

3. Monitoring

Section Overview

The “Monitoring” section includes information about how the Nebraska Department of Natural Resources (NeDNR) and the Upper Republican, Middle Republican, Lower Republican, and Tri-Basin Natural Resources Districts (NRDs) will share data and information and work together to monitor and evaluate progress toward the goals and objectives of the Plan. It also describes how NeDNR and the NRDs will use this information to assess the need for Plan modifications and lists procedures to follow if modifications are needed.

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Plan Schedule and Management Actions

As required by *Neb. Rev. Stat. § 46-755 (5)(b)*, this Plan includes a schedule indicating the end date by which the goals and objectives are to be achieved and the management actions to be taken to achieve the goals and objectives. The Plan’s goals, objectives and action items are listed within the Plan’s “Plan

Implementation Schedule” section (page [#]) and described in detail with the “Goals and Objectives” section (page [#]). The “Plan Implementation Schedule” section specifies a schedule for each action item and measurable hydrologic objective (MHO).

Reporting

Action Item 3.2.2 requires that NeDNR and the NRDs annually exchange reports on Plan progress. These reports will contain, but are not limited to, data and information about:

- Water supplies and uses in the Basin,
- Management activities, and
- Progress towards the goals, objectives, and action items of the Plan.

Annual reports will be exchanged by NeDNR and the NRDs at each annual meeting. Additional information about the annual meeting can be found under “Annual Meeting” (page 4). The reports exchanged will be made available to the public following the annual meeting. Members of the Plan’s Stakeholder Advisory Committee (Appendix C, “Plan Development”) will be notified once annual reports have been published (Action Item 3.2.3).

The data on water supplies and uses in the Basin listed in Table 3.1 will be reported annually, either as part of the annual reports, or through a different medium such as the Plan’s website. Not all listed data will be reported as part of the initial annual report, as it will take time for NeDNR and the NRDs

to prepare each category of data for distribution. As such, NeDNR and the NRDs will gradually increase the number of items from this list reported on each year. Some data will take significantly longer to prepare for distribution than others.

During the Plan development process, stakeholders recommended reporting on more categories of data than are listed in Table 3.1. The items included in Table 3.1 are limited to data that are within NeDNR and the NRDs’ statutory authority and that NeDNR and the NRDs believe can reasonably be collected using their available resources.

The list of data in Table 3.1 is subject to change through time as the result of changes in data needs or resources. In addition, as new projects are implemented as a result of this Plan, NeDNR and the NRDs will assess whether additional categories of data related to those new projects should be added to the reporting list.

In addition to the annual report, NeDNR and the NRDs will also report on Plan progress as part of the annual meeting (page 4), five-year technical analysis (page 5), and report to the Legislature (page 7).

Table 3.1. Data on water supplies and uses in the Basin, to be gathered and reported annually. As described on page 2, NeDNR and the NRDs will gradually increase the number of items from this list reported on each year, as some of these data will take longer to prepare for distribution than others. These data may be reported on as part of the annual reports or through a different medium such as the Plan’s website. As new projects are implemented as a result of this Plan, NeDNR and the NRDs will assess whether additional categories of data related to those new projects should be added to this reporting list. This list is subject to change as data needs and resources change over time.

Category	Data	Responsible Party
Allocations	Current allocations	NRDs
	Average annual use, relative to allocations	NRDs
Augmentation	Time pumping	NRDs
	Volume pumped	NRDs
Data needed to assess measurable hydrologic objectives (page 5)	Net groundwater depletions to streamflow, by NRD	NeDNR
	Groundwater levels by NRD	NRDs
	Dates of curtailment of groundwater pumping in Rapid Response Area for Compact compliance	NRDs
	Dates of surface water administration for Compact compliance	NeDNR
Interstate	Colorado CBCU	NeDNR
	Kansas CBCU	NeDNR
Landuse	Certified acres	NRDs
	Modeled commingled irrigated acres	NeDNR
	Modeled groundwater irrigated acres	NeDNR
	Modeled surface water irrigated acres	NeDNR
	Number of acres planted, by crop type, when available	NeDNR
Monitoring wells	Locations of wells being monitored	NeDNR and NRDs
	Number of wells being monitored	NeDNR and NRDs
Retirement programs	Conservation program acres	NeDNR and NRDs
	Permanent retired acres	NeDNR and NRDs
	Temporary retired acres	NeDNR and NRDs
Water balance	Annual canal recharge	NeDNR
	Annual precipitation	NeDNR
	Evaporation from reservoirs	NeDNR
	Field deliveries as percentage of water released from reservoirs for irrigation	NeDNR
	Groundwater CBCU	NeDNR
	Municipal and industrial CBCU	NeDNR
	Surface water CBCU	NeDNR
Surface water storage	NeDNR	

