

# Republican River Basin-Wide Plan

## Executive Summary

**Timeframe and Purpose:** The timeframe to implement the plan is approximately 25 years. Development of the Plan was a collaborative effort of NeDNR, Tri-Basin NRD, Lower Republican NRD, Middle Republican NRD, Upper Republican NRD, and the Republican River Basin-wide Plan Stakeholder Advisory Committee. The Plan was initiated to fulfill the requirements of *Neb. Rev. Stat. § 46-755*, wherein NRDs and NeDNR are required to jointly develop a plan to collaboratively manage hydrologically connected water resources within the basin. The Plan's purpose is described by both a vision statement and a mission statement.

### **Vision Statement**

***“Waters responsibly used and the Republican River Basin is economically vibrant”***

### **Mission Statement**

***“To sustain a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the Republican River Basin can be achieved and maintained for both the near term and long term”***

**Planning Process:** The planning process began in 2015 and continued through mid-2018. NeDNR led the effort with the assistance of the NRDs in the Basin and Stakeholders representing interests shown in the following table.

<b>Self-identified interest in the Basin</b>	<b>Number of stakeholders</b>
Agribusiness	7
Banker	2
Conservationist	2
Education	3
Former NRD Staff	2
Groundwater user	19
Interested party	1
Irrigation district	3
Surface water irrigator	3
Irrigator	1
Municipalities	6
Nebraska Game and Parks Commission	1
Property tax payer	1
Public power district	1
Range livestock owner	7
Reclamation	1
Recreation	1

*Note: Stakeholders self-identified in more than one interest so the total is larger than the number of stakeholders*

**Goals, Objectives, Action Items and Timelines:** the following charts summarize the Goals, Objectives, Management Actions, and implementation schedule and represent the primary plan recommendations and monitoring commitments.

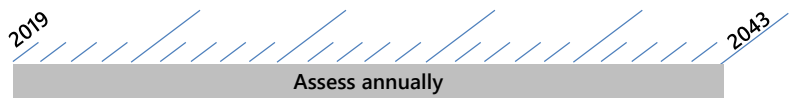
<b>Goal 1: Maintain Nebraska’s compliance with the Republican River Compact and applicable state laws</b>			
<i>Objective</i>	<i>Plan language</i>		<i>Years in which addressed</i>
<b>Coordinate basin-wide plan management actions with Nebraska’s Compact compliance efforts and adherence to applicable state laws</b>			
<b>1.1.</b>	<i>Action items</i>	1.1.1. Review each basin-wide plan management action prior to implementation to ensure it does not negatively impact efforts to achieve Compact compliance in the most efficient and cost-effective way practicable while adhering to state laws	
		1.1.2. Implement appropriate offsets for any basin-wide plan action that would exceed Nebraska’s allocation under the Compact	
<b>Understand the effects of management actions for Compact compliance on water supplies for Nebraska’s water users</b>			
<b>1.2.</b>	<i>Action item</i>	1.2.1. Qualitatively evaluate the net effect on water supplies of any management actions that are taken for Compact compliance	
<b>Assess progress toward meeting the goals and objectives of the Plan, and share the results of this assessment with the Public and the Nebraska Legislature</b>			
<b>1.3.</b>	<i>Action items</i>	1.3.1. Within five years after the adoption of this Plan, and every five years thereafter, conduct a technical analysis of the actions taken to determine the progress toward meeting the goals and objectives of the Plan	

\* From the effective date of this Plan

\*\* All Plan actions must be completed no later than April 17, 2044

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**Goal 1: Maintain Nebraska’s compliance with the Republican River Compact and applicable state laws**

Objective	Plan language		Years in which addressed
1.3.	Action items	1.3.2. Evaluate progress toward each of the Plan’s measurable hydrologic objectives at the intermediate dates specified in the Plan for each one	As indicated for each MHO, below
		<p><b>MHO A:</b> Maintain each NRD’s net <sup>1</sup> groundwater depletions to streamflow within its portion of Nebraska’s allowable groundwater depletions to streamflow</p> <p><b>Assessment:</b> For the previous Compact averaging period (2 or 5 years, as determined by Compact accounting procedures), has each NRD’s groundwater net depletions to streamflow for the RRCA model area, remained within its portion of Nebraska’s allowable groundwater depletions to streamflow, as specified in the IMPs?</p> <p><b>MHO is being achieved:</b> if assessment results in “yes” for NRDs</p>	

