

Welcome!

Thank you for joining us for the **Republican River Basin Annual Meeting**.

Please sign in:

- **In-person attendees:** the sign-in sheet is located on the table near the entrance.
- **Virtual attendees:** Please make sure your name and affiliation are set as your screen name.

Republican River Basin-Wide Plan Sixth Annual Meeting

November 13, 2024

Upper Republican Natural Resources District Offices, Imperial, NE



Nebraska Open Meetings Act

➤ Location of:

- Open Meetings Act
- Sign-in Sheets

➤ Where meeting was noticed:

- Benkelman Post
- Grant Tribune
- Harlan County Journal
- Holdrege Citizen
- Imperial Republican
- McCook Gazette
- urnrd.org
- dnr.nebraska.gov
- tbnrd.org

Meeting Agenda

Link to Annual Report:
rrbwp.nebraska.gov

DRAFT Sixth Annual Meeting **Republican River Basin-Wide Plan**

Wednesday, November 13, 2024
1:00 pm Mountain Time (2:00 pm Central Time)

Upper Republican Natural Resources District Office
511 E. 5th Street
Imperial, NE
Virtual participation option via Zoom

Agenda

1. Welcome and introductions
 - a. Nebraska Open Meetings Act requirements
 - b. Review agenda and meeting objectives
 - c. Introductions
2. Plan implementation progress
 - a. Annual Report: Plan Implementation Progress 2023
 - i. Water supplies and uses in the basin
 - ii. Progress toward goals and objectives of the plan
 1. Management activities
 2. Measurable Hydrologic Objectives (MHOs)
 - a. MHO C, Phase 2 Update
 - b. Feasibility and potential impacts of planned projects
 - c. Water market feasibility study
 - d. Drought plan update
3. Collaboration
 - a. Existing and potential new water conservation programs
 - b. Information sharing about water user management practice improvements
 - i. Future opportunities to encourage and support water users to share information about management practice improvements
4. Conflicts Resulting from Implementation of the Plan, if any
 - a. None submitted for consideration
5. Public comment

Introductions

Plan Implementation Progress

Water Supplies and Uses in the Basin

➤ Location in Report –

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Upper Republican Natural Resources District	6
Middle Republican Natural Resources District.....	9
Lower Republican Natural Resources District.....	12
Tri-Basin Natural Resources District	15
Nebraska Department of Natural Resources	18
Augmentation Pumping.....	28

Water Supplies and Uses – What's Included?

NRDs

- Allocations
- Annual Groundwater Use for Irrigation
- Conservation and Irrigation Buyout Programs and # of acres involved
- Groundwater Levels and Observation Well Locations
- Curtailment of Groundwater Pumping for Compact Compliance

Augmentation Pumping

- N-CORPE
- Rock Creek
- Turkey Creek

NeDNR

- Precipitation
- Streamflow
- Irrigated Acres
- Allocation and Computed Beneficial Consumptive Use (CBCU)
- Reservoir Storage and Evaporation
- Surface Water Municipal and Industrial CBCU
- Qualitative Evaluation of Net Effect of Management Actions for Compact Compliance

Qualitative Evaluation of Effects of Management Actions for Compact Compliance on Water Users (p. 27)

- In 2023, no management actions were taken for 2023 Compact compliance.
- In October 2023, Kansas requested administration of 1,860 acre-feet of Remaining Compact Compliance Volume (RCCV) from 2016.
- Effects of 2023 actions to help with future compliance:

Action	Effect
Enroll or re-enroll landowners in temporary or permanent irrigation decertification programs	Reduce consumptive use of water
Allocations on groundwater use	Reduce consumptive use of water
Water Conservation Incentive Program (TBNRD voluntary allocation program)	Reduce consumptive use of water
Support FCID and NBID to automate canal gates/headgates and diversion project	Reduce unintended operational spills, increase reliability of surface water supplies, allow more water to be stored in Swanson and Harlan County Lake Reservoirs

Progress toward Goals and Objectives

➤ Location in Report –

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Progress Towards Plan Goals and Objective NRD Updates

- URNRD
- MRNRD
- LRNRD
- TBNRD






Progress Toward Plan Goals and Objectives NeDNR Update

- Management Activities
- Measurable Hydrologic Objectives (MHOs)
 - MHO C, Phase 2 Update

5 Measurable Hydrologic Objectives (MHOs)

Measurable Hydrologic Objective (MHO)	Evaluation Frequency
MHO A: Maintain each NRD's net groundwater depletions to streamflow within its portion of Nebraska's allowable groundwater depletions to streamflow	Annually
MHO 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	Every 5 years, beginning in 2023
MHO C: 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	Every 5 years, beginning in 2023
MHO D: Continue existing and initiate new actions that reduce the need for special regulations in the Rapid Response Area for Compact compliance	Annually
MHO E: Continue existing and initiate new actions that reduce the need for administration of surface water use for Compact compliance	Annually

