2: AUTHORITY

- I. This IMP was prepared by the Board of Directors of the TPNRD and the Department in consultation and collaboration with the TPNRD Stakeholders Group in accordance with Neb. Rev. Stat. §§ 46-715, 46-716, 46-717, 46-718, and 46-720.

CHAPTER 3: BACKGROUND

- I. In 1993, the Department (then the Department of Water Resources) imposed a moratorium on the issuance of new surface water appropriations in the Platte River Basin upstream of Columbus, Nebraska. An additional automatic stay on the issuance of new surface water appropriations and on the use of existing appropriations to increase irrigated acres took effect in accordance with Neb. Rev. Stat. § 46-714 on September 30, 2004.
- II. Prior to the enactment of LB 962 in 2004, the TPNRD had realized the need to regulate the use of ground water. In December of 2003, the TPNRD requested for the Department to conduct studies and to hold a hearing on the preparation of a joint action plan for the integrated management of hydrologically connected ground water and surface water within the District. On February 12, 2004, the TPNRD adopted Rules and Regulations for the “Temporary Suspension of Drilling New Wells” within a specifically-defined portion of the District. That “Temporary Suspension,” which took effect on July 1, 2004, applied to those lands within the then defined stream depletion factor line representing a cumulative depletion to stream baseflow of 28% of a hypothetical pumping volume in a 40-year period (the “28/40 area”).
- III. On July 16, 2004, when LB 962 took effect, and pursuant to Neb. Rev. Stat. § 46-720, the Department issued a notice of preliminary determination that the TPNRD was fully appropriated. That determination continued the stay on the drilling of new ground water wells in that part of the TPNRD previously subject to the “Temporary Suspension,” and added a stay on new irrigated acres.

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IV. On September 15, 2004, the director of the Department designated the Platte River Basin above the Kearney Canal diversion as “overappropriated,” and identified the area in which the surface water and ground water are considered to be “hydrologically connected” for purposes of the overappropriated designation. That area coincided with the 28/40 area. As a result of that designation, additional land area within the TPNRD became subject to stays on new wells and stays on increases in irrigated acres.

V. On September 30, 2004, the director of the Department designated the entire TPNRD as “fully appropriated.” As required by Neb. Rev. Stat. § 46-720 (3) (b), stays on new wells and stays on increases in irrigated acres were limited to that area within the District that was specifically designated as overappropriated.

VI. In January 2006, the board of the TPNRD approved a Ground Water Management Area for the entire District, which approval became effective on February 24, 2006. The Ground Water Management Area imposed a stay on the issuance of high capacity water well construction permits for the entire TPNRD. On May 17, 2007, the board of the TPNRD adopted a district-wide stay on the use of an existing water well to increase the number of acres historically irrigated, which stay became effective on June 18, 2007.

VII. On March 29, 2005, the TPNRD formed the TPNRD Stakeholders Group, which has been meeting monthly since that time to assist in developing the IMP.

CHAPTER 4: MAP AND MANAGEMENT AREA BOUNDARIES

I. The area subject to this IMP is the entire geographic area of the TPNRD, including the area within the boundaries of the TPNRD determined to be fully appropriated (map 1) and the area designated as overappropriated (map 2). The stratigraphic boundaries subject to this IMP include all sediments from ground level downward through all aquifer units.

II. The goals, objectives, and action items described in the “Fully Appropriated” Section” of this IMP are intended to apply to the entirety of the District (map 1); whereas, the goals, objectives, and action items described in the “Overappropriated Area and Nebraska New Depletion Plan” Section of this IMP are intended to apply only to that portion of the District that has been designated as overappropriated (map 2).

CHAPTER 5: FULLY APPROPRIATED PORTION OF THE IMP

I. GOALS AND OBJECTIVES

A. Vision Statement

1. Manage water resources in the TPNRD in a manner to balance water use and water supply while optimizing economic, social, and environmental benefits for the near and long term.

B. Goals

1. Protect to the extent possible existing users, local economy, environmental health, and recreational uses.
2. Manage total water supply in the TPNRD to achieve sustainability of supply and use while allowing for growth and changes in use.
3. Recognize there are multiple causes of streamflow depletion and to the extent possible distribute mitigation responsibilities appropriately.

C. Objectives

1. Provide for educational programs related to integrated water management for the TPNRD.
2. Allow for water banking and transfers.
3. Explore new sources of water and currently used water for offsets, such as unappropriated river flows and transfers of existing water appropriations or certified ground water uses.
4. Ensure that no act or omission of the TPNRD will cause the state to be in noncompliance with applicable state and federal laws and with any applicable interstate water compact or decree or other formal state contract or agreement pertaining to surface water or ground water use or supplies.

II. PLAN COMPONENTS

A. Action Items to Achieve Goals and Objectives

1. The action items described in this section are intended to be consistent with the requirements of Neb. Rev. Stat. § 46-715(3).

B. Non-Regulatory Action Items

1. Information and Education Programs

(a) The TPNRD and the Department will provide educational materials to the public and/or carry out educational activities that may include, but not be limited to, the following: the fully appropriated determination, the overappropriated designation, the IMP, the Nebraska New Depletion Plan (NDP), the Platte River Recovery and Implementation Program (PRRIP), hydrologically connected ground water and surface water, invasive species management, conversion of irrigated acres to dryland agriculture or wildlife habitat, limited irrigation cropping systems, soil residue and tillage management, alternative crops, and funding sources for programs that enhance water supply.

(b) These educational materials and/or activities may include, but not be limited to, joint public meetings, pamphlets, and website information.

2. Water Banking

(a) The TPNRD will establish a water bank. The TPNRD will purchase or otherwise acquire certified ground water irrigated acres or other ground water uses or surface water use appropriations. The TPNRD will hold the water in its water bank for the purposes of:

(1) offsetting new or expanded consumptive uses;

(2) saving water to meet statutory requirements or interstate agreement obligations;

(3) saving water to meet future incremental targets toward achieving a fully appropriated condition; or

(4) future sales to individuals as offsets for development of new consumptive uses of ground water within the TPNRD.

(b) The TPNRD and the Department will agree on the best available tools to use for calculating the amount of accretions to the stream that will be placed into the water bank from acquired water or surface water uses (i.e. the bankable volume of water). The calculations used to determine the accretions to be put into the water bank will consider the impact to streamflows through at least a fifty (50) year period, and will be consistent with the methods used to evaluate transfers as described in Chapter 5 subsection II.C.3 of this IMP. These calculations will also establish the timing and location of streamflow changes, and any impacts to existing ground water or surface water users.