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<sup>1</sup> For the purposes of MHO A, “net groundwater depletions to streamflow” does include augmentation

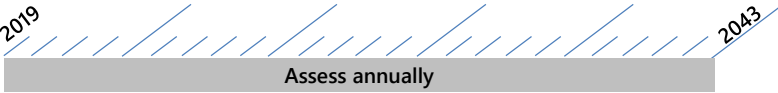
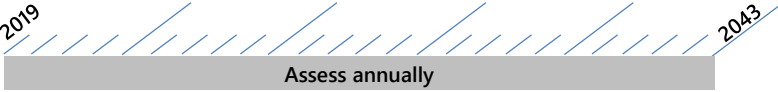
**Goal 1: Maintain Nebraska's compliance with the Republican River Compact and applicable state laws**

Objective	Plan language		Years in which addressed
1.3.	Action items	<p><b>MHO B:</b> Limit groundwater depletions to streamflow to a relatively constant level over the long-term both across the basin as a whole and within each NRD<sup>2</sup></p> <p><b>Assessment:</b> Before the first annual meeting, NeDNR and the NRDs will develop written procedures detailing this MHO analysis, which will be appended to the Plan.</p>	
		<p><b>MHO C:</b> Ensure there is always enough groundwater for all groundwater uses within the timeframe of this plan, either by stabilizing groundwater levels or managing declining groundwater levels</p> <p><b>Assessment:</b> Before the first annual meeting, NeDNR and the NRDs will develop written procedures detailing this MHO analysis, which will be appended to the Plan.</p>	

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<sup>2</sup> For the purposes of MHO B, depletions to streamflow for Tri-Basin NRD and for the Basin as a whole will be evaluated as the net of groundwater depletions to streamflow plus the mound credit.

**Goal 1: Maintain Nebraska's compliance with the Republican River Compact and applicable state laws**


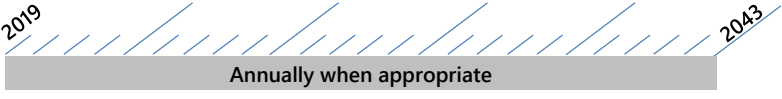
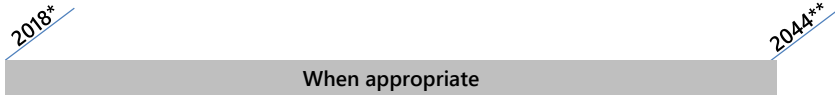

Objective	Plan language		Years in which addressed
1.3.	Action items	<p><b>MHO D:</b> Continue existing and initiate new actions that reduce the need for special regulations in the Rapid Response Area for Compact compliance</p> <p><b>Assessment:</b> During the previous year, has groundwater pumping within the Rapid Response Area of any NRD been curtailed to ensure Compact compliance?</p> <p><b>MHO is being achieved:</b> if assessment results in "no" for all NRDs</p>	 <p>A horizontal timeline diagram with a grey bar at the bottom labeled "Assess annually". The bar starts at a diagonal line labeled "2019" and ends at a diagonal line labeled "2043". The area above the bar is filled with diagonal hatching.</p>
		<p><b>MHO E:</b> Continue existing and initiate new actions that reduce the need for administration of surface water use for Compact compliance</p> <p><b>Assessment:</b> During the previous year, has surface water use within the Basin been administered to reduce surface water use to ensure Compact compliance?</p> <p><b>MHO is being achieved:</b> if assessment results in "no"</p>	 <p>A horizontal timeline diagram with a grey bar at the bottom labeled "Assess annually". The bar starts at a diagonal line labeled "2019" and ends at a diagonal line labeled "2043". The area above the bar is filled with diagonal hatching.</p>

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**Goal 1: Maintain Nebraska's compliance with the Republican River Compact and applicable state laws**

Objective	Plan language		Years in which addressed
1.3.	Action items	1.3.3. Following each five-year technical analysis (Action Item 1.3.1), share the results of the analysis and any recommended Plan modifications with the public	
		1.3.4. Following each five-year technical analysis (Action Item 1.3.1) and any resulting modifications to the Plan, submit a report to the Legislature of the results of the analysis and progress made under the Plan	