Annual Meeting

NeDNR and the NRDs will meet annually to discuss Plan implementation and exchange information about the Plan (Action Item 2.3.1). The Plan's former Stakeholder Advisory Committee (listed in Appendix C, "Plan Development") will be invited to the meeting (Action Item 3.2.3), and the meeting will be open to the public (Action Item 2.3.1). At a minimum, the agenda for each annual meeting will include the following elements.

1. Nebraska Open Meetings Act requirements
2. Exchange and discuss annual reports and data
3. Plan implementation progress
 - a. Exchange and discuss annual reports and data ("Reporting," page 2)
 - b. Progress toward goals and objectives of the Plan ("Plan Schedule and Management Actions", page 1).
 - c. Delays due to resource limitations, if any ("Limitations," page [#])
 - d. Qualitative summary of net effect of management actions taken for Compact compliance on water supplies, if any (Action Item 1.2.1)
 - e. Summary of evaluation of feasibility and potential impacts of planned projects, if any (Action Items 2.1.2 and 2.1.3).
4. Collaboration
 - a. Existing and potential new water conservation programs (Action Item 2.4.1)
 - b. Information sharing about water user management practice improvements (Action Item 3.2.4)
 - i. Informational presentations or reports from water users, if any
 - ii. Future opportunities to encourage and support water users to share information about management practice improvements
 - c. Conflicts Resulting from Implementation of the Plan, if any (Appendix E)
5. Technical analysis and recommended Plan modifications (if applicable, as described in "Five-Year Technical Analysis" (page 5)
 - a. Results of technical analysis ("Five-Year Technical Analysis," page 5)
 - b. Proposed Plan modifications, if any ("Modifications to the Plan," page 6)
 - c. Report to the Legislature ("Report to the Legislature," page 7)
6. Public comment

Other agenda items will be included as needed.

Measurable Hydrologic Objectives

As required by *Neb. Rev. Stat. § 46-755 (5)(b)*, this Plan includes measurable hydrologic objectives (MHOs) to help assess whether reasonable progress has been made toward the Plan's goals and objectives. The Plan's MHOs are listed under Action Item 1.3.2 in in Table 4.1 of the "Plan Implementation Schedule" section of the Plan (page [#]), along with a description of the assessment that will be used to objectively evaluate progress toward each one and the intermediate dates at which each will be evaluated to determine whether it is being met.

Evaluation of Progress

Each MHO will be evaluated according to the assessment described in Table 4.1, either every five years or annually, as specified within the table. For those MHOs that will be evaluated every five years, that evaluation will coincide with the five-year technical analysis ("Five-Year Technical Analysis" (page 5)), and the results will be included in the report and presentation of the results of the technical analysis (Action Item 1.3.3; "Five-Year Technical Analysis" (page 5)); "Report to the Legislature" (page 7)). For those MHOs that will be evaluated annually, the presentation and report of the results of the technical analysis will include a summary of the results of the annual evaluations from the time period included in the five-year technical analysis. The technical analysis will be conducted every five years beginning in 2023. The presentation of results to the public is expected to take place the same year as the analysis, and the report to the legislature will be submitted the following year ("Plan Schedule," page [#]).