(c) The TPNRD will contact the Department prior to purchasing or acquiring surface water appropriations for deposit in the water bank. The Department will

conduct a field investigation of the surface water appropriation and notify the TPNRD of the results of that investigation within 90 days. The TPNRD will work collaboratively with the Department in performing the analysis to evaluate the bankable volume of water resulting from the retirement of the surface water appropriation. The TPNRD will follow the appropriate statutes and rules and regulations of the Department for approval if the surface water appropriation is to be transferred to another use.

(d) The TPNRD will obtain and maintain permanent easements, lease agreements or other agreements on all property from which surface water or ground water uses have been retired for purposes of the water bank.

(e) The TPNRD shall annually report all water banking deposits, withdrawals, and other activities according to the specifications described in Section I.A.1 of Chapter 7 of this IMP.

(f) When carrying out any water banking activity, the TPNRD shall follow the procedures for any ground water regulatory action (e.g. transfers, certification, or municipal and non-municipal industrial accounting) applicable to such activity. When carrying out any surface water related water banking activity, the TPNRD shall follow the appropriate state statute and Department rules and regulations.

C. Ground Water Regulatory Actions (Controls)

1. The TPNRD will periodically review the controls being implemented to carry out the goals and objectives of this IMP. If necessary and appropriate, the TPNRD may adjust, modify, and/or expand the existing controls and/or implement additional controls to carry out the goals and objectives of this IMP. Based on the annual review of the progress being made toward achieving the goals of this IMP, and pursuant to 46-715(4)(d)(ii), the TPNRD may amend or add to the controls. No controls may be removed, however, unless and until the TPNRD and the Department amend this IMP. The controls may not be modified in such a manner as to conflict with the goals and objectives of this IMP.

2. The Department and the TPNRD will coordinate with the Central Platte NRD, Tri-Basin NRD, South Platte NRD and North Platte NRD to develop a consistent method of calculating depletions or accretions to the stream when such calculations are necessary to implement ground water regulatory actions.

3. Within the fully appropriated area of the District, the TPNRD is currently implementing the following controls as authorized by Neb. Rev. Stat. § 46-739, and will continue to do so in the future:

(a) Moratorium

The TPNRD has implemented a moratorium on the issuance of water well construction permits and on new or expanded ground water uses. The TPNRD may grant a variance from the moratorium if there is an offset for any new or expanded use, or if there will be no increase in consumptive use due to the new or expanded use. In granting a variance, the TPNRD will consider the timing, location, and amount of the depletion, and the corresponding offset, in order to prevent adverse impacts on existing ground water or surface water users.

(b) Certification of Irrigation Uses

All ground water irrigation uses have been certified by the TPNRD. The TPNRD will consider the timing, location, and amount of any depletion associated with any modification to certified irrigated acres, as well as any associated offset in order to prevent adverse impacts to existing ground water or surface water users.

(c) Transfers

(1) General Guidelines for Ground Water Transfers

(i) The purpose of a ground water transfer is to allow for the consumptive use of ground water to be changed either in location or purpose without causing an increase in depletions to the river or an impact to existing surface water or ground water users.

(ii) The TPNRD may permit, regulate, or take action on the following types of ground water transfers: (1) physical transfer of ground water off of the overlying land; (2) transfer of the type of use or addition of use; (3) transfer of certified irrigated acres; (4) physical transfer of ground water and transfer of certified irrigated acres between the TPNRD and an adjoining NRD; (5) municipal transfer permit (if the applicant does not have a municipal transfer permit from the Department); (6) industrial transfer permit (if the applicant does not have an industrial municipal transfer permit from the Department); and (7) transfers out of state.

(iii) A transfer permit from the TPNRD shall be required before any transfer as identified in (1) through (7) may be allowed. The specifics of the transfer permitting process, including the evaluation criteria, will be included in the TPNRD's Ground Water Management Area Rules and Regulations. The evaluation criteria for a transfer permit include, but are not limited to, the following: (1) whether the proposed transfer will cause an impact to existing ground water or surface water users; (2) whether the proposed transfer will cause an increase in depletions to the river; (3) whether the proposed transfer will result in an increase in consumptive use; (4) the amount, location and timing of any changes in depletions or accretions to the river due to the proposed transfer; (5) whether the proposed transfer will cause adverse effects on the state's ability to

comply with PRRIP; (6) whether the proposed transfer is consistent with the purpose for which the Integrated Management Area was designated; and (7) whether the proposed transfer will protect the public interest and prevent detriment to the public welfare.

(iv) The TPNRD and the Department shall use the methodology for calculating depletions and accretions consistent with the other Platte Basin NRDs when evaluating proposed transfers to ensure that the criteria for compliance with PRRIP, including the timing, location and amount of the depletion and corresponding offset, are met. Any actions taken by the TPNRD related to the approval of transfers through a permitting process will be documented and shared with the Department pursuant to Subsection I.1.b of Chapter 7.

(2) Guidelines for Types of Ground Water Transfers

(i) Physical transfer of ground water off of the overlying land – (1) permits will not be required for the physical transfer of ground water for domestic or range livestock uses.

(ii) Transfer of the type of use or addition of use – (1) the transfer cannot result in an increase in consumptive use unless an offset is provided, and (2) the water well registration must be changed to reflect the new or additional use.

(iii) Transfer of certified irrigated acres – (1) the transfer cannot result in an increase in consumptive use unless an offset is provided; (2) the certified acres being transferred must be decertified and the new acres must be certified; (3) if the location the certified acres are moving to has a lower stream depletion factor than the original location of the certified acres, the same amount of acres can be moved; if, however, the location the certified acres are moving to has a higher stream depletion factor than the original location of the certified acres, the number of acres that can be transferred will be decreased by an amount proportional to the increase in the stream depletion factor; (4) transfers of certified acres may be subject to restrictions based on soil type or slope; and (5) transfers will be allowed only if the land where the water use is transferred from will be used for dryland agricultural use, or other lower consumptive uses as approved by the TPNRD.

(iv) Transfers from Outside to Inside the TPNRD and from Inside to Outside the TPNRD – (1) a permit from the TPNRD is required; (2) the transfer must be in conformance with the rules and regulations of the NRD from which the transfer is coming from or going to; and (3) agreement between the TPNRD and the other NRD involved in the transfer that the

use being retired in one district will remain retired for the duration of the transfer.

(v) Municipal Transfer Permits – (1) transfers without a municipal and rural domestic transfer permit from the Department will require a transfer permit from the TPNRD; (2) copies of variances or TPNRD permit applications for municipal uses shall be forwarded to the Department for review to ensure that compliance with PRRIP will be maintained; and (3) a water well construction permit shall not be issued unless and until the board has granted a variance to the moratorium on the issuance of water well construction permits and has approved the transfer permit.

(vi) Industrial Transfer Permits – (1) transfers without an industrial transfer permit from the Department will require a transfer permit from the TPNRD; (2) copies of variances or TPNRD permit applications for industrial uses shall be forwarded to the Department for review to ensure that compliance with PRRIP will be maintained; and (3) a water well construction permit shall not be issued unless and until the board has granted a variance to the moratorium on the issuance of water well construction permits and has approved the transfer permit.

(vii) Transfer Out of State – (1) The Department will consult with the TPNRD when considering applications filed to transfer ground water out of state, pursuant to Neb. Rev. Stat. § 46-613.01. The District will take action to approve or deny the transfer request based on the same criteria that the Department uses prior to issuing a transfer permit; and (2) a water well construction permit shall not be issued unless and until the board of the TPNRD has granted a variance to the moratorium on the issuance of water well construction permits and has approved the transfer permit.

4. Within the fully appropriated area of the District, the TPNRD will be implementing the following regulatory action items through their rules and regulations within 1 year of the effective date of this IMP and will continue to do so in the future:

(a) Municipal Use and Accounting

(1) The TPNRD will calculate a baseline consumptive use for each municipality in the TPNRD based on historic consumptive use data for the interval August 1, 2001, through July 31, 2006. Consumptive use will be determined from ground water pumping volumes and, where applicable, wastewater discharge volumes, and converted to a per capita volume. The baseline per capita volume, plus the annual population growth estimated by the Nebraska Department of Economic Development and/or U.S. Census Bureau will be used to determine annual increases and decreases in consumptive uses. These annual changes in consumptive use will be tracked

annually for each municipality through a reporting and database system administered by the TPNRD.

(2) Once each five (5) years, and more often if requested by the Department or as determined by the TPNRD, the TPNRD will re-calculate the per capita consumptive use based upon similar, but updated, data described in section 4 (a)1 above, and make any necessary adjustments to their per capita offset requirements.

(3) Each year, the TPNRD will be responsible for offsetting all increases from the baseline consumptive use as estimated by population growth except under either of the following events: (1) a municipality's water use exceeds the amount of ground water authorized by a permit that was issued pursuant to the Municipal and Rural Domestic Ground Water Transfers Permit Act; or (2) the increase is related to any new or expanded single commercial/industrial consumptive uses of more than twenty-five (25) million gallons per year.

(4) Each year the municipality shall be responsible for reporting to the TPNRD and offsetting to the river, any ground water use that exceeds the amount authorized by a permit that was issued pursuant to the Municipal and Rural Domestic Ground Water Transfers Permit act, and any new or expanded single commercial/industrial consumptive use if that new or expanded consumptive use is greater than twenty five (25) million gallons per year.

(5) Any permanent reduction in consumptive use of water associated with municipal growth including governmental, industrial, and commercial growth (e.g., by taking irrigated acres out of production), between July 14, 2006, and January 1, 2026, shall accrue to the TPNRD's water bank to be used in whole or in part to offset increased consumptive use within the District. Acres taken out of production must be decertified and transferred to the TPNRD's water bank.

(b) Non-Municipal Industrial Use and Accounting

(1) The TPNRD will calculate baseline consumptive use for each non-municipal commercial/ industrial user in the District based on historic consumptive use data for the interval of August 1, 2001, through July 31, 2006. Consumptive use will be determined from ground water pumping volumes and, where applicable, wastewater discharge volumes. The baseline will be used to determine changes in consumptive use annually.

(2) These changes in consumptive use will be tracked for each non-municipal commercial/ industrial user annually through a reporting and database system administered by the TPNRD.

(3) If the new or expanded single commercial/industrial use is less than or equal to twenty-five (25) million gallons per year, the TPNRD will be responsible for offsetting the entire new or expanded use below the amount granted in the industrial transfer permit, if applicable.

(4) If the new or expanded non-municipal commercial/industrial use exceeds twenty-five (25) million gallons per year and they do not have a transfer permit, the user will be responsible for offsetting all new or expanded consumptive uses. If the new or expanded non-municipal commercial/industrial use has a transfer permit, the user is responsible for offsetting all new or expanded uses above the amount granted in the industrial transfer permit.

(5) Any permanent reduction in consumptive use of water associated with a new non-municipal commercial or industrial use of less than twenty-five million gallons (e.g., by taking irrigated acres out of production), between July 14, 2006, and January 1, 2026, shall accrue to the TPNRD's water bank to be used in whole or in part to offset increased consumptive use within the District. Acres taken out of production must be decertified and transferred to the TPNRD's water bank.

(c) Large User Permits

(1) Any public water supplier, with the exception of municipalities, who desires to withdraw and/or consumptively use ground water shall, prior to: 1) changing the use of an existing ground water well or wells; 2) commencing construction of any new or replacement ground water well; or 3) modifying the existing infrastructure for the purpose of expanding the consumptive use of ground water, apply for and receive from the TPNRD a large user permit to authorize such withdrawal and/or use of ground water.

(d) Variances

(1) The TPNRD may grant a variance for good cause shown for any of the above listed controls. Any variance granted by the TPNRD must consider the timing, location, and amount of any depletion associated with the variance and any associated offset in order to prevent adverse impacts to existing ground water or surface water users, or on the state's ability to comply with PRRIP.

D. Surface Water Regulatory Actions

The following surface water controls as authorized by Neb. Rev. Stat. § 46-716 will be implemented and/or continued by the Department:

1. The Department will continue the moratorium on new surface water appropriations in the portion of the Platte River Basin within the boundaries of the

TPNRD, unless a variance is granted by the Department according to its rules and regulations.

2. Transfers of surface water appropriations will be in accordance with statute and Department rules and regulations.
3. The Department shall continue to administer surface water appropriations according to the provisions of the permit, statute, Department rules and regulations, and any applicable interstate compact decree or agreement
4. The Department shall continue to monitor the use of surface water to prevent unauthorized uses.
5. (a) Except as provided in 5(b) below, the Department will not require surface water appropriators to apply or use conservation measures.
 - (b) If, at some point in the future, the Department requires surface water appropriators to apply or use conservation measures, in accordance with Neb. Rev. Stat. § 46-716(2), the surface water appropriators will be allowed a reasonable amount of time, not to exceed one hundred eighty (180) days unless extended by the Department, to identify conservation measures to be applied or used and to develop a schedule for such application and use.
6. (a) Except as provided in 6(b) and (c) below, the Department will not require any other reasonable restrictions on surface water use.
 - (b) If, at some point in the future, the Department requires other reasonable restrictions on surface water use, such restrictions must be consistent with the intent of Neb. Rev. Stat. § 46-715 and the requirements of Neb. Rev. Stat. § 46-231.
 - (c) If, at some point in the future, the Department requires other reasonable restrictions on surface water use, in accordance with Neb. Rev. Stat. § 46-716(2), the surface water appropriators will be allowed a reasonable amount of time, not to exceed one hundred eighty (180) days unless extended by the Department, to comment on the proposed restrictions.

CHAPTER 6: OVERAPPROPRIATED AREA AND NEBRASKA NEW DEPLETION PLAN

I. GOALS AND OBJECTIVES

A. Goals

1. To incrementally achieve and sustain a fully appropriated condition.
 - (a) Within the first ten (10) year increment of this IMP, address impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated after July 1, 1997.
 - (b) Impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated prior to July 1, 1997, may be addressed prior to a subsequent increment with the intent of achieving a fully appropriated condition.
 - (c) Once a fully appropriated condition is achieved, maintain such condition through the implementation of the IMP.
2. To ensure that no act or omission of the TPNRD would cause noncompliance by Nebraska with any interstate decree, compact, or other formal state contract or agreement.
 - (a) To ensure that no act or omission of the TPNRD would cause noncompliance by Nebraska with the NDP included within PRRIP, for as long as PRRIP exists.
3. Maintain consistency with the Basin-Wide Plan.

B. Objectives

1. Goal I.A.1.a Objectives
 - (a) Implement measures within the first ten (10) year increment to offset an average annual depletion rate of seven-thousand seven-hundred (7,700) acre-feet to the river for the period 2043-2048. This rate is the current best estimate and is subject to change based upon new data and information.
 - (b) Conduct a technical analysis as described in Neb. Rev. Stat. § 46-715(4)(d)(iii) for this IMP after it has been in effect for six (6) years, to determine whether the measures adopted in this IMP are sufficient to offset depletions due to post-July 1, 1997, water uses.

2. Goals I.A.1.a and b Objectives

- (a) Continue to refine the estimation methodology used to calculate the difference between the current and fully appropriated levels of development.
- (b) Use available funds to offset depletions that are identified as part of the overall difference between current and fully appropriated levels of development.

3. Goals I.A.1.a, b and c Objectives

- (a) Develop and maintain data and analytical tools, such as the Cooperative Hydrology Study (COHYST) and other programs and projects needed to implement this IMP.
- (b) Review the provisions of this IMP to ensure that they are adequate to sustain progress toward a fully appropriated condition.
- (c) Review the provisions of this IMP to ensure that they are adequate to maintain a fully appropriated condition.

4. Goal I.A.2.a Objectives

- (a) To the extent it is required in order to maintain compliance with Section IV, bullet #2 of the NDP, provide accretions to the river equal to or exceeding the annual depletion amount, taking into account appropriate timing and location, for the first ten (10) year increment as shown in table 1. The data shown in table 1 represent the current best estimate of stream depletions to the river due to changes in ground water irrigated acres between 1997 and 2005 and are subject to change based upon new data and information. At this time, the compliance test indicates that controls will only be required based upon the indicators and triggers described in Chapter 6, Section II.B.3.

Table 1: Current best estimate of post-1997 depletions to the Platte River due to changes in ground water irrigated acres within the TPNRD between 1997 and 2005 based upon the June 10, 2008, COHYST Report on stream depletions.

Year	2009	2010	2011	2012	2013	2014
Annual Stream Depletion (AF)	5,829	5,908	6,068	6,156	6,243	6,293

Year	2015	2016	2017	2018	2019
Annual Stream Depletion (AF)	6,363	6,426	6,550	6,704	6,760

(b) As required by the NDP, the TPNRD will submit reports to the Department as necessary to assist Nebraska in maintaining compliance with PRRIP.

5. Goal I.A.3. Objectives

(a) Amend this IMP as needed to remain consistent with the Basin-Wide Plan.

(b) Participate in basin-wide planning activities.

(c) If appropriate and necessary, follow the dispute resolution process in the Basin-Wide Plan.

II. PLAN COMPONENTS AND ACTION ITEMS

The action items described in this section are intended to be consistent with the requirements of Neb. Rev. Stat. § 46-715(3).

A. Non-Regulatory Action Items

1. Information and Education Programs

These programs are discussed in the fully appropriated portion of this IMP.

2. Incentive Programs

(a) The Department and/or the TPNRD intend to establish, implement, and/or continue financial or other incentive programs to reduce consumptive use of water within the TPNRD to meet the goals and objectives of this IMP. Incentive programs include any program authorized by state law and/or federal programs such as the Conservation Reserve Enhancement Program (CREP), the Environmental Quality Incentive Program (EQIP) or the Agricultural Water Resources Enhancement Program (AWEP).

(b) At this time, the Platte Basin NRDs and the Department have identified the Platte Basin Habitat Enhancement Program (PBHEP) as an incentive program that they intend to pursue to reduce consumptive use within the overappropriated portion of the Platte River Basin.

3. Other Programs

(a) The TPNRD and the Department may investigate opportunities to reduce the consumptive use of water in order to enhance water supply as well as other water supply improvement projects. The TPNRD and the Department may develop an incentive-based program if such an opportunity exists. When

developing any water based programs, the Department and the TPNRD intend to adhere to the following principles:

- (1) Using the best science readily available.
 - (2) Enhancing ground water quantity, ground water quality, and recognition of the value of return flows.
 - (3) Working with irrigation districts, not just individual landowners served by the irrigation district, when potential projects affect the operation of the irrigation district.
 - (4) Remaining in compliance with any state or federal laws, contracts, interstate compacts, or decrees that govern the water use of the irrigation districts.
- (b) These other programs may include, but are not limited to, the following:
- (1) transfer existing surface water appropriations within the TPNRD to instream flow appropriations;
 - (2) transfer existing surface water appropriations or apply for new appropriations for intentional recharge, and recovery when appropriate, in existing canals during the irrigation or non-irrigation season;
 - (3) develop new infrastructure (e.g. dams or canals) that may include intentional recharge projects, and recovery when appropriate;
 - (4) develop ground water projects for the purpose of providing net accretions to the river; and
 - (5) facilitate contractual agreements between water users.
- (c) If any of the foregoing programs are pursued, the Department and the TPNRD shall develop a schedule within the first ten (10) year increment of this IMP.
- (d) Process for Implementing Other Programs
- (1) Determine, within the first two years of the first ten (10) year increment, the available ground water and surface water supplies.
 - (i) Unappropriated Surface Water
 - (i.a.) Perform an analysis to determine if there is unappropriated surface water.
 - (i.b.) Determine if unappropriated surface water is available at the necessary time, in the right location and in the correct amount, or determine if it can be appropriately relocated or retimed.
 - (ii) Appropriated Surface Water

(ii.a.) Compile a list of existing surface water appropriations within the TPNRD.

(ii.b.) Determine if the appropriated surface water is available at the necessary time, in the right location and in the correct amount, or determine if it can be appropriately relocated or retimed.

(iii) Ground Water

(iii.a.) Compile a list of certified ground water uses within the TPNRD.

(iii.b.) Determine if the certified ground water uses can be converted to another use or otherwise retimed or relocated to provide net accretions to the river at the necessary time and in the right location.

(2) Develop a list of criteria to evaluate the potential to use available surface water and/or ground water supplies. The criteria may take into consideration the following:

(i) Any permitting requirements or regulatory constraints related to using the available water supplies.

(ii) The potential benefits and the estimated cost of operation.

(iii) The cyclical water supply conditions.

(3) Evaluate available surface water and/or ground water supplies based on the criteria developed in Subsection II.A.3.d.2 of Chapter 6.

(4) Subsections II.A.3.d.2 and II.A.3.d.3 of Chapter 6 would be an iterative process until the preferred projects are identified.

(5) For existing surface water appropriations, contact the appropriators to determine willingness to cooperate, lease and/or sell those appropriations. If willing, develop and execute contract(s) with appropriator(s).

(6) For existing ground water uses, contact the landowner(s) to determine willingness to cooperate with the proposed project(s). If willing, develop and execute contract(s) with such landowner(s).

(7) Submit the required permit application(s).

(8) Implement the approved projects.

(e) Identification of Specific Other Programs

- (1) At this time, the specific other programs that have been identified are: (1) potential purchase or lease of surface water irrigation district appropriations in order to transfer those appropriations to intentional recharge appropriations; and (2) exploration of water supply opportunities on the South Platte River.

B. Ground Water Regulatory Actions (Controls)

1. In order to determine whether ground water regulatory actions are needed in the overappropriated area, the annual stream depletion amounts shown in table 2 will be compared to the stream accretions resulting from the actions taken by the TPNRD. As long as the annual net sum of the accretions resulting from the actions taken by the TPNRD and the annual depletions (shown in table 2) are less than or equal to zero, regulatory actions will not be required. The depletion amounts shown in table 2 are subject to change based upon the best scientific data and information available.

Table 2: Current best estimate of depletions to the Platte River due to changes in ground water irrigated acres within the overappropriated area of the TPNRD between 1997 and 2005 based upon the June 10, 2008 COHYST Report on stream depletions.

Year	2009	2010	2011	2012	2013	2014
Annual Stream Depletion (AF)	5,599	5,635	5,756	5,804	5,859	5,862

Year	2015	2016	2017	2018	2019
Annual Stream Depletion (AF)	5,901	5,931	6,024	6,155	6,185

2. The annual net depletion values in table 3 are due to actions taken jointly by the Department and the TPNRD to date. Based on the information shown in table 3, the necessary stream accretions have not been provided in amounts necessary to obtain a net sum of accretions and depletions of less than or equal to zero.

Table 3: Current best estimate of annual accretions to the Platte River assuming existing retirements of irrigated acres (developed by the Department based upon type curves derived from the June 10, 2008, COHYST stream depletions report assuming the distribution of existing retired acres; surface water retirements assume 100% accretion to streamflow instantaneously).

Year	2009	2010	2011	2012	2013	2014
Accretions (AF)	195	210	216	225	229	234

Year	2015	2016	2017	2018	2019
Accretions (AF)	241	249	255	261	266

3. The Department and the TPNRD recognize the potential for the implementation of voluntary programs, incentive measures, or other projects to provide stream accretions that will help bring the depletions and accretions to a net sum of less than or equal to zero, and will work diligently to implement measures to provide stream accretions in a timely manner. Regular progress toward meeting the goal of a net sum of accretions and depletions of less than or equal to zero must be demonstrated. Regular progress will be determined by the following indicator and triggers.

(a) Indicator: If, by the end of 2012, an accretion to the river equal to or exceeding a rate of five thousand eight hundred four (5,804) acre-feet annually and every year thereafter throughout the first ten (10) year increment has not been met, the Department and the TPNRD will jointly determine what steps need to be taken to ensure that the agreed upon regulatory actions will be in place by the beginning of the 2014 irrigation season.

(1) The Department and the TPNRD will jointly determine that steps to implement regulatory actions will not be required if the indicator of five thousand eight hundred four (5,804) acre-feet annually and every year thereafter throughout the first increment has not been met by the end of 2012, but programs and/or projects that have been or will be implemented for the purpose of meeting this indicator will provide accretions to the river of five thousand eight hundred fifty nine (5,859) acre-feet annually and every year thereafter throughout the first ten (10) year increment by the end of 2013.

(b) If the above indicator has been met, the following triggers will be used to determine progress toward meeting the goals and objectives of this IMP.

(1) Trigger 1: If, by the end of 2015, an accretion to the river equal to or exceeding a rate of five thousand nine hundred one (5,901) acre-feet annually and every year thereafter throughout the first ten (10) year increment has not been met, the Department and the TPNRD will jointly determine what steps need to be taken to ensure that the agreed upon regulatory actions will be in place by the beginning of the 2016 irrigation season.

(2) Trigger 2: By the end of 2015, measures will be in place to achieve an accretion to the river equal to or exceeding a rate of four thousand six hundred ninety (4,690) acre-feet annually (seventy percent (70%) of the six thousand seven hundred (6,700) acre-feet required for the period 2043-2048). If this trigger has not been met, the Department and the TPNRD will jointly determine what steps need to be taken to ensure that the agreed upon regulatory actions will be in place by the beginning of the 2016 irrigation season.

4. Subsection I.A.2 of Chapter 7 describes how progress toward achieving the indicator and triggers will be measured.

5. At this time, the Department and the TPNRD have identified the following ground water controls as potential regulatory actions that may be implemented:

(a) Ground Water Controls

(1) Prior to implementation of any of the ground water controls listed below, the TPNRD and the Department will agree to the method of implementation and the methods used to measure the success of the control(s) in reaching the goals and objectives of Chapter 6 of this IMP.

(2) In order to reach these goals and objectives, a limit on the amount of consumptive use on certified irrigated acres within the overappropriated area may be implemented. The methods by which a limit on the amount of consumptive use would be implemented include, but are not limited to, the following:

(i) Alternative Crop Mixes (Neb. Rev. Stat. § 46-739(b))

Alternative crop mix would mean planting a mix of crops over a specified period of years for the certified irrigated acres within the overappropriated area for which there would be an upper limit on the consumptive use allowed. The amount of consumptive use allowed would be determined by the TPNRD and the Department.

(ii) Reduction of Certified Irrigated Acres

A reduction of certified irrigated acres would mean a set percentage reduction in certified irrigated acres within the overappropriated area. The amount of the reduction would be determined by the TPNRD and the Department.

(iii) Allocation

An allocation would mean a uniform allotment of the withdrawal of ground water to be applied to certified irrigated acres during a specified period within the overappropriated area. The amount of the allocation would be determined by the TPNRD and the Department.

C. Surface Water Regulatory Actions

The surface regulatory actions that will be used in the overappropriated area are the same as those described in the fully appropriated portion of this IMP.

CHAPTER 7: MONITORING AND STUDIES SECTION

I. The overarching purpose of the monitoring and studies section is to ensure that the overappropriated and fully appropriated areas within the TPNRD reach and/or maintain a fully appropriated condition. The objective of the monitoring and studies section of this IMP is to gather and evaluate data, information and methodologies that could be used to increase understanding of the surface water and hydrologically connected ground water system, to test the validity of the conclusions and information upon which this IMP is based, and to assist decision makers in properly managing the water resources within the TPNRD.

II. MONITORING

A. Various methods will be employed to monitor the progress of the implementation of this IMP. Part One of the monitoring section describes the tracking and reporting of water use activities within the fully appropriated and overappropriated areas of the District by the TPNRD and the Department. Part Two of the monitoring section describes the analyses that will evaluate the progress that has been made toward: (1) addressing streamflow depletions due to new uses begun subsequent to July 1, 1997; (2) reaching a fully appropriated condition; and (3) sustaining a fully appropriated condition. Part Three of the monitoring section describes the procedure for evaluating whether a subsequent increment is necessary to meet the goals and objectives of this IMP.

1. Part One: Tracking and Reporting of Water Use Activities

(a) Tracking

(1) The TPNRD will be responsible for annually tracking the following activities within the District: (1) certification of ground water uses and any changes to these certifications; (2) approved transfers, including all of the information provided with the application and used in the approval of the transfer; (3) any flow meter data collected; (4) any water well construction permits issued; (5) any other permits issued by the TPNRD; (6) any conditions associated with any permits issued; (7) information gathered through the municipal and non-municipal industrial accounting process; (8) any variances issued, including the purpose, the location, any required offset, the length of time for which the variance is applicable, and the reasoning behind approval of the variance; (9) any retirements of irrigated acres or other activities by the TPNRD for the purpose of returning to a fully appropriated condition; (10) information related to any water banking transactions; and (11) offsets provided for depletions resulting from increased consumptive use related to the above listed items.

(2) The Department will be responsible for annually tracking the following activities within the District: (1) any surface water permits issued; (2) any

dam safety permits issued; (3) any ground water permits issued; and (4) the associated offsets for any new permits issued. The Department will be responsible for tracking the following activities within the District on a five (5) year basis: (1) National Agricultural Statistics Service livestock data; (2) US 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 activities by the Department for the purpose of returning to a fully appropriated condition; and (6) offsets provided for depletions resulting from increased consumptive use related to the above listed items.

(b) Reporting

(1) An annual review of the progress being made toward achieving the goals and objectives of the first ten (10) year increment will include annual reporting by the Department and the TPNRD of the information being tracked as described above. This information will be shared between the TPNRD and the Department, presented at the basin-wide annual meeting and be used for PRRIP compliance.

(2) The reports from the TPNRD and the Department should include information on the location, amount and timing of the depletions caused by each permitted new or expanded water use, as well as the associated offset and the location, amount and timing of the offset's accretions to the river. The depletions and/or the accretions should be reported for each year throughout the first ten (10) year increment.

(3) These reports should be made available at least four (4) weeks prior to each basin-wide annual meeting. The format of the reports will be standardized as agreed to by the Department and the Platte Basin NRDs.

(4) The reported information will be used as appropriate in the evaluation process as described below.

2. Part Two: Measuring the Success of Meeting the Goals and Objectives of this IMP.

(a) Measuring the success of this IMP in addressing streamflow depletions due to new uses begun subsequent to July 1, 1997 (Goals I.A.1.a and I.A.2.a of Chapter 6 of this IMP).

(1) In order to meet the requirements of Neb. Rev. Stat. § 46-715(4)(d)(ii), the data contained in the annual reports submitted by the TPNRD and the Department will be reviewed and analyzed annually to assess the progress being made toward achieving the goals and objectives of Chapter 6 of this IMP for the first ten (10) year increment. The analysis will include a

forecasting of the balance of the depletions and offsets from the current year through the year 2048.

(2) In addition to the annual review, a more robust review of the progress being made toward achieving the goals and objectives of Chapter 6 of this IMP for the first ten (10) year increment will be carried out periodically. The process for this review is described below.

(i) The ground water models used for this process will be calibrated to baseflows and ground water levels in the area with sufficient temporal variability to assess the impacts on a monthly basis. The ground water models will be updated periodically to simulate the management practices that have been implemented to date. The evaluation period of these models will be 1998 through 2048.

(ii) The following two ground water model runs will be conducted to measure the success toward reaching the objectives of Goal I.A.1.a and Goal I.A.2.a:

(ii.a.) The 1997 Development Level Run - A model run which simulates the number of irrigated acres in 1997 and the associated crop mix. It will incorporate the full crop irrigation requirement for the 1997 crop mix. This model run will serve as the baseline to which the evaluation run will be compared. The run will be conducted using data through the current date and will include an update from the current date through the year 2048.

(ii.b.) The Evaluation Run - A model run which simulates the annual changes between the irrigated acres throughout the evaluation period and the irrigated acres in 1997. The model will use available flow meter data or, in the absence of flow meter data, assume the full crop irrigation requirement. The run will be conducted using data through the current date and will include an update from the current date through the year 2048.

(ii.c.) Difference between the Evaluation Run and the 1997 Run - The simulated baseflow output from each model run will be compared to determine the difference.

(ii.d.) Surface Water Accretions and Other Uses not Covered by the Model - If surface water acres are retired to offset streamflow depletions due to new uses begun subsequent to July 1, 1997, accretions resulting from those retirements will be determined using agreed upon methodologies.

(ii.e.) Evaluation Results - For the first ten (10) year increment to be considered achieved, the results of combining the difference between the evaluation run and the 1997 development level run with the addition of surface water accretions and other uses not covered by the model will be less than or equal to zero. See the following equation.

$$\begin{aligned} & (\text{depletions from the Evaluation Run}) - (\text{depletions from the 1997} \\ & \quad \text{Development Level Run}) + (\text{Surface Water Accretions}) = \\ & \quad \text{Net Depletions} \end{aligned}$$

(b) Measure the success of reaching a fully appropriated condition.

(1) Because a fully appropriated condition is not currently determined, the Department and the TPNRD will work on outlining the process that will measure the success of reaching the fully appropriated condition once that condition has been determined.

(c) Measure the success of maintaining a fully appropriated condition.

(1) Current Fully Appropriated Area - Monitor and analyze uses in the fully appropriated area to determine the change in stream depletions due to such uses.

(2) Current Overappropriated Area - Because a fully appropriated condition is not currently determined, the Department and the TPNRD will work on outlining the process that will measure the success of maintaining a fully appropriated condition once that condition has been determined.

(d) In performing the analysis described in this subsection of the IMP, the Department and the TPNRD will use the best data and science that is readily available. The Department and the TPNRD will work with other agencies and/or interested parties, if necessary, to identify data gaps in their analyses and determine whether studies should be undertaken to address these gaps.

3. Part 3: Evaluating the Need for a Subsequent Increment

(a) The Department and the TPNRD will carry out the studies and the technical analysis as specified in Neb. Rev. Stat. § 46-715(4)(d)(iii) to determine whether or not a subsequent ten (10) year increment is necessary. This will include a process to test the validity of the conclusions and information upon which this IMP is based, as required by § 46-715(2)(e).

(b) Within the first ten (10) year increment, the Department and the TPNRD will continue to refine the estimation methodology used to calculate the difference between the current and fully appropriated levels of development in

accordance with §46-715(4)(c). Fully appropriated levels of development will be determined through the following process:

- (1) Determine the changes in recharge from surface water diversions and the impacts of those changes on streamflow using readily available data.
- (2) Determine the changes in ground water irrigation, municipal, industrial, domestic, livestock and other uses and the streamflow depletions caused by those changes using readily available data.
- (3) Determine the effects of conservation measures on streamflows.
- (4) Determine the timing and location of the net changes in streamflow.
- (5) Determine when streamflow changes impact existing users, taking into account the effects of cyclical supply (e.g. drought).
- (6) If significant changes in either the timing or location of streamflow have impacted existing users, the TPNRD and the Department will work collaboratively with affected parties to determine subsequent ten (10) year increment goals. These goals will include consideration of the socioeconomic benefits derived from the various uses impacted by such changes in streamflow.
- (7) The Department and the TPNRD will review other data and/or methodologies relevant or significant to the process.
 - (i) The Department and the TPNRD will discuss how a water budget approach could be used in conjunction with the estimate of the difference between the current and fully appropriated levels of development. Examples of how a water budget approach may be used include:
 - (i.a.) Assisting in the identification of sustainable long-term levels of consumptive use within the TPNRD
 - (i.b.) Evaluating streamflow gains under various management scenarios
 - (i.c.) Verifying ground water modeling results
 - (i.d.) Assessing the sustainability of conjunctive water management plans
- (c) The process described above in subsection I.A.3.b of Chapter 7 will focus on uses initiated prior to July 1, 1997, and their impacts on hydrologically

connected streamflows. All uses initiated subsequent to July 1, 1997, will be evaluated using the process described in Section I.A.2 of Chapter 7.

(d) In performing these analyses, the Department and the TPNRD will use the best data and science that is readily available. The Department and the TPNRD will work with other agencies and/or interested parties, if necessary, to identify data gaps in their analyses and determine whether studies should be undertaken to address these gaps.

III. STUDIES

A. The Department and the TPNRD will jointly pursue and/or evaluate studies, contingent upon budget and staff resources, to evaluate their potential effectiveness in achieving the goals and objectives of this IMP.

B. The following potential studies have been identified by the Department and the TPNRD: (1) stream depletions due to the use of ground water wells that are commingled with surface water; (2) crop rotation; (3) vegetation management; (4) irrigation scheduling; (5) a survey of the type and location of irrigation systems throughout the TPNRD; (6) tillage practices; (7) other best management practices; (8) conjunctive management; (9) water budget analysis; (10) invasive species; and (11) conservation measures.

CHAPTER 8: REVIEW OF AND MODIFICATIONS TO THE IMP

I. FULLY APPROPRIATED PORTION OF THE IMP

- A. The TPNRD and the Department will jointly determine whether amendments need to be made to this IMP as necessary.
- B. Modifications to this IMP will require an agreement by both the TPNRD and the Department as to the proposed changes. After the proposed changes have been agreed to, a joint hearing on those changes will be required. Following the joint hearing, the TPNRD and the Department will, by order, adopt the amendments to this IMP.
- C. If published results of COHYST or other model(s) or tool(s) developed as part of the monitoring effort indicate annual depletion values different than those in table 1, the Department and the TPNRD shall meet and discuss how this IMP may need to be revised.

II. OVERAPPROPRIATED AREA AND NEBRASKA NEW DEPLETION PLAN PORTION OF THE IMP

A. First Ten (10) Year Increment

- 1. The TPNRD and the Department may amend Chapter 6 of this IMP after an annual review of progress being made toward achieving the goals and objectives of Chapter 6 of this IMP or at more frequent intervals as more data and information become available.
 - (a) If published results of COHYST or other model(s) or tool(s) developed as part of the monitoring effort indicate annual depletion values different than those in table 2, the Department and the TPNRD shall meet and discuss how this IMP may need to be revised.
- 2. If the Basin-Wide Plan is revised and results in the need for this IMP to be revised to be consistent with the Basin-Wide Plan, this IMP will be revised accordingly.
- 3. Basin-Wide Plan Disputes
 - (a) If a dispute is presented at the annual meeting as described in the Basin-Wide Plan, the Platte Basin NRDs and the Department will make a determination of whether or not the dispute has hydrologic impact. If it is determined that the dispute does have hydrologic impact, then the Platte Basin NRDs and the Department will determine whether the dispute pertains to all of the Platte Basin NRDs or just to individual NRD(s).
 - (b) If the dispute pertains to all of the Platte Basin NRDs, an investigation will be conducted by the Platte Basin NRDs and the Department to determine what

management actions will address the dispute(s) in the Basin-Wide Plan and/or the IMPs. If the management action pertains to this IMP it will be revised accordingly.

(c) If the dispute is not a basin-wide issue, but pertains to the TPNRD, the Department, the TPNRD and any other affected Platte River Basin NRD(s), working with the affected water user(s), shall develop management solutions as appropriate to address the issue(s).

4. Modifications to Chapter 6 of this IMP will require an agreement by both the TPNRD and the Department as to the proposed changes. After the proposed changes have been agreed to, a joint hearing on those changes will be required. This IMP will be provided to all of the other Platte Basin NRDs for comment before the revisions are approved by the TPNRD and the Department.

B. Second Ten (10) Year Increment

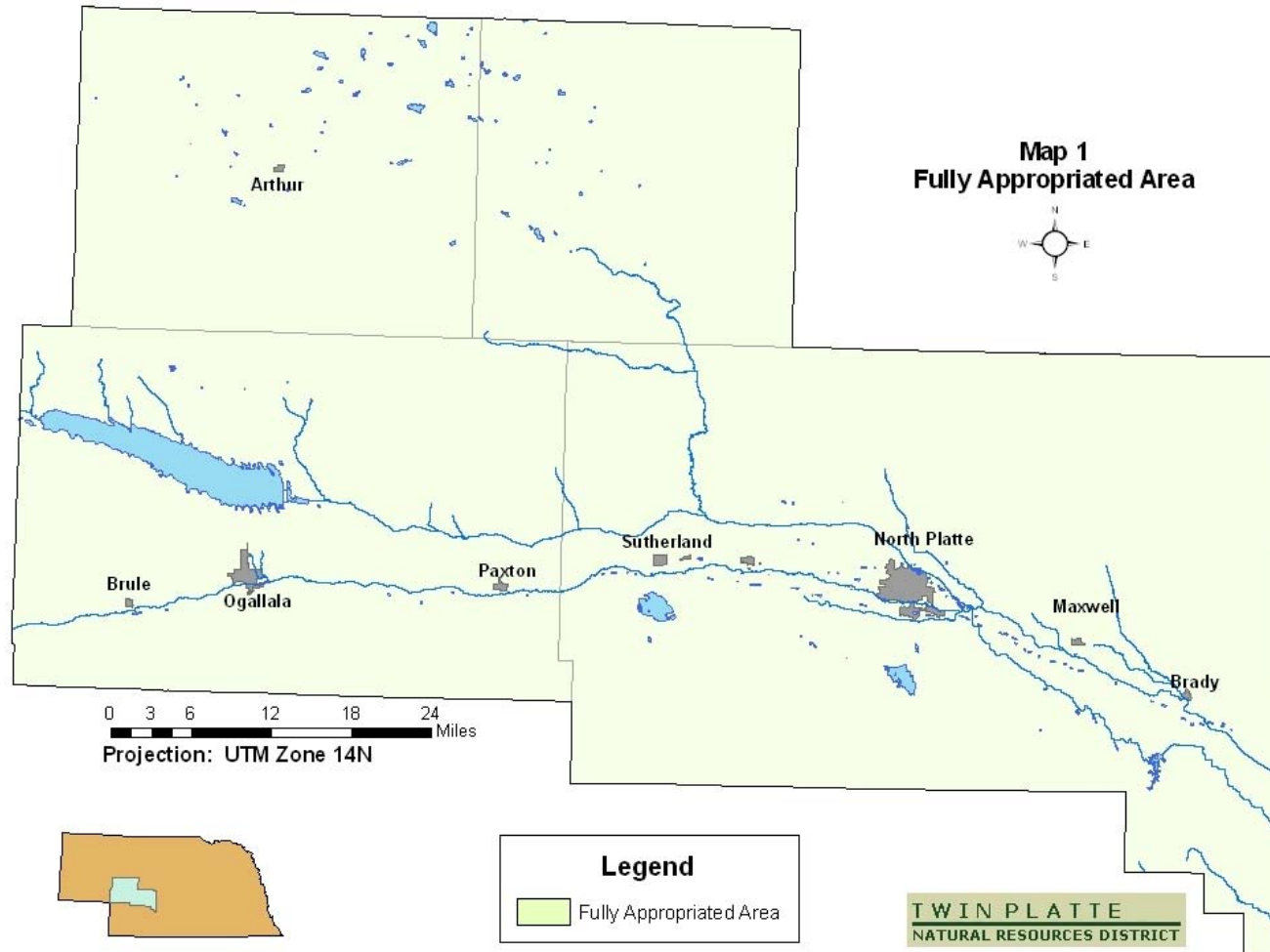
1. A technical analysis as described in Neb. Rev. Stat. § 46-715(4)(d)(iii) will be completed after this IMP has been in effect for six (6) years. This technical analysis will determine whether the measures adopted in this IMP are sufficient to offset depletions due to post-July 1, 1997, water uses.

2. If it is determined from this technical analysis that a subsequent ten (10) year increment is needed to meet the goals and objectives of this IMP, then pursuant to Neb. Rev. Stat. § 46-715(4)(d)(iv), the goals and objectives for the subsequent ten (10) year increment will be developed using the consultative and collaborative process described in Neb. Rev. Stat. § 46-715(4)(b). The subsequent ten (10) year increment shall be completed, adopted and take effect not more than ten (10) years after adoption of this IMP.

CHAPTER 9: INFORMATION CONSIDERED IN DEVELOPING THIS IMP

Information used in the preparation of this IMP and to be used in the subsequent implementation of this IMP can be found in: 1) the Order of Final Determination of River Basins, Subbasins, or Reaches as Fully Appropriated, and Describing Hydrologically Connected Geographic Area in the Matter of the Portion of the Platte River Basin Upstream of the Loup River Confluence, the North Platte River Basin, and the South Platte River Basin within the South Platte Natural Resources District, the Twin Platte Natural Resources District, and the Central Platte Natural Resources District; 2) the Order Designating Overappropriated River Basins, Subbasins, or Reaches, and Describing Hydrologically Connected Geographic Area in the Matter of the Platte River Basin upstream of the Kearney Canal Diversion, the North Platte River Basin, and the South Platte River Basin; 3) the TPNRD Ground Water Management Plan; and 4) additional data on file with the TPNRD and the Department.

Twin Platte Natural Resources District



Twin Platte Natural Resources District