**Goal 2: Maximize Nebraska’s efficient and beneficial consumptive use of its portion of the water supply, increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water management entities and stakeholders across the Basin**


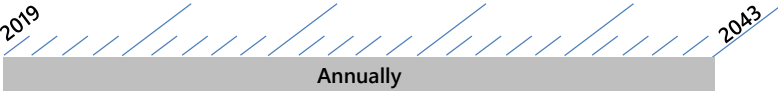
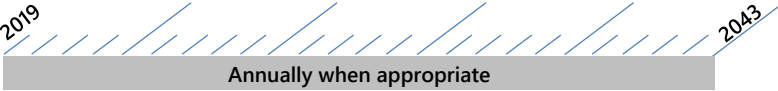
Objective	Plan language		Years in which addressed
<b>Understand the feasibility and potential impacts of Plan actions and establish a standard procedure for projects</b>			
<b>2.1.</b>	<i>Action items</i>	2.1.1. For each planned new water management project in the Plan, evaluate hydrologic and regulatory feasibility and potential economic and environmental impacts	
		2.1.2. For each project evaluated in accordance with Action Item 2.1.1 in a given year, include a summary of the evaluation in the Annual Report of that year’s activities	
		2.1.3. For projects that are feasible and beneficial, apply for necessary permits, establish new or utilize existing infrastructure, then begin operations	
<b>Improve the efficiency of use, availability, and reliability of water supplies for current irrigators</b>			
<b>2.2.</b>	<i>Action items</i>	2.2.1. Work with irrigation districts and individual groundwater and surface water irrigators to improve the efficiency of the Basin’s surface water delivery systems and irrigation water use, when it is both feasible and beneficial to Nebraska’s Compact accounting balance	

\* From the effective date of this Plan

\*\* All Plan actions must be completed no later than April 17, 2044

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**Goal 2: Maximize Nebraska’s efficient and beneficial consumptive use of its portion of the water supply, increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water management entities and stakeholders across the Basin**

Objective	Plan language		Years in which addressed
2.2.	Action items	2.2.2. Participate in projects to improve the reliability, availability, and sustainability of water supplies in the Basin, which may include but are not limited to: <ul style="list-style-type: none"> <li>a. Voluntary reduction of irrigated acres (temporary or permanent)</li> <li>b. Inter-basin transfers</li> <li>c. Conjunctive management projects such as aquifer recharge or streamflow augmentation</li> </ul>	
<b>Provide opportunities for collaboration among the Basin’s water users</b>			
2.3.	Action items	2.3.1. Hold an annual public meeting to discuss Plan implementation and exchange information about the Basin	
		2.3.2. Work cooperatively to investigate and address conflicts between water users resulting from implementation of this Plan by following the procedures for addressing conflicts that are outlined in this Plan	

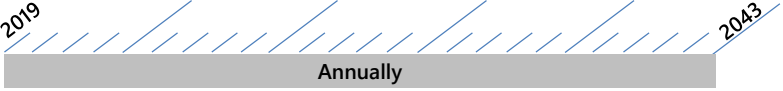

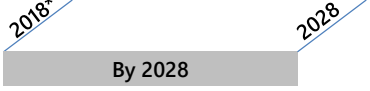

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**Goal 2: Maximize Nebraska’s efficient and beneficial consumptive use of its portion of the water supply, increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water management entities and stakeholders across the Basin**

Objective	Plan language		Years in which addressed
<b>Promote conservation programs available to the water users in the Basin</b>			
<b>2.4.</b>	<i>Action items</i>	2.4.1. Work together to identify, investigate, and discuss existing and potential new water conservation programs	
		2.4.2. Collaborate to promote conservation program opportunities to the Basin’s water users	
<b>Understand how various water management activities of independent decision-makers affect water supplies</b>			
<b>2.5.</b>	<i>Action items</i>	2.5.1. Study the effects of conservation practices on streamflow, if feasible	
		2.5.2. As part of each five-year technical analysis, analyze the future impacts to streamflow of past pumping to determine the lag time of these residual impacts	

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**Goal 2: Maximize Nebraska’s efficient and beneficial consumptive use of its portion of the water supply, increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water management entities and stakeholders across the Basin**

Objective	Plan language		Years in which addressed
2.5.	Action items	2.5.3. Examine and attempt to estimate the quantity of all inputs and outputs affecting the water supply balance in a small watershed, and consider using the results of this pilot study to create water use and land use guidelines for producers and other land managers, incentivize participation in recommended practices, and determine the value of completing similar studies across the Basin	
<b>Evaluate the feasibility and potential outcomes of establishing water markets in the Basin</b>			
2.6.	Action items	2.6.1. Cooperate in determining the feasibility of water markets in the Basin	
	Action items	2.6.2. Following the water markets feasibility analysis (Action Item 2.6.1), test conclusions through implementation of a water market program in a pilot area, if feasible	

\* From the effective date of this Plan

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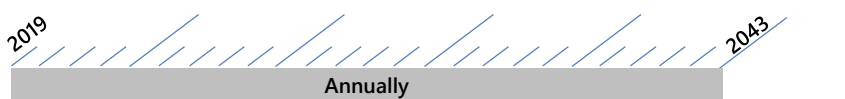
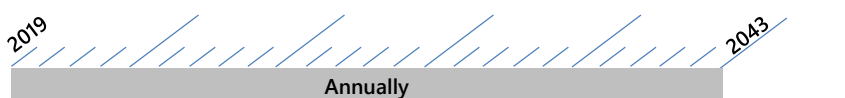
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Objective	Plan language		Years in which addressed
<b>Support the NRDs in management of allocations for irrigation purposes and surface water irrigation districts in management of the allotment of their water supply</b>			
<b>2.7.</b>	<i>Action items</i>	2.7.1. Periodically evaluate, as part of each five-year technical analysis, the impact of the groundwater allocation and surface water allotment systems as a whole	
		2.7.2. As needed, based on the evaluation described in Action Item 2.7.1, recommend changes or improvements to the groundwater allocation and/or surface water allotment systems	
<b>Conserve water for future use during a drought</b>			
<b>2.8.</b>	<i>Action items</i>	2.8.1. Organize and participate in a basin-wide drought planning exercise	
		2.8.2. Following the drought planning exercise (Action Item 2.8.1) evaluate whether to recommend any changes to the IMPs or this Plan related to conservation of water for future use during a drought	

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**Goal 3: Positive public relations, including information sharing, within and outside the Basin**

Objective	Plan language		Years in which addressed
<b>Improve information sharing with decision-makers and the public about solutions formed within the Basin</b>			
<b>3.1.</b>	<i>Action items</i>	3.1.1. Use existing resources to share information about Basin progress and activities with outside entities	
		3.1.2. Educate civic leaders and the public on implementation efforts within the Basin	
		3.1.3. Educate civic leaders and the public about the policies and institutional infrastructure that contribute to the development and implementation of solutions	
		3.1.4. Propose and support changes to laws, policies, and rules that would incentivize reduced water consumption	
<b>Improve information sharing with water users who are reliant on the Basin's water supplies</b>			
<b>3.2.</b>	<i>Action items</i>	3.2.1. Share data and information related to the Republican River Compact with the public in an easily accessible, user-friendly format	
		3.2.2. Annually prepare and exchange reports containing data and information about water supplies and uses in the Basin, and make these reports publically accessible	

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**Goal 3: Positive public relations, including information sharing, within and outside the Basin**

<i>Objective</i>	<i>Plan language</i>		<i>Years in which addressed</i>
3.2.	Action items	3.2.3. Regularly communicate with the Plan's Stakeholder Advisory Committee about implementation progress and potential Plan revisions	
		3.2.4. Encourage and support water users to share information about their management practice improvements with other water users and the public	

**Goal 4: When possible, pursue projects that not only benefit water supplies and uses, but also create benefits for fish, wildlife, recreation, and conveyance within the Republican River Basin**

Objective	Plan language		Years in which addressed
<b>Where feasible and beneficial, protect and enhance fish and wildlife habitat and public outdoor recreational opportunities</b>			
<b>4.1.</b>	<i>Action items</i>	4.1.1. Partner with wildlife-focused organizations on projects that benefit the organizations' habitat and wildlife interests while also helping to fulfill other goals of this Plan	2018*  2044**
		4.1.2. Promote public recreation on the river, when doing so can also help to fulfill other goals of this Plan	2018*  2044**
		4.1.3. Cooperate in projects to assess and restore riparian wetlands while also helping to fulfill other goals of this Plan	2018*  2044**
<b>Where feasible and beneficial, reduce the effects of undesirable vegetation on water conveyance</b>			
<b>4.2.</b>	<i>Action</i>	4.2.1. Cooperate in removing undesirable vegetation impacting water conveyance and managing reinfestation	2018*  2044**

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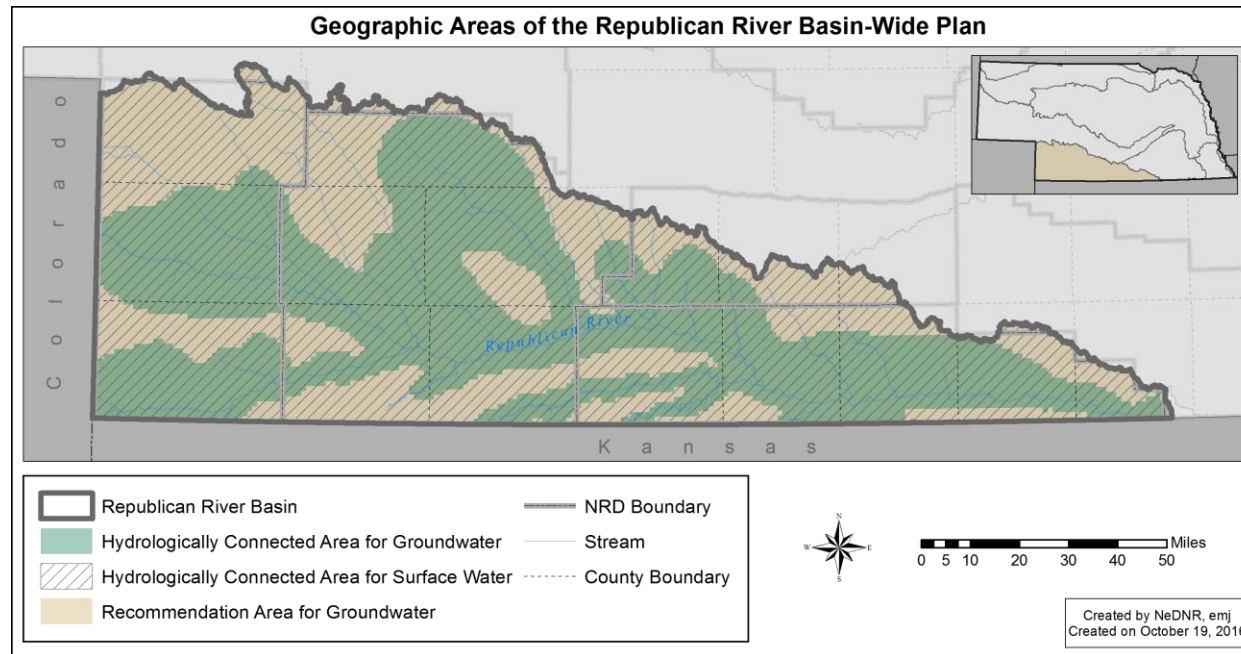
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This section of the Plan also defines:

- Annual plan progress reporting requirements
- Data to be gathered and reported annually
- An outline of the annual meeting
- Procedures for modifying the plan
- Reporting to the Legislature

**Funding:** The Funding Section establishes guidelines and limitations related to funding implementation of the Plan

**Plan Area:** Geographic areas to which Plan actions related to groundwater and surface water apply are shown in the following illustration. The hydrologically connected area for groundwater shown in the map is the area determined by NeDNR to be hydrologically connected according to NeDNR's 10/50 rule, as of the effective date of the plan.



**Other Information/Appendices:**

- A. Local Hydrology
- B. Data and Information Used During Plan Development
- C. Plan Development
- D. Relevant History of Groundwater and Surface Water Management
- E. Procedures for Addressing Conflict related to Plan Implementation
- F. Watershed Management Presentation Materials
- G. Water Market Summary
- H. 2018-2022 Allocation Summary
- I. Riparian Evapotranspiration and Removal of Invasive Vegetation