Process if MHO is Not Being Achieved

If NeDNR and the NRDs determine that one or more of the MHOs is not being achieved, they will determine what actions to take to achieve the MHOs in the future. If the NeDNR and the NRDs recommend any plan modifications as a result of this analysis, the procedures outlined under "Modifications to the Plan" (page 6) will be followed.

Five-Year Technical Analysis

NeDNR and the NRDs will conduct a technical analysis of actions taken to determine progress toward meeting the goals and objectives of the Plan (Action Item 1.3.1). This analysis must take place within five years after the adoption of this Plan and ever five years thereafter, as required by *Neb. Rev. Stat. § 46-755 (d)*. NeDNR and the NRDs may conduct the analysis more frequently if needed.

The analysis will include an examination of:

- Available supplies, current uses (including Action Item 2.7.1), and changes in long-term water availability,
- The effects of conservation practices and natural causes, and
- The effects of the Plan in meeting the goal of sustaining a balance between water uses and water supplies, including whether the MHOs are being met (Action Item 1.3.2; "Evaluation of Progress," page 5)).

The outcomes of any conflicts considered under the "Procedures for Addressing Conflicts Resulting from Implementation of the Republican River Basin-Wide Plan" (Appendix E) may be taken into account as part of the technical analysis to the extent that the conflicts evaluated relate to the topics examined in the analysis, which are listed in the previous paragraph.

Following the technical analysis, NeDNR and the NRDs will (*Neb. Rev. Stat. § 46-755 (d)*):

1. Determine whether the technical analysis indicates that modifications to the Plan are needed to meet the goals and objectives of the Plan ("Goals and Objectives," page [#]),
2. Present the results of the technical analysis and any recommended modifications to the Plan at a public meeting ("Annual Meeting," page 4),
3. Modify the Plan following the procedures outlined in "Modifications to the Plan" (page 6), if modifications are needed, and then
4. Submit a report to the Legislature on the results of the technical analysis and progress on the Plan, as described under "Report to the Legislature" (page 7).

The technical analysis will be conducted every five years beginning in 2023. The presentation of results to the public is expected to take place the same year as the analysis, and the report to the legislature will be submitted the following year ("Plan Schedule," page [#]).

Modifications to the Plan

The Plan may be modified if the technical analysis ("Five-Year Technical Analysis," page 5) determines that modifications to the Plan are needed to meet the goals and objectives of the Plan (*Neb. Rev. Stat. § 46-755 (d)*).

The procedures for modifying the Plan are (*Neb. Rev. Stat. § 46-755 (d)*):

1. Preceding modification of the Plan,
 - a. Determine that the technical analysis indicates modifications are needed ("Five-Year Technical Analysis," page 5),
 - b. Present the results of the technical analysis and recommended modifications to the Plan at a public meeting ("Annual Meeting," page 4), and
 - c. Provide for at least a 30-day public comment period before holding a public hearing on the recommended modifications

2. Following modification of the Plan, a description of any modifications made will be included in the required report to the Legislature ("Report to the Legislature," page 7).

The integrated management plans (IMP) for the NRDs within the Basin are tools that can be used to help implement the goals and objectives of the Basin-Wide Plan. NeDNR and the NRDs may choose to modify the IMPs, either instead of or in addition to the Basin-Wide Plan, if they determine that doing so would help achieve the goals and objectives of the Basin-Wide Plan. Consideration of any recommended changes to the IMPs will follow the established procedures for updating the IMPs. As of the effective date of the Plan, these procedures are described in *Neb. Rev. Stat.* §§ 46-715 to 46-718 and 46-719 (3).

Report to the Legislature

Following each technical analysis ("Five-Year Technical Analysis," page 5), and any resulting Plan modifications ("Modifications to the Plan," page 6), NeDNR and the NRDs will electronically submit a report to the Legislature (Action Item 1.3.4) that includes:

- The results of the technical analysis,
- Progress made under the Plan,
- Modifications made to the Plan, if any, and
- Any comments on the final, adopted Plan that have been submitted to NeDNR or the NRDs by any official participant or stakeholder.