

Second-Generation
INTEGRATED MANAGEMENT PLAN
For those portions of Tri-Basin NRD
located within the Republican River Basin

Jointly Developed and Administered by
Tri-Basin Natural Resources District
and the
Nebraska Department of Water, Energy, And Environment

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I. Effective Date

A. IMP Adoption

This Integrated Management Plan (IMP) was adopted by Tri-Basin Natural Resources District (Tri-Basin NRD or District) on March 18th, 2026, and by the Nebraska Department of Water, Energy, And Environment¹ (DWEE) on March 26th, 2026. This IMP became effective on May 8th, 2026. Tri-Basin NRD gratefully acknowledges the contributions of the 13 stakeholders who participated in the development of the IMP.

II. Introduction

A. NRD Description

Tri-Basin NRD encompasses portions of the Republican, Platte, and Little Blue River Basins (Figure 3). Each of the three counties in the NRD (Gosper, Phelps, and Kearney) also contains numerous non-tributary wetlands, known as “Rainwater Basins.” Their watersheds range in size from “buffalo wallows” that drain a couple hundred acres up to the 28,000-acre Sacramento Creek basin. The District also contains a large area spanning portions of all

¹ 2025 Neb. Laws, LB 317, passed on May 6, 2025, provides that on or after July 1, 2025, the Department of Natural Resources shall be merged into the Department of Environment and Energy, which shall be renamed the Department of Water, Energy, and Environment and that the Director of Natural Resources shall be renamed the Chief Water Officer of the Department of Water, Energy, and Environment and shall retain authorities previously prescribed for the administration of duties of the Department of Natural Resources, except as otherwise provided by law.

three basins that is characterized by groundwater levels that are higher than historic “pre-development” groundwater levels.

B. Tri-Basin NRD Mission Statement

Tri-Basin NRD’s mission is to “**manage, conserve and protect the District’s land and water resources.**” This mission will be accomplished by protecting the quality and quantity of surface water and groundwater, reducing soil erosion and flooding, promoting agricultural best management practices, and through forestry and wildlife habitat preservation. These tasks can only be accomplished by working cooperatively with local residents and agencies of local, state and federal government.

C. Tri-Basin NRD and DWEE IMP Vision Statement

The vision (overall goal) for Tri-Basin NRD and DWEE is to work cooperatively with District residents and others to promote good stewardship of land and water resources in a manner that strives to balance demands and supplies and protect existing users of groundwater and surface water for both the near term and long term.

III. Authority and Background

A. Authority

The Republican River Basin IMP was jointly prepared by the Board of Directors of Tri-Basin NRD and DWEE, in accordance with the Nebraska Ground Water Management and Protection Act (Neb. Rev. Stat. §§ 46-701 through 46-756).

B. Background

Tri-Basin NRD is located in south-central Nebraska, a portion of which is within the Republican River Basin. It contains Gosper, Phelps, and Kearney Counties (see Figure 1).

In 1943 the States of Colorado, Kansas, and Nebraska, with the approval of Congress, entered into the Republican River Compact (Compact). The Compact provides for the equitable apportionment of the “virgin water supply” of the Republican River Basin.

The Final Settlement Stipulation (FSS, 2002) and Republican River Compact Administration (RRCA) Resolutions define how compliance within the Compact’s requirements is to be determined, including detailed accounting procedures and the use of a jointly-developed groundwater model. The current jointly-developed groundwater model is called the RRCA Groundwater Model. The RRCA administers the Compact and consists of one Commissioner from each of the three states.

A joint action plan for the Republican River Basin portion of Tri-Basin NRD was adopted on July 13th, 2004, as described in Neb. Rev. Stat. § 46-720 (4)(a). The objective of the plan was to maintain Tri-Basin NRD's "Imported Water Supply Credit" to the extent that it offset depletions from groundwater pumping. The "imported water" is groundwater from past irrigation in the neighboring Platte River Basin, referred to as the "ground water mound" in the first-generation IMP, which contributes to baseflows of Republican River tributaries.

Tri-Basin NRD and DWEE worked together to modify the original joint action plan and incorporate new goals and objectives into the first IMP for the Republican River Basin portion of Tri-Basin NRD, pursuant to Neb. Rev. Stat. § 46-720 (4)(a). That IMP became effective on July 1, 2012, and remained in effect until it was superseded by this second-generation IMP.

In 2015, the Supreme Court found that the Compact Accounting Procedures at the time improperly treated Nebraska's use of imported water as if it were use of Republican River Basin water. This decision required an adjustment to the Accounting Procedures, such that imported water is no longer included in the calculation of each state's consumption, and Nebraska is able to use all of the water that is imported from the Platte Basin. This change directly affected implementation of the first-generation IMP. Current Compact Accounting Procedures are incorporated into the "Monitoring and Studies" section of this IMP, including through annual evaluation of Tri-Basin NRD's portion of the state's consumption and the imported water supply credit.

The Republican River Basin-Wide Plan (basin-wide plan) was jointly developed over a five-year period (2014–2019) by DWEE (then called NeDNR) and the Upper Republican (URNRD), Middle Republican (MRNRD), Lower Republican (LRNRD), and Tri-Basin NRDs, in consultation and collaboration with a 42-member stakeholder advisory committee, to fulfill the requirements of Neb. Rev. Stat. § 46-755. DWEE and the NRDs met with the stakeholder committee 15 times during plan development. The basin-wide plan took effect on March 1, 2019, and the timeframe to implement the basin-wide plan is approximately 25 years (through April 17, 2044). Under Neb. Rev. Stat. § 46-755, Tri-Basin's IMP and the other Republican River Basin IMPs must be consistent with the basin-wide plan, including meeting the basin-wide plan's Measurable Hydrologic Objectives (MHOs). Within the Republican River Basin portion of the District, DWEE and Tri-Basin NRD are jointly responsible for the implementation of both this IMP and the basin-wide plan.

This IMP is the second-generation IMP jointly developed by Tri-Basin NRD and DWEE, with significant review and input from a group of stakeholders, for the collective management of the integrated water resources in the Republican River Basin portion of Tri-Basin NRD. The IMP is implemented under Neb. Rev. Stat. § 46-715 (1)(b), in accordance with Neb. Rev. Stat. § 46-720 (4)(a) and contains provisions to ensure compliance with the Compact in accordance with Neb. Rev. Stat. § 46-715 (4)(b) and 6. Tri-Basin NRD and DWEE worked together to modify the first-generation IMP for three primary purposes:

- To reflect the change to the RRCA accounting methodology, properly excluding imported water supply in the calculation of Nebraska’s consumptive use, resulting from the 2015 Supreme Court decision previously described,
- To shift to a longer-term planning horizon, as the original IMP was focused on the first ten years of plan implementation, which are now in the past, and
- To ensure consistency with and include elements from the basin-wide plan.

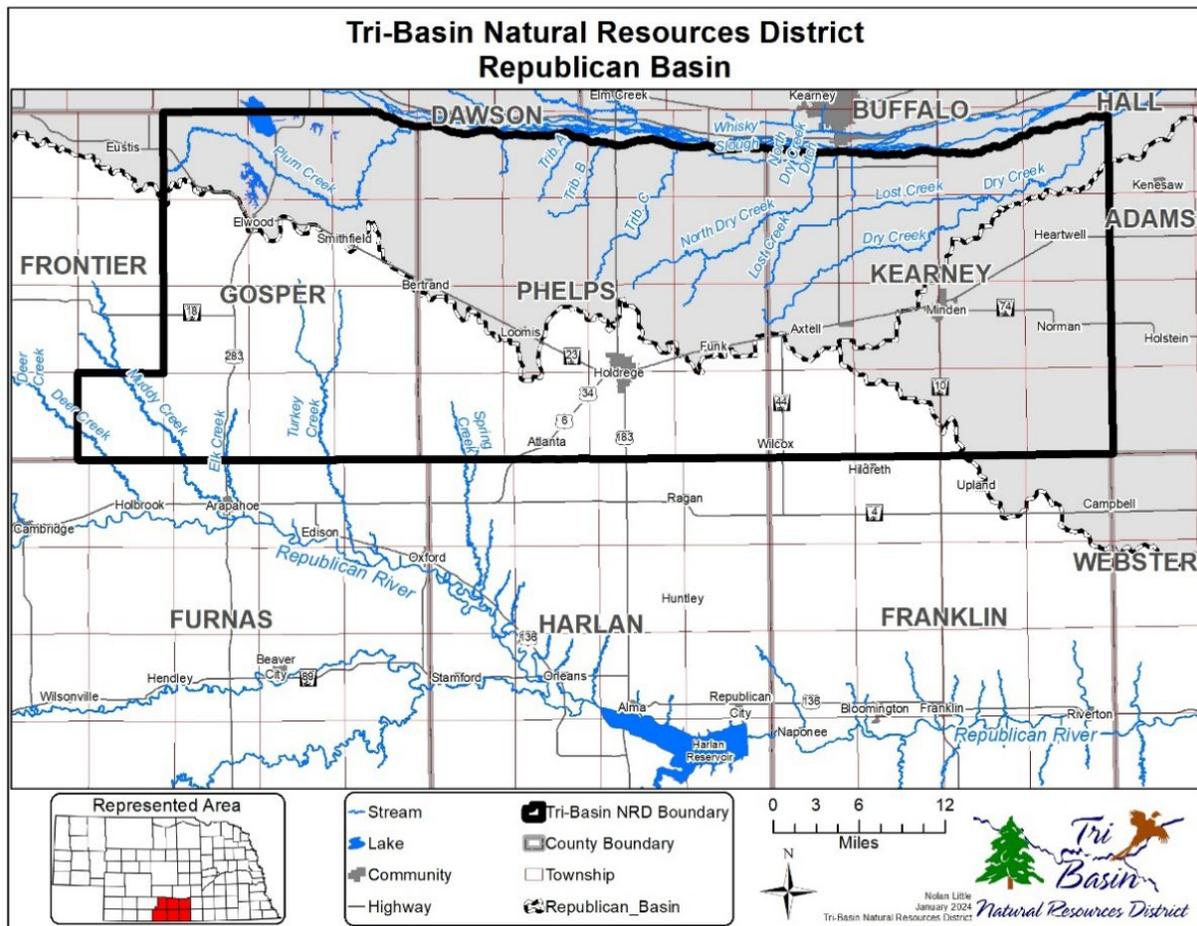


Figure 1. Overview of Tri-Basin NRD

IV. Map and Management Area Boundaries

A. District and Integrated Management Boundaries

Tri-Basin NRD Board of Directors declared the entire District as an Integrated Water Management Area on July 16, 2004 (Figure 2). The area subject to this IMP is the Republican River Basin within Tri-Basin NRD (Figure 3).

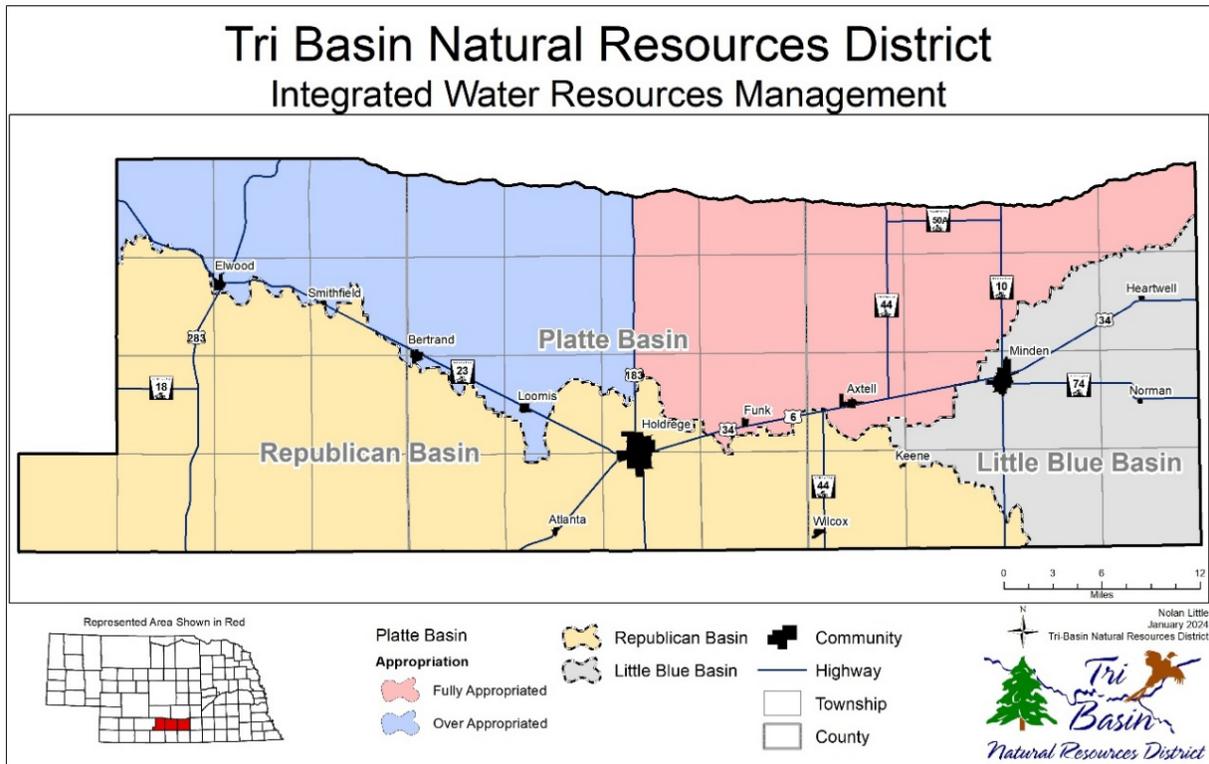


Figure 2. Tri-Basin NRD Integrated Water Management Area. The NRD's Board of Directors declared the entire District as an Integrated Water Management Area on July 16, 2004.

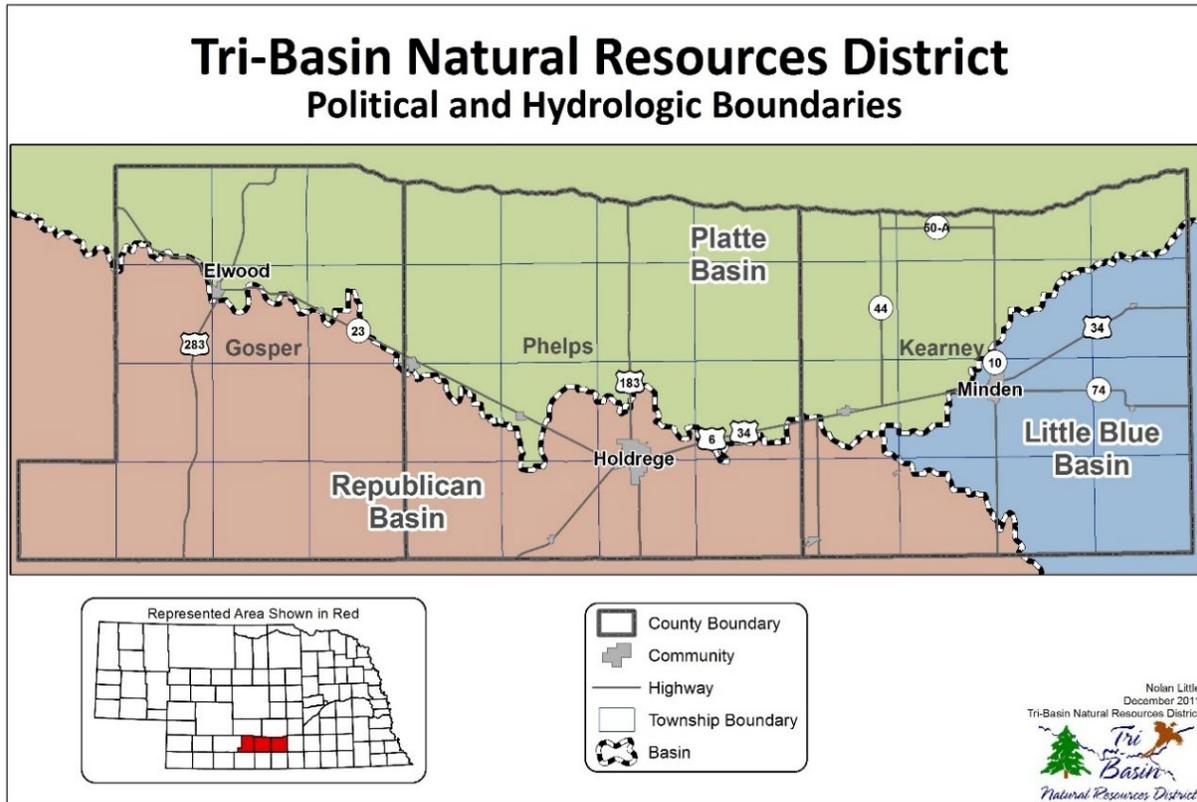


Figure 3. Tri-Basin NRD includes portions of the Platte, Little Blue, and Republican River Basins. This IMP, including the plan's groundwater and surface water controls, applies to the Republican River Basin portion of the NRD.

B. Stream Depletion Factors

The relative depletive effects of groundwater pumping on Republican River and Platte River basins streamflow are depicted in Figure 4. Stream depletion factors represent the cumulative streamflow depletion due to pumping over a fifty-year period. The greater the stream depletion factor, the more the streamflow will be depleted by water pumped from the ground in that time period. Figure 4 is an example of stream depletion factor data used by Tri-Basin NRD. The map shown will not be used for any management decisions or analysis. No stream depletion factor is depicted for the Blue River Basin, located in the eastern portion of the district, because the analysis is under development and has not been finalized as of the effective date of this IMP. Tri-Basin NRD will use the most up-to-date stream depletion data available to make decisions as laid out in the District's rules and regulations.

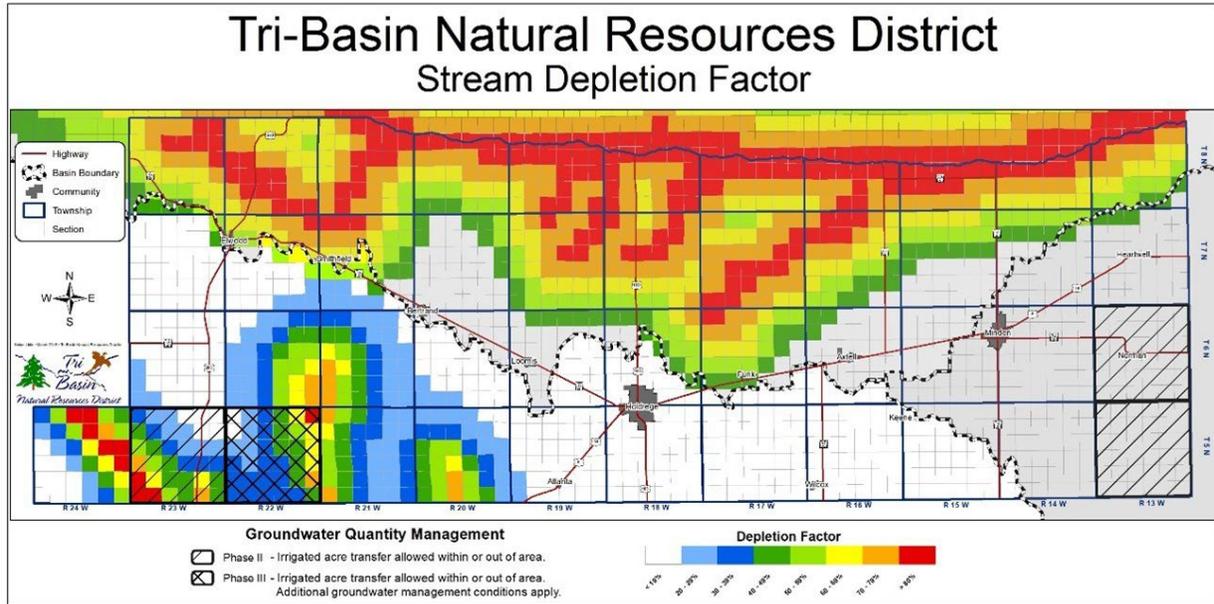


Figure 4. Stream Depletion Factor map for both the Republican River Basin (southwest), and the Upper Platte River Basin (north). The Blue River Basin (east) is not depicted. This figure is an example of stream depletion factor data and will not be used for any management decisions or analysis.

C. Monitoring Network

Observation wells and stream gages within Tri-Basin NRD are shown in Figure 5. Observation wells are used for monitoring groundwater levels, and stream gages monitor streamflow.

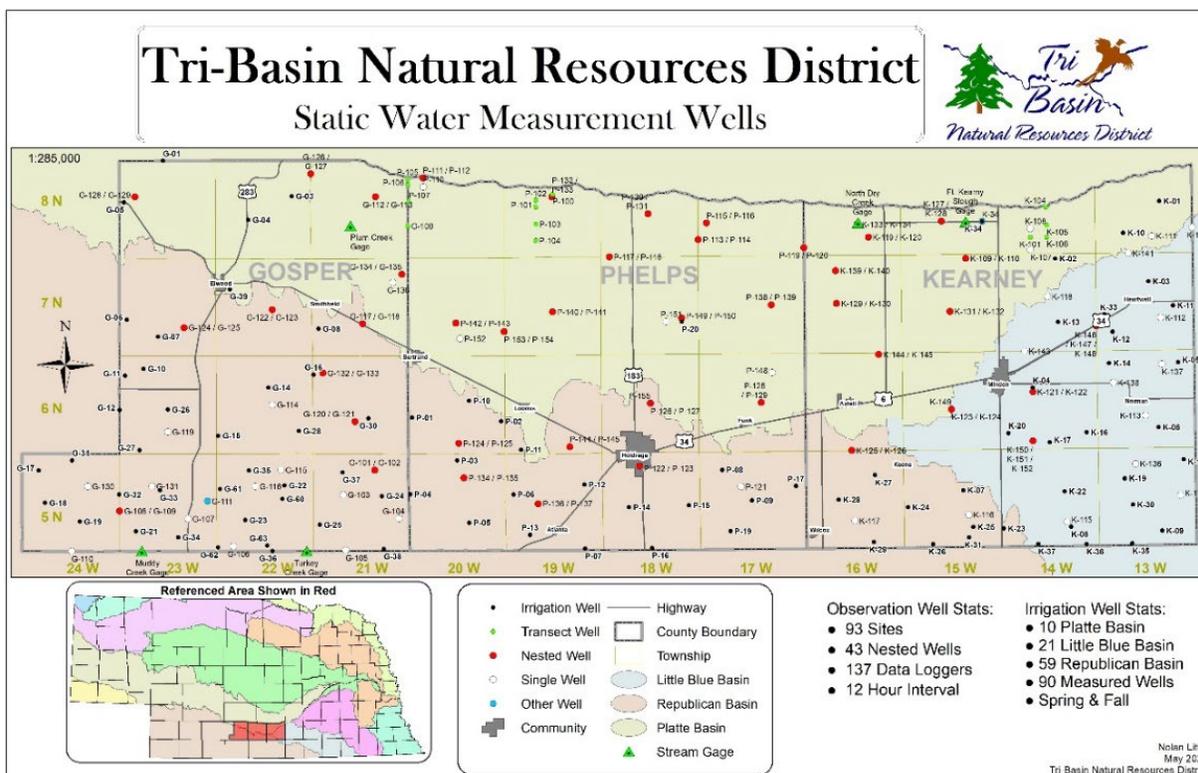


Figure 5. Static Water Measurement Wells and Stream Gages

V. Republican River Basin IMP Goals and Objectives

Pursuant to Neb. Rev. Stat. § 46-715 (2), the goals and objectives of an 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 residents of Tri-Basin NRD are assured for both the short term and long term. The following goals and objectives are adopted by Tri-Basin NRD and DWEE to achieve that purpose.

Tri-Basin NRD and DWEE have adopted the following Goals and Objectives:

A. Goals

1. Assist the State of Nebraska, in cooperation with other Republican Basin NRDs, in maintaining compliance with the Compact.
2. Maximize Tri-Basin NRD constituents’ efficient and beneficial consumptive use of the available water supply, increase certainty for long-range planning of utilization and conservation of water supplies, and increase collaboration among all water users in Tri-Basin NRD.

3. Continue to support the development and maintenance of digital water management models, databases, streamgages, observation wells and other tools and facilities needed to accurately measure and clearly depict the current state of groundwater and surface water resources as well as potential future water resource trends and conditions.
4. Limit groundwater irrigated acres within the Republican River Basin portion of the Tri-Basin NRD to 2004 levels, with limited exceptions. Commercial and industrial groundwater use will also be limited and regulated in the Republican Basin portion of Tri-Basin NRD.

B. Objectives

1. Enforce existing Tri-Basin NRD rules and regulations, to the extent necessary, to ensure that the NRD will sustain a hydrologically balanced condition to not cause a net depletion to streamflow at the District's southern boundary.
2. Tri-Basin NRD will ensure that Republican River streamflow needed for existing surface water appropriations and ground water uses will not be depleted by water uses developed after September 15, 2004. This objective will be accomplished by offsetting depletions caused by new water uses via water conservation incentives, stream baseflow enhancement and other depletion offset projects, mandated reductions in water uses, or some combination of these three methods.
3. Tri-Basin NRD will manage consumptive groundwater use to the greatest extent legally and physically practical in order to maintain groundwater levels at or above 1981-85 average levels.
4. Tri-Basin NRD and DWEE will prohibit landowners, with limited exceptions for *de minimis* uses such as livestock wells and domestic wells that are not capable of pumping more than 50 gallons per minute, from initiating new or expanded uses of water that increase Nebraska's computed beneficial consumptive use of water within the Republican River Basin portion of Tri-Basin NRD.
5. Tri-Basin NRD will certify all land irrigated with groundwater and track transfers and changes in use. DWEE will also continue to track surface water diversions, surface water transfers and those municipal and industrial groundwater transfers that are within its concurrent jurisdiction with Tri-Basin NRD.
6. DWEE shall ensure administration of surface water appropriations in the basin is in accordance with the Compact and Nebraska law.
7. Tri-Basin NRD and DWEE will continue to investigate and explore water augmentation and retiming projects that would add to or retime imported water as well as the water

- supply within the basin. Such projects include, but are not necessarily limited to, the following:
- a. Leasing or purchasing surface water and/or groundwater.
 - b. Augmentation wells, both within and outside of the Republican River Basin.
 - c. Trans-basin diversion projects.
 - d. Conjunctive management for surface water irrigation projects.
8. Develop and implement plans, in collaboration with Central Nebraska Public Power and Irrigation District (CNPPID), its customers, and other affected water users, that continue and, to the extent possible, increase groundwater recharge and stream baseflow enhancement from Platte Basin surface water supplies in amounts sufficient to sustain existing groundwater uses and to maintain imported water contributions to the Republican River Basin.
 9. Develop and maintain the necessary analytical tools and other programs and projects needed to implement this IMP.

VI. Action Items

This Chapter contains the action items necessary to achieve the goals and objectives of this IMP. These actions range from maintaining current regulatory controls, the potential for additional controls if the controls prove ineffective or if Compliance Standards cannot be achieved through the other actions taken by Tri-Basin NRD and DWEE, and ongoing non-regulatory activities, such as information and education efforts. The controls will be implemented with the goal of maintaining Nebraska's compliance with the Republican River Compact in accordance with *Neb. Rev. Stat. §§ 46-715(4)(b)*, the RRCA Accounting Procedures, and the Republican River Basin-Wide Plan.

Tri-Basin NRD will periodically review the District's rules and regulations to ensure that they support Tri-Basin NRD's efforts to achieve and maintain conformance with this IMP's goals, objectives, compliance standards, other controls and management actions. Any changes to the District's rules and regulations must not conflict with this IMP or the Republican River Basin-wide Plan and shall be sufficient to meet the Compliance Standards and Other Controls and Management Actions set forth below.

Tri-Basin NRD may adjust, modify, or expand the controls carried out in their rules and regulations to include additional controls, as deemed necessary and appropriate by the Board of Directors, to achieve these IMP's goals, objectives, Compliance Standards, and other controls. However, if the Board desires to remove any of the controls specified in this IMP from their rules and regulations, Tri-Basin NRD and DWEE must first amend this IMP prior to removal of those controls. Tri-Basin NRD will notify DWEE of any other Rules and Regulations modifications in

order for DWEE to provide testimony as required under Neb. Rev. Stat. § 46-743 (7). The specific processes for carrying out the groundwater controls shall be set forth in detail and implemented through Tri-Basin's Rules and Regulations – *Tri-Basin Natural Resources District: Rules and Regulations for Management and Protection of Land and Water Resources* (Rules and Regulations).

As described within this Chapter, more details on the statutes or rules followed by Tri-Basin NRD or DWEE can be found at the offices of each respective agency. The full length of those documents is not repeated herein, so the reader is directed to each agency to read the full details on how any particular action item may be carried out.

Controls

The following subsections contain the groundwater and surface water controls for this IMP. The groundwater controls are further subdivided into "Compliance Standards" and "Other Controls and Management Activities".

A. Groundwater Regulatory Action Items (controls)

Tri-Basin NRD will utilize the groundwater controls provided by Neb. Rev. Stat. §§ 46-715 (2)(c) and 46-739 to form the groundwater controls component of this IMP. The controls that DWEE and Tri-Basin NRD agree are necessary and shall continue to be implemented in the Republican River Basin portion of Tri-Basin NRD, as specified in their Rules and Regulations, are: 1) Moratorium on wells for new water uses, with limited exceptions for de minimis uses and variances; 2) Certification of irrigated land and other non de *minimis* water uses; 3) Regulation of groundwater transfers; 4) Metering and reporting of water uses, including total annual volume of groundwater pumped, irrigation system details, type of use, and any volume of water returned to the stream; 5) Allocation of groundwater use where determined by the NRD to be appropriate.

Additionally, the Rules and Regulations adopted by Tri-Basin NRD shall contain provisions that assist with long-term Compact compliance and adequately ensure the Republican River streamflow needed for existing surface water appropriations and ground water uses will not be depleted by water uses developed after September 15, 2004, in accordance with *Neb. Rev. Stat.* 46-715(4)(b) and (c) .

The groundwater controls in this IMP include the Compliance Standards and the Other Controls and Management Activities listed below.

a. Compliance Standards

i. Purpose

These compliance standards were established by Tri-Basin NRD and DWEE to assess whether the course of action taken by the District is sufficient to sustain a hydrologically balanced condition at the southern boundary of the district, such that Tri-Basin NRD does not cause a net groundwater depletion to the Republican River Basin and affect Nebraska's ability to comply with the Compact. Tri-Basin NRD's efforts shall be evaluated in connection with any other relevant considerations, including the information and data provided by DWEE and past action by Tri-Basin NRD.

ii. Duration

These compliance standards shall be used to assess the action taken by Tri-Basin NRD. DWEE and Tri-Basin NRD shall annually evaluate the sufficiency and effectiveness of the Compliance Standards to determine whether amendments or modifications to the standard are necessary to ensure Nebraska's compliance with the FSS, RRCA Resolutions, and the Compact. Nothing contained herein shall prohibit or preclude any amendment or revision, at any time, by joint agreement of DWEE and Tri-Basin NRD, when such action is appropriate. 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*.

iii. Standards

Tri-Basin NRD shall adopt and implement rules and regulations that shall ensure the compliance standards are met. The standards shall be effected through procedures described in the "Monitoring and Studies" section. The "Monitoring and Studies" section defines a hydrologically balanced condition and outlines the methods for evaluating that condition. The Compliance Standards are:

- A. Tri-Basin NRD will sustain a hydrologically balanced condition at the District's southern boundary on a three-year rolling average basis. This standard will be assessed annually using the methodology established in the "Monitoring and Studies" section of this IMP and is Tri-Basin NRDs equivalent to the RRBWP MHO A test.
- B. Tri-Basin NRD will sustain a hydrologically balanced condition at the District's southern boundary over the long-term. The objective of this standard is to maintain Tri-Basin NRD net groundwater depletions at a

relatively constant level over the long-term in accordance with MHO B of the RRBWP. Maintaining a hydrologically balanced condition means that Tri-Basin NRD is not causing net groundwater depletions to the Basin in any year, not just on a three-year rolling average basis, and therefore, not increasing net depletions within the Basin. This standard will be assessed for net depletions, beginning in 2013, every five years using the methodology established for MHO B of the basin-wide plan.

b. Other Controls and Management Actions

The following groundwater controls and management activities are in addition to the Compliance Standards listed above.

- i. If the annual evaluation indicates a hydrologically balanced condition is no longer being achieved, Tri-Basin NRD will take additional management actions as agreed to by Tri-Basin NRD and DWEE.
 - (a) DWEE will provide its assessment of Tri-Basin NRD's hydrologically balanced condition at the annual IMP progress review meeting.
 - (b) Tri-Basin NRD, within the Republican River Basin portion of their District, will only be expected to take additional management actions to make up for depletions to streamflow if the District does not show a hydrologically balanced condition in the annual evaluation.
 - (c) That when required by the IMP, Tri-Basin NRD will undertake management actions, including but not limited to, surface water leasing, groundwater leasing, and streamflow augmentation in Republican River Basin tributaries within the district, or in other parts of the basin, in cooperation with other Republican Basin NRDs, to the extent necessary to restore the hydrologically balanced condition and make up for the shortfall.
 - (1) Tri-Basin NRD will provide required water at a time and location agreed to with DWEE that will assist in Compact compliance.
 - (2) In the first year that the evaluation of a hydrologically balanced condition shows that a three-year average of annual net depletions at Tri-Basin NRD's southern boundary exceeds 1,000 acre-feet, Tri-Basin will be required to provide no more than 1,000 acre-feet of augmentation water. Tri-Basin NRD will provide the remaining water in a subsequent year pursuant to this IMP.
 - (d) If Tri-Basin NRD is unable to achieve a hydrologically balanced condition as determined by the annual evaluation for two or more consecutive years, Tri-Basin NRD will implement additional management actions, including but not limited to increasing augmentation capacity, to achieve

a hydrologically balanced condition or Tri-Basin NRD and DWEE will re-evaluate the terms of this IMP.

- (e) That neither Tri-Basin NRD nor DWEE will require this IMP to be amended solely for the purpose of changing the responsibility of water users within Tri-Basin NRD due to the failure of other Republican Basin NRDs to implement or enforce their IMPs as needed to meet their share of the responsibility to keep Nebraska in compliance with these interstate compacts, agreements, and court decrees.
- (f) During Compact Call Years in which Tri-Basin NRD is required to implement management actions to ensure compliance with this IMP, these management actions will be implemented through the authorities granted by the Nebraska Ground Water Management and Protection Act, Neb. Rev. Stat. §§ 46-701 to 46-755. Tri-Basin NRD will provide a letter describing the details of such management actions to DWEE by January 31 of each year for evaluation. If DWEE determines that the management actions detailed in Tri-Basin NRD's letter are insufficient to ensure compliance with this IMP, Tri-Basin NRD and DWEE will jointly assess what additional groundwater controls and regulations, or management actions Tri-Basin NRD will implement to make up for any expected shortfall as identified in the annual forecast. Procedures for compliance with this control are described in the "Monitoring and Studies" section.

B. Surface Water Regulatory Action Items (controls)

The authority for the surface water component of this IMP is Neb. Rev. Stat. §§ 46-715 and 46-716 will be implemented and/or continued within the Republican Basin portion of Tri-Basin NRD by DWEE:

1. 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 U.S. Bureau of Reclamation project, farm turnouts also will be required to be metered. All meters shall have a totalizer and need to be approved by the Cambridge field office. All appropriators will be monitored closely to ensure that all criteria pertinent to the applicable permit or by statute are followed.
2. DWEE's moratorium on the issuance of new surface water permits was made formal by Order of the Director dated July 14, 2004, and will be continued. Exceptions and variances may be granted to the extent permitted by statute, rules or to allow issuance of permits for existing reservoirs that currently do not have such permits.
3. 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 and related DWEE rules or the criteria found in Neb. Rev. Stat. §§ 46-2,120 to 46-2,130 and related DWEE rules.

4. DWEE completed the adjudication process for 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 will be used by DWEE to monitor the use of surface water and to make sure that unauthorized irrigation is not occurring. DWEE also will be proactive in initiating subsequent adjudications whenever information available to DWEE indicates the need for adjudication as outlined by state statutes.
5. During Compact Call Years, as determined through the forecast set forth in Neb. Rev. Stat. § 46-715(6), DWEE will regulate and administer surface water in the basin as necessary to ensure Compact compliance.
6. Permitted actions authorized by DWEE will include information on the location, estimated amount, and timing of depletions caused by each permitted new or expanded water use, as well as the associated offset and the location, estimated amount and timing of the offset's accretions to the river.

C. Non-Regulatory Actions

1. Information and Education Programs

Tri-Basin NRD and DWEE will continue to provide educational materials to the public and carry out educational activities that inform the public about the following issues, among others: hydrologically connected groundwater 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, improving irrigation efficiency, utilizing alternative crops with lower irrigation requirements, and funding sources for programs that enhance water supply. These educational materials and activities include public meetings, held jointly as needed, youth education, pamphlets, and website information.

2. Incentive Programs

Tri-Basin NRD and DWEE, alone or in cooperation with other parties, have established and implemented financial incentives and qualified projects as described in Neb. Rev. Stat. §2-3226.04 and 2-3252 to reduce beneficial consumptive use of water within Tri-Basin NRD. These projects include, but are not limited to (1) acquisition by purchase or lease of surface water or ground water rights, including storage water rights with respect to a river or any of its tributaries, (2) acquisition by purchase or lease or the administration and management, pursuant to mutual agreement, of canals and other works, including reservoirs, constructed for irrigation from a river or any of its tributaries, (3) vegetation management, including, but not limited to, the removal of invasive species in or near a

river or any of its tributaries, (4) Tri-Basin NRD's Water Conservation Incentive Program, which requires irrigators to limit irrigation water use by agreeing to an allocation, and (5) augmentation of stream flows.

- a. As a condition for participation in incentive programs, water users or landowners are 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.
- b. Tri-Basin NRD and DWEE intend to continue to promote existing conservation programs that result in reductions in use of integrated water resources, such as the Conservation Reserve Enhancement Program (CREP) and Environmental Quality Incentives Program (EQIP), which are primarily funded by the U.S. Department of Agriculture. Tri-Basin NRD and DWEE may establish and implement financial or other incentive programs to reduce beneficial consumptive use of water within Tri-Basin NRD. Such incentive programs may include any program authorized by NRD rules and policies, state law or federal programs.
- c. Tri-Basin NRD developed the Water Conservation Incentive Program (WCIP) as a way to give groundwater irrigators more flexibility in water use in exchange for agreeing to pumping limits. This program offers participants the opportunity to trade water use credits, with District approval.
- d. Tri-Basin NRD and DWEE will continue to collaborate through contracts to provide cost-share funding towards irrigation efficiency practices. Examples of these practices include, but are not limited to, use of soil moisture probes, remote telemetry water metering, remote sensing of evapotranspiration, and remote canal operation.

3. Conjunctive Management

Conjunctive management, or retiming water, refers to the combination of two categories of conjunctive management activities: storing water during periods when water is naturally abundant and (in this instance) using stored water to augment stream baseflows during dry periods. Tri-Basin NRD and DWEE will continue to collaborate on the operation of ongoing conjunctive management projects, and the identification and development of potential new projects.

4. Water Banking

A water banking process may be developed to enable Tri-Basin NRD to more readily achieve the objectives of this IMP and to better protect groundwater supplies. It would also give irrigators another tool to improve their irrigation efficiency.

- a. Purposes of the water bank would be to:
 - i. Offset existing consumptive water uses;
 - ii. Help Tri-Basin NRD track temporary and permanent reductions of irrigated land and to quantify any water use credits that result from these reductions;
 - iii. Help water users find offsets for new consumptive water uses; and
 - iv. Reconfigure irrigated acres to achieve maximum water use efficiency.
- b. If Tri-Basin NRD purchases or otherwise acquires certified groundwater irrigated acres or other groundwater uses or surface water appropriations within the Republican River Basin portion of the District, the NRD could decide to retain control of the transferred water uses for purposes of:
 - i. Offsetting new or expanded consumptive uses,
 - ii. Saving to meet statutory requirements or interstate agreement obligations,
 - iii. Saving to meet future incremental targets toward achieving a hydrologically balanced condition, as described in Goal 1 of this IMP,
 - iv. Future sales to individuals as depletion offsets for development of new consumptive uses of groundwater within Tri-Basin NRD, or
 - v. Enabling irrigators to aggregate certified groundwater-irrigated acres for the purpose of improving irrigation efficiency. Transfers for this purpose are likely to reduce groundwater pumping but may or may not result in reductions in depletions to streamflow.
- c. In determining the amount of accretions to the stream that will be credited due to the transfer of groundwater or surface water uses, Tri-Basin NRD and DWEE will agree on the best available tools or methods to utilize for calculating these accretions (i.e., the bankable volume of water). The process used to determine the accretions will consider the impact to streamflow through at least a fifty (50) year period. Additionally, these calculations will determine the timing and location of streamflow changes resulting from transfers to the water bank, as well as any impacts to existing groundwater or surface water users.
- d. If Tri-Basin NRD intends to purchase, lease, or otherwise acquire a surface water appropriation for deposit in the water bank, the District will contact DWEE prior to such purchase. DWEE will conduct a field investigation of the surface water appropriation and notify Tri-Basin NRD of the results within ninety (90) days. Tri-Basin NRD will work collaboratively with DWEE in performing analyses to evaluate the bankable volume of water resulting from purchase, lease, or acquisition by

other means of surface water appropriations. If surface water appropriations are transferred to another purpose or point of use, Tri-Basin NRD will follow the appropriate statutes and rules and regulations of DWEE for approval of such transfers.

- i. Tri-Basin NRD may obtain and maintain permanent easements on property from which surface water or groundwater uses have been retired.
- ii. All deposits, withdrawals, and other activities (purchases, sales, leases, transfers, and assignments) related to water credit accounting will be annually reported to DWEE.
- iii. Any water banking activity carried out by Tri-Basin NRD will follow the procedures for any groundwater regulatory action (e.g., transfers, certification, or municipal and non-municipal industrial accounting) applicable to such activity. Any surface water-related water banking activity carried out by Tri-Basin NRD must follow the appropriate state statute and DWEE rules and regulations.

5. Riparian vegetation management

Tri-Basin NRD will utilize available resources to identify occurrences of invasive riparian plants. When infestations are detected, Tri-Basin NRD will identify and allocate available resources toward eradication of these plants and encourage the use of conservation best management practices. DWEE will assist Tri-Basin NRD in these efforts when possible.

VII. Monitoring and Studies

The overarching purpose of the “Monitoring and Studies” section of this IMP is to ensure that, in cooperation with the other Republican NRDs, Tri-Basin NRD and DWEE maintain compliance with the Compact. The objectives of the “Monitoring and Studies” of this IMP are:

- To gather and evaluate data, information, and methodologies used to increase understanding of the surface water and hydrologically connected groundwater system,
- Test the validity of conclusions and information upon which this IMP is based, and
- To provide timely data and information that will support decision makers in properly managing the water resources within Tri-Basin NRD and the Republican River Basin as a whole.

Together, the components of this “Monitoring and Studies” section constitute a monitoring plan, in accordance with Neb. Rev. Stat. §46-715 (2)(e), for this IMP. This monitoring plan includes tracking and reporting requirements and procedures regarding how DWEE, Tri-Basin NRD and the other Republican River Basin NRDs will complete the following:

- Track and report water use activities, including annual IMP reporting, accounting for the RRCA, and annual reporting for the Basin-Wide Plan
- Monitor and ensure compliance with the Compact, this IMP, and the Basin-Wide Plan, and
- Gather and Evaluate Data, Information, and Methodologies

A. Annual Hydrologically Balanced Condition Evaluation

The purpose of the annual Hydrologically Balanced Condition Evaluation is to monitor this IMP's short-term Compliance Standard and is equivalent to Tri-Basin NRD's MHO A from the RRBWP. This section provides the specific procedure for completing the annual Hydrologically Balanced Condition Evaluation agreed upon by Tri-Basin NRD and DWEE. Tri-Basin NRD is in a hydrologically balanced condition as of the effective date of this IMP. An example of annual evaluation results are shown in Appendix A.

1. Annual Hydrologically Balanced Condition Evaluation Procedures

The annual Hydrologically Balanced Condition Evaluation will determine if Tri-Basin NRD has obtained a hydrologically balanced condition at the district's southern boundary on average over the previous three years. A hydrologically balanced condition for Tri-Basin NRD is defined as:

$$IWS + M \geq D$$

where "IWS" is imported water supply credit, "M" is accretions to streamflow due to Tri-Basin NRD management actions, and "D" equals streamflow depletions due to groundwater pumping within the Republican River Basin portion of Tri-Basin NRD. In other words, hydrologically balanced is when net depletions (D minus the sum of IWS and M) are greater than or equal to 0 within the Republican River Basin portion of Tri-Basin NRD.

Depletions to streamflow (D) and imported water supply credit (IWS) will be calculated to the southern boundary of Tri-Basin NRD using the RRCA groundwater model. Management actions (M) taken by Tri-Basin NRD to reduce depletions or augment streamflow will be evaluated using methods consistent with the RRCA Accounting Procedures.

The annual evaluation of the hydrologically balanced condition will use an average of the previous three years of depletions to streamflow (D) and imported water supply credit (IWS) and management actions (M).

2. Management Actions Requirements

DWEE will complete the evaluation annually to determine if Tri-Basin NRD is in a hydrologically balanced condition on average over the previous three years. DWEE will present results at the Tri-Basin NRD's annual IMP meeting, as well as at the annual Preliminary Forecast and Republican Basin-wide Plan meetings that occur between September 15 and the end of the year each year.

If the annual evaluation results are that a hydrologically balanced condition has not been obtained on average for the previous three years ($IWS + M < D$), Tri-Basin NRD is required to provide management actions yielding the volume of the average net depletions ($IWS + M - D$) at a time and location agreed to with DWEE that will assist in Compact compliance. The timing of the necessary management actions may occur in future Compact Call Years, as detailed in the Monitoring and Compliance section, but the yield will be credited to the hydrologically balanced condition in the last year of the evaluation's three-year average (i.e., the year prior to the evaluation).

B. Reporting Water Use Activities

The following subsections describe how water use activities will be tracked and reported. These include exchanging data and information for Compact accounting, the basin-wide plan, and this IMP.

1. Compact Accounting Data

Tri-Basin NRD and DWEE will make all documents, reports, records, and 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. Tri-Basin NRD agrees to make available annually GIS coverage maps of all lands irrigated, if such GIS coverage maps have been revised by the District since the previous version provided to DWEE, and to annually meter, record, and provide to DWEE its groundwater usage records and irrigation system details. Tri-Basin NRD will provide DWEE with this data no later than March 1 of each year. Tri-Basin NRD shall make copies of District actions taken on variances, offsets, and similar actions available to DWEE.

DWEE agrees to make available to Tri-Basin NRD all reports and records of the other Republican Basin NRDs necessary to determine their compliance with IMP requirements, as well as all documentation and reports utilized by DWEE to determine the basin's Compact-defined, virgin water supplies and Nebraska's compliance with the Compact.

In the event any materials are withheld by either DWEE or Tri-Basin NRD 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.

Compact accounting and data exchanges among the states shall be done annually in accordance with the FSS, dated December 15, 2002, including the RRCA Accounting Procedures and Reporting Requirements, which are contained in Appendix C thereof. An annual report of the RRCA is published each year. The accounting procedures, reporting requirements, and annual report of the RRCA are independent of this monitoring plan, and therefore not restated within this monitoring plan.

2. Data for Basin-Wide Plan Annual Report

DWEE and Tri-Basin NRD will annually produce a report of progress on the basin-wide plan. As specified in the basin-wide plan, this report will include data related to water supplies and uses. To assist with preparation of the report, Tri-Basin NRD will provide DWEE data as described in the basin-wide report's Table 3.1 and a summary of annual progress on each of the basin-wide plan's action items.

3. Data for IMP Annual Reports

Tri-Basin NRD and DWEE will produce and exchange reports outlining progress being made toward achieving the goals and objectives of this IMP. These reports will be presented and discussed at an annual meeting held at a time, place and date agreeable to both Tri-Basin NRD and DWEE between September 15th and December 31st. Tri-Basin and DWEE reports will include:

- a. Tri-Basin NRD report will include but is not limited to: groundwater well permits and variances; certified irrigated acres and other non de minimis uses; groundwater transfers; and metering and reporting of water uses, including the total annual volume of water returned to the stream; and any variances issued by Tri-Basin NRD.
- b. DWEE's report will include but is not limited to issuance of surface water, dam safety, and groundwater transfer permits; reports of water diverted and, when available, water stored by surface water users; and associated offsets for any new permits issued.
- c. Tri-Basin NRD and DWEE will jointly evaluate any new or expanded permitted groundwater and surface water activities. Information to exchange and evaluate includes:

- i. Location of new use,
- ii. Annual pumping and estimated future pumping,
- iii. Timing of depletions caused by each permitted new or expanded water use,
And
- iv. Associated offsets and the location, estimated amount and timing of the offset's accretions to the river.

C. Forecast and Compact Call Year

Each year, in compliance with *Neb. Rev. Stat. § 46-715(6)*, DWEE, in conjunction with *URNRD*, *MRNRD*, and *LRNRD*, 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. If this evaluation indicates that additional management actions might be necessary in the coming year for Compact compliance, a Compact Call Year will be designated.

Tri-Basin NRD will only be required to provide management actions to offset previous years' net depletions as calculated through the Annual Hydrologically Balanced Condition Evaluations during a year that DWEE has declared a Compact Call Year.

Each year, DWEE will present at least one preliminary forecast at a basin-wide meeting and will publish a Final Forecast and Compact Call Year Determination. The details of these two forecasts and relevance to this IMP are as follows.

1. Preliminary Forecast and Basin-Wide Meeting

DWEE will present preliminary forecast results at a basin-wide meeting. At least one such basin-wide meeting will take place each year, between September 15th and December 31st. In addition to Tri-basin NRD, this meeting shall include representatives of DWEE, *URNRD*, *MRNRD*, *LRNRD*, and surface water project sponsors. Participants will discuss the forecasted streamflow and surface water consumptive use. From these discussions, surface water project sponsors may present a plan to DWEE to achieve a consumptive use that is less than forecasted consumptive use. Such a plan could allow surface water project sponsors to avoid a potential closing notice during a Compact Call Year.

For Tri-Basin NRD, DWEE will present the results of the annual Hydrologically Balanced Condition Evaluation and the total of any management action carry-over from previous net depletions (non-hydrologically balanced conditions).

2. Final Forecast and Compact Call Year Determination

DWEE will publish the final forecast before January 1 of each year as required by *Neb. Rev. Stat. § 46-715(6)*, including both short and long-term forecasts for LRNRD, MRNRD, and URNRD, and whether a Compact Call Year will be designated. In Compact Call Years, DWEE and the NRDs will take additional steps to monitor and ensure Compact compliance.

D. Monitoring and Compliance

This section indicates the actions Tri-Basin NRD and DWEE will take to monitor and ensure compliance with the Compact, this IMP and the basin-wide plan.

1. Compact Compliance and Management Actions Evaluation

a. Compact Compliance

Before January 1 of each Compact Call Year in which Tri-Basin NRD is required to implement additional management actions to resolve a hydrologically unbalanced condition, DWEE will provide Tri-Basin NRD with the amount of yield from potential management actions needed within the year, based on Tri-Basin's water balance. By January 31 of that same year, Tri-Basin NRD will inform DWEE of the management actions the NRD intends to take to ensure compliance. By April 30th DWEE will evaluate whether the planned management actions are sufficient to ensure compliance, as described under "Management Actions Notification, Response, and Evaluation."

During a Compact Call Year, DWEE will implement additional surface water controls. DWEE will also share the State's preliminary RRCA accounting estimates with Tri-Basin NRD by the 10th of each month, beginning in May of each Compact Call Year.

If the Hydrologically Balanced Condition Evaluation shows Tri-Basin NRD does not achieve a hydrologically balanced condition in a year when a Compact Call Year is anticipated and the other Republican NRDs plan to carry out management actions prior to the end of that year, Tri-Basin NRD and DWEE will coordinate as described under "Management Actions Notification, Response, and Evaluation," to address the imbalance. After consultation with DWEE and other Republican Basin NRDs, Tri-Basin will undertake management actions in conjunction with the other NRDs.

In a Compact Call year when Tri-Basin NRD is required to provide management actions, the District's water balance will be applied to the State's estimated compact obligations prior to partitioning the remaining compact obligations among the other Republican NRDs.

This IMP's short-term Compliance Standard examines whether Tri-Basin NRD is maintaining a hydrologically balanced condition on 3-year rolling average at the southern boundary of the District. This standard will be assessed every year using the methodology established in the "Hydrologically Balanced Condition Evaluation Procedures" section of this IMP. If Tri-Basin is not maintaining a hydrologically balanced condition, the parties may determine that additional management actions will be necessary to offset the net depletions in the current or subsequent Compact Call Year. Therefore, the extent of management actions required for Tri-Basin NRD in any given Compact Call Year will be the total of the net depletions from the most recent Hydrologically Balanced Condition Evaluation and any management action carry-over from previous net depletions established at the previous Preliminary Forecast and Basin-Wide meeting, subject to Other Controls and Management Actions. DWEE and Tri-Basin NRD will communicate about and evaluate management actions as described under "Management Actions Notification, Response, and Evaluation."

b. Management Actions, Notifications, Response, and Evaluation

If DWEE determines management actions are or might be necessary, DWEE will notify Tri-Basin NRD of the volume of water necessary to ensure compliance with the Compact, this IMP, or the basin-wide plan. Within 30 days of such notification, Tri-Basin NRD will provide a letter to DWEE containing details about the management actions Tri-Basin NRD intends to take to ensure compliance. DWEE will evaluate the management actions in Tri-Basin NRD letter to determine whether they are sufficient to ensure compliance and then will send Tri-Basin NRD a letter summarizing the results of DWEE's evaluation. If DWEE determines that the management actions detailed in Tri-Basin NRD's letter are insufficient to ensure compliance with the Compact, IMP, or basin-wide plan as described under "Compact Compliance," Tri-Basin NRD will collaborate with DWEE to identify and implement additional, projects controls and/or regulations to make up the remaining deficit.

2. IMP and Basin-Wide Compliance

As described in the previous section, this IMP contains several provisions to ensure annual Compact compliance. The IMP also includes monitoring and mitigation requirements for other purposes, including long-term management of groundwater depletions to streamflow and protecting existing surface water and groundwater users. In addition, the basin-wide plan contains five Measurable Hydrologic Objectives (MHOs) for monitoring the progress of plan implementation. DWEE and the Republican Basin NRDs will monitor and evaluate compliance with each of these

provisions to determine whether management actions are necessary, as described in this section.

The objective of the IMP's long-term Compliance Standard is to maintain groundwater depletions to streamflow at a relatively constant or decreasing level over the long-term. This Compliance Standard is the equivalent of MHO B from the basin-wide plan. As described in the Compliance Standard, DWEE will assess this standard every five years using the methodology established for MHO B (*Supplement to the Republican River Basin-Wide Plan: Methodology for MHO B, 2020*). If this analysis indicates that depletions to streamflow are increasing in the long-term, DWEE and Tri-Basin NRD will jointly assess whether additional management actions are necessary to accomplish this objective.

In accordance with Neb. Rev. Stat. § 46-715 (4)(c) and the "Groundwater Controls" section of this IMP, DWEE will annually evaluate whether offsets are necessary to mitigate new net depletions resulting from augmentation pumping or other management actions, in order to protect existing surface water appropriators and groundwater users. If DWEE's evaluation indicates offsets may be necessary, DWEE and Tri-Basin NRD will jointly assess whether additional management actions are necessary to mitigate new depletions.

The basin-wide plan's MHOs will be evaluated as described in the basin-wide plan, Supplement to the Republican River Basin-Wide Plan: Methodology for MHO B (2020), and Supplement to the Republican River Basin-Wide Plan: Methodology for MHO C (2020), according to the schedule laid out in the basin-wide plan. Should evaluation indicate that any MHO is not being achieved, DWEE and Tri-Basin NRD will jointly assess whether additional management actions are necessary, as described in the basin-wide plan.

E. Plan to Gather and Evaluate Data, Information, and Methodologies

As outlined in Neb. Rev. Stat. § 46-715(2)(e), ongoing programs and new studies or other projects may become a source of information that is used to evaluate the effectiveness of controls adopted by Tri-Basin NRD and DWEE. Tri-Basin NRD and DWEE will jointly pursue and/or evaluate studies, contingent upon budget and staff resources, to evaluate their usefulness for helping Tri-Basin NRD and DWEE achieve the goals and objectives of this IMP.

The following potential studies have been identified by Tri-Basin NRD and DWEE:

1. Potential for reducing consumptive water use by crops and other vegetation and evaluation of streamflow depletion impacts of various methods of:
 - a. Crop rotation,

- b. Vegetation management,
 - c. Reducing groundwater pumping through Irrigation scheduling and other means,
 - d. Update previous surveys of the type and location of irrigation systems throughout Tri-Basin NRD,
 - e. Tillage practices, cover crops and their impacts on evapotranspiration, runoff and infiltration of water into aquifers.
 - f. Other agricultural and land management best management practices, and
 - g. Enhancing conjunctive management.
2. Tri-Basin NRD works with Twin Valley Weed Management Area and with other agencies and private landowners to reduce the density and coverage of infestations of noxious weeds and invasive plants in riparian areas within the district. Tri-Basin NRD also works with landowners, agencies, and others to implement sustainable, long-term riparian land and wetland management plans that have as their goal returning these lands to their native condition. Progress made toward meeting this objective will be measured in terms of acres of riparian land treated using herbicides, prescribed fire and other methods to reduce invasive plant infestations and upon which sustainable, long-term management plans are being implemented that will improve the condition of riparian ecosystems. Tri-Basin NRD and DWEE will evaluate available, reputable, relevant scientific studies that quantify consumptive water use by invasive plants to determine whether and to what extent invasive plants consume water at higher rates than native vegetation.

Additionally, data gathered and assessed as described in the "Monitoring" section of the Republican River Basin-Wide Plan, or any studies undertaken in fulfillment of that plan, may be considered for the purposes outlined in Neb. Rev. Stat. § 46-715(2)(e) for this IMP.

VIII. Review of and Modifications to the IMP

A. Modifying the IMP

1. Tri-Basin NRD and DWEE will jointly determine whether modifications or updates need to be made to this IMP. Proposed modifications or updates to this IMP will be discussed at the annual meeting or, as necessary, at other meetings between Tri-Basin NRD and DWEE.
2. Modifications to this IMP will require agreement between Tri-Basin NRD and DWEE regarding proposed changes. After the proposed changes have been agreed to, a joint hearing on whether to adopt those changes will be held. Following the joint hearing,

Tri-Basin NRD and DWEE will, by order, adopt the amendments or other revisions to this IMP.

3. Nothing in this IMP will compel Tri-Basin NRD or DWEE to continue to pursue the goals and objectives of this IMP if changes are made in state or federal law that make the integrated management planning process unnecessary or irrelevant.

IX. Information Considered

Information used in the preparation of this IMP and to be used in the implementation of this IMP can be found in the list below. If any of the documents below are updated during implementation of this IMP, the newer versions will also be considered. These materials can be obtained by contacting Tri-Basin NRD or DWEE.

A. Republican River Compact Information

1. The Republican River Compact, *Neb. Rev. Stat. Appendix § 1-106*, effective December 31, 1942.
2. Supreme Court of the United States, in the Matter of Kansas v. State of Nebraska, First Report of the Special Master, January 28, 2000.
3. Final Settlement Stipulation of the Supreme Court of the United States in the Matter of State of Kansas v. the State of Nebraska and State of Colorado, Effective December 15, 2002.
4. Supreme Court of the United States, in the Matter of Kansas v. States of Nebraska and Colorado, Opinion of the court, on Exceptions to Report of Special Master, Decided February 24, 2015.
5. RRCA Ground Water Model, June 30, 2003, updates 2001–2025, and simulation runs of said model.
6. Rules and Regulations of the RRCA, revised August 21, 2020.
7. RRCA Accounting Procedures and Reporting Requirements, revised August 21, 2020.
8. Current RRCA resolutions.

B. DWEE and NRD information

1. Statutes
 - a. Neb. Rev. Stat. §§46-713 through 46-720, 46-739 through 46-740, 46-743, 46-755, and 46-756.
2. Plans

- a. The previous generation of the Integrated Management Plan for those portions of Tri-Basin NRD located within the Republican River Basin Jointly Developed by Tri-Basin Natural Resources District and the Nebraska Department of Natural Resources (2012).
 - b. Republican River Basin-Wide Plan, jointly developed by the Upper Republican, Middle Republican, Lower Republican, and Tri-Basin Natural Resources Districts and the Nebraska Department of Natural Resources, effective March 1, 2019.
 - c. Tri-Basin Natural Resources District Ground Water Management Plan.
 - d. Monitoring & Studies Technical Memorandum for the URNRD, MRNRD, and LRNRD IMPs Jointly developed by: The Nebraska Department of Natural Resources (NeDNR), The Upper Republican Natural Resources District (URNRD), The Middle Republican Natural Resources District (MRNRD), and The Lower Republican Natural Resources District (LRNRD), effective September 27, 2021.
3. Rules and Regulations
 - a. Tri-Basin Natural Resources District: Rules and Regulations for Management and Protection of Land and Water Resources
 - b. Department of Natural Resources Rules for Groundwater, Title 456 Neb. Admin. Code.
 - c. Department of Natural Resources Rules for Surface Water, Title 457 Neb. Admin. Code.
 - d. The items listed in Department of Natural Resources Rules for Process and Procedures, Title 454 Neb. Admin. Code.
 4. *Forecast of Allowable Depletions in the Republican River Basin*, published annually by DWEE.
 5. Department of Natural Resources Order Declaring Formal Moratoriums in the Matter of the Platte River Basin, the North Platte River Basin, the South Platte River Basin, the Republican River Basin, the White River Basin, and the Hat Creek River Basin, dated July 14, 2004.
 6. Applicable Case Law.
 7. Additional data on file with Tri-Basin NRD and DWEE.

X. Definitions

Also see glossary in Republican River Basin-Wide Plan ([link below](#))

Also see definitions in RRCA Accounting Procedures ([link below](#))

Basin-Wide Plan

See "*Republican River Basin-Wide Plan.*"

Beneficial Consumptive Use

The water supply consumed through the activities of man.

Compact

See "Republican River Compact."

Compact Call Year

A year in which the maximum amount of water that may be available from streamflow for beneficial use in the short-term to comply with the Compact is expected to be exceeded if sufficient surface water and groundwater controls and management actions are not taken, as determined by the Forecast procedures outlined in the *Monitoring and Studies Technical Memorandum for the URNRD, MRNRD, and LRNRD IMPs*

Compact Compliance

Adhering to the water use stipulations outlined in the Compact, the Final Settlement Stipulation, and Resolutions adopted by the RRCA.

Computed Beneficial Consumptive Use (CBCU)

Streamflow depletion resulting from activities of man, as defined in the RRCA Accounting Procedures.

De Minimis

Lacking significance or importance.

Final Settlement Stipulation (FSS)

An agreement entered into on December 15, 2002, by the RRCA member states which defines how compliance within the Compact's requirements is to be determined.

Forecast

An annual forecast of 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.

Groundwater Mound

An area in which groundwater levels have increased significantly from pre-development levels, primarily due to canal seepage and irrigation using surface water from the Platte River.

Hydrologically Balanced Condition

Imported water supply credit and management actions equal or exceed streamflow depletions.

Imported Water Supply Credit

The accretions to stream flow due to water imports from outside of the Basin as computed by the RRCA Groundwater Model. The Imported Water Supply Credit of a State shall not be included in the Virgin Water Supply and shall be counted as a credit/offset against the Computed Beneficial Consumptive Use of water allocated to that State, except as provided in Subsection V.B.2. of the Stipulation and Subsections III.I. – J. of the RRCA Accounting Procedures. Imported water supply credit was previously referred to in the first-generation IMP as the mound credit.

Integrated Management Plan (IMP)

A plan jointly developed and adopted by DWEE and the NRD for integrated surface water and groundwater management within the NRD, as required under *Neb. Rev. Stat. § 46-715 (1)(a)*.

Imported Water Supply (IWS)

The water supply imported by Nebraska from outside the basin resulting from the activities of man.

Management Actions

Actions taken to achieve the water management objectives described in this IMP; include, but are not limited to, controls, groundwater regulations, augmentation, and incentive programs.

Measurable Hydrologic Objective (MHO)

A quantifiable target, related to the movement and distribution of water, used to evaluate the extent to which reasonable progress is made toward achieving the final goals and objectives of the Plan.

Monitoring Plan

The components of the "Monitoring and Studies" section constitute a monitoring plan for this IMP, including tracking and reporting requirements and procedures for monitoring, evaluating, and ensuring compliance with this IMP and the Compact.

Natural Resources District (NRD)

A local government unit with broad responsibility for managing and protecting natural resources. Boundaries of NRDs are usually formed by Nebraska river basins.

Republican River Basin-Wide Plan

A basin-wide plan for integrated surface water and groundwater management that was jointly developed by DWEE, URNRD, MRNRD, LRNRD, and Tri-Basin NRD, in consultation and collaboration with a stakeholder advisory committee, in fulfillment of *Neb. Rev. Stat.* § 46-755. https://dnr.nebraska.gov/sites/default/files/doc/water-planning/republican/BasinWidePlan/Plan/20190124_RRBWP_FINAL.pdf

Republican River Compact (Compact)

An agreement between Colorado, Kansas, and Nebraska that allocates supplies for the beneficial consumption of the waters of the Republican River Basin among the three states: *Neb. Rev. Stat. Appendix* § 1-106.

<http://nebraskalegislature.gov/laws/appendix.php?section=1-106>

Republican River Compact Administration (RRCA)

The entity that administers the Compact; comprised of one member each from Colorado, Kansas, and Nebraska.

RRCA Accounting Procedures

The procedures outlined in *RRCA Accounting Procedures and Reporting Requirements*, a document describing the definitions, procedures, basic formulas, data requirements, and reporting formats to be used by the RRCA.

https://dnr.nebraska.gov/sites/default/files/doc/water-planning/republican/RRCA/2020/20200821_RRCAAcctProcedureUpdate.pdf

RRCA Groundwater Model

The computer-based groundwater model developed under the provisions of the FSS of the Compact and subsequently adopted and revised through action of the RRCA.

RRCA Resolution

A formal agreement entered into by the RRCA.

Stream Depletion Factor

A measure of how much groundwater pumping at a specific location would deplete streamflow after a specified period of time.

Virgin Water Supply

The water supply within the Basin undepleted by the activities of man.

Water Banking

The transfer of water rights or water use credits from seller to buyer to manage water resources.

Well

Any structure, device or excavation for the purpose or with the effect of obtaining groundwater for beneficial use from an aquifer, including wells, water wells, or groundwater wells as further defined and used in Nebraska laws, rules, and regulations.

Appendix A

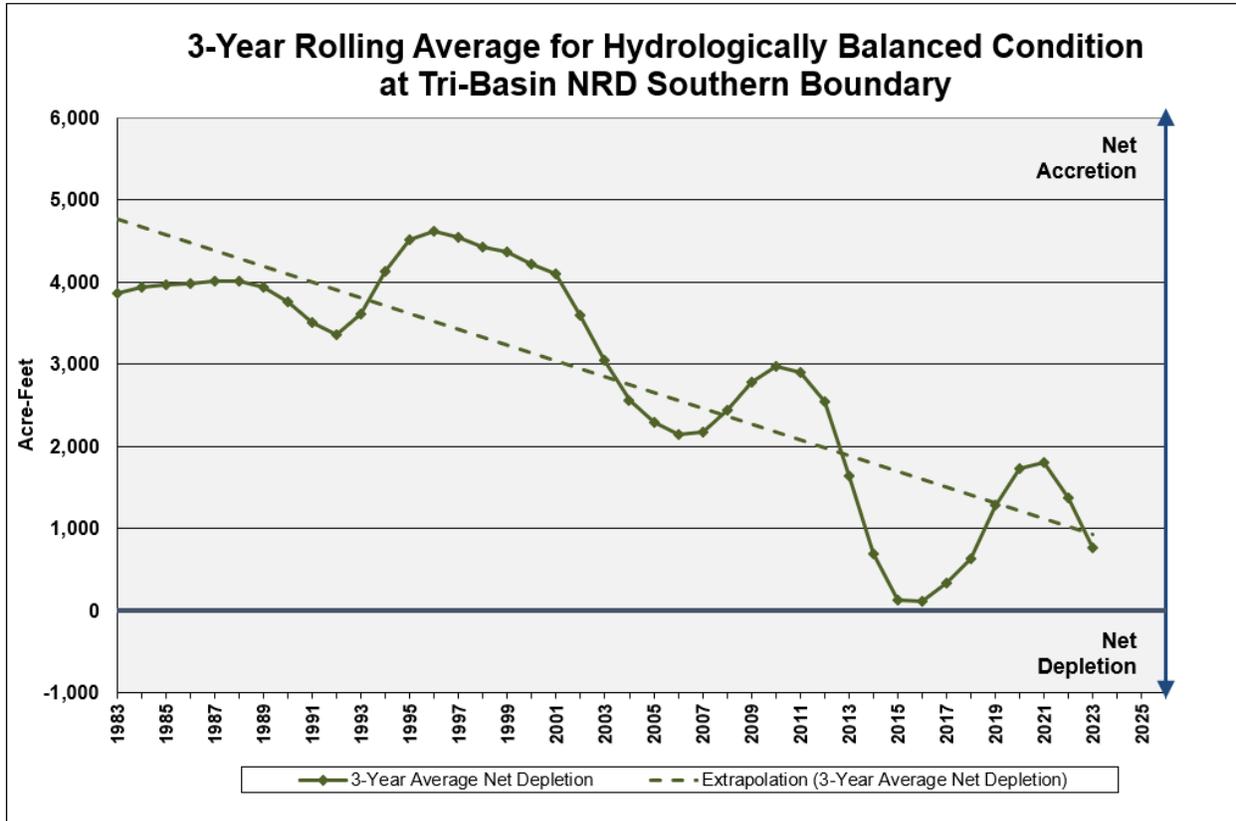


Figure 6. This figure depicts both the 3-year average net depletion and the associated trendline from 1983 to 2023. The net effect to baseflow at the Tri-Basin NRD southern boundary (3-year average net depletion) is positive as of the effective date of this IMP, indicating a hydrologically balanced condition in which accretions from the imported water supply credit and management actions exceed streamflow depletions.

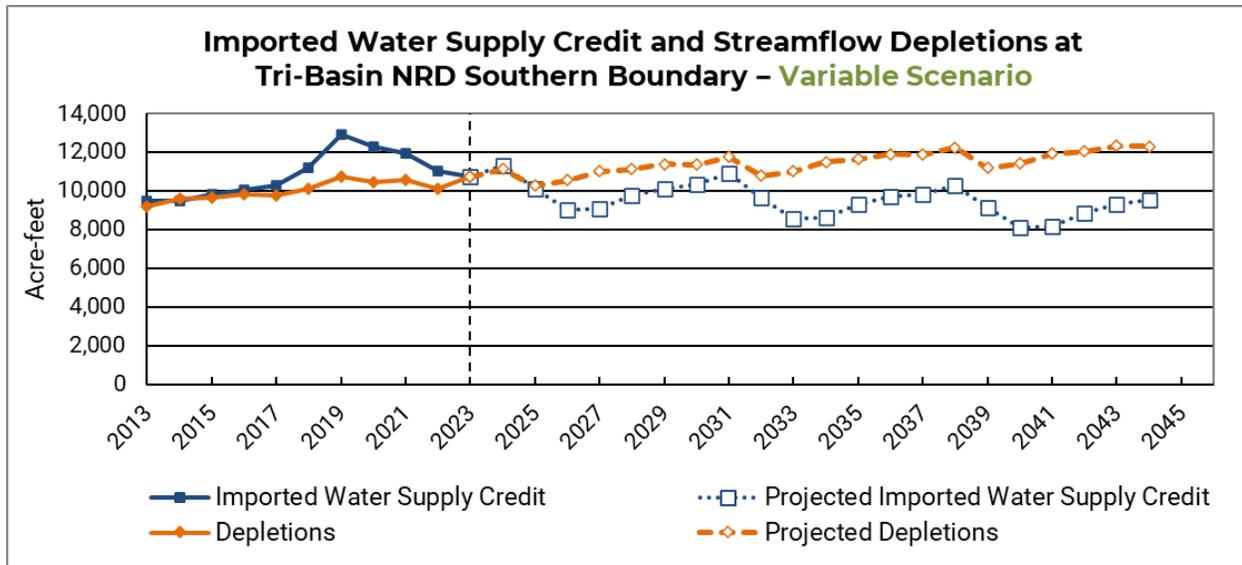


Figure 7. This figure depicts the historic and projected imported water supply credit and groundwater depletions to streamflow at the Tri-Basin NRD southern boundary. Precipitation and pumping data from 2010-2016 were projected forward from 2023 to represent a potential outcome under a variable climate cycle.

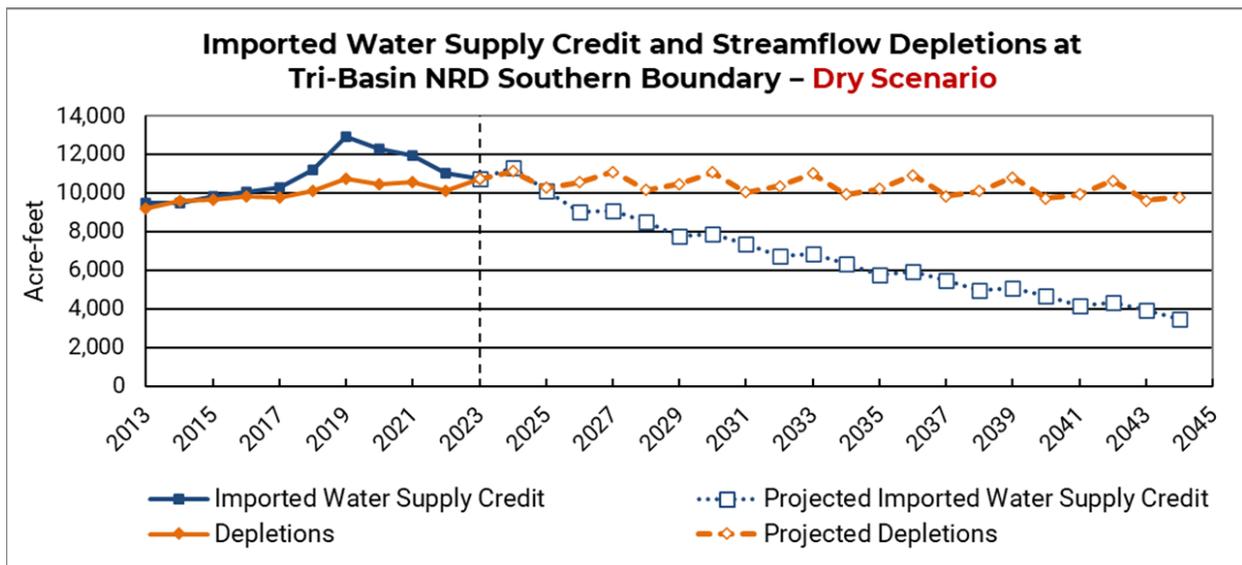


Figure 8. This figure depicts the historic and projected imported water supply credit and groundwater depletions to streamflow at the Tri-Basin NRD southern boundary. Precipitation and pumping data from 2011-2013 were projected forward from 2023 to represent a potential outcome under a drier climate cycle.

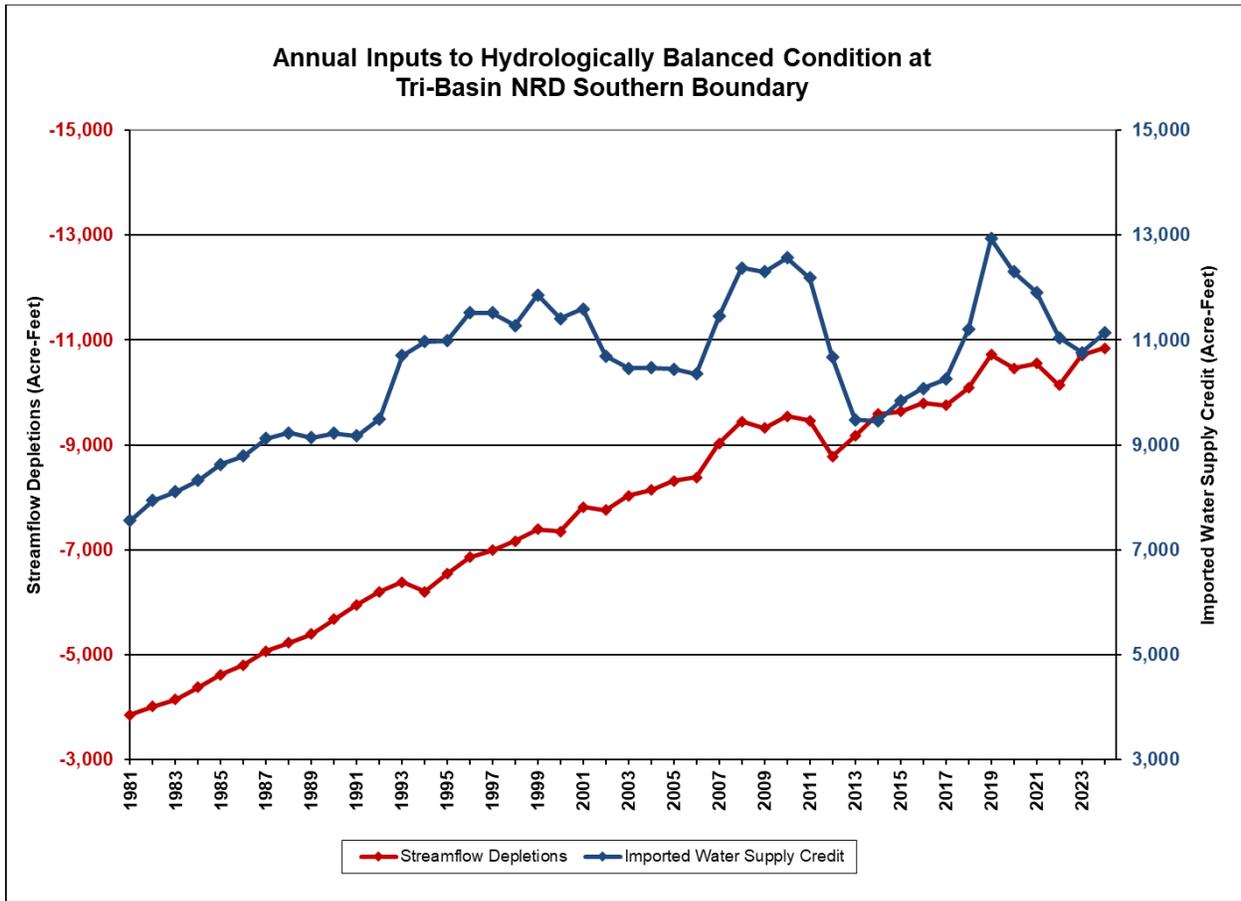


Figure 9. Modeled annual streamflow depletions and imported water supply credit for calendar years 1981 through 2024. These data were calculated using the August 2020 RRCA accounting procedures and the RRCA groundwater model. In order to show both streamflow depletions and imported water supply credit for comparison in one chart, the negative values on the left vertical axis pertain to the red line, representing stream depletion values, and positive values on the right vertical axis pertain to the blue line, representing imported water supply credit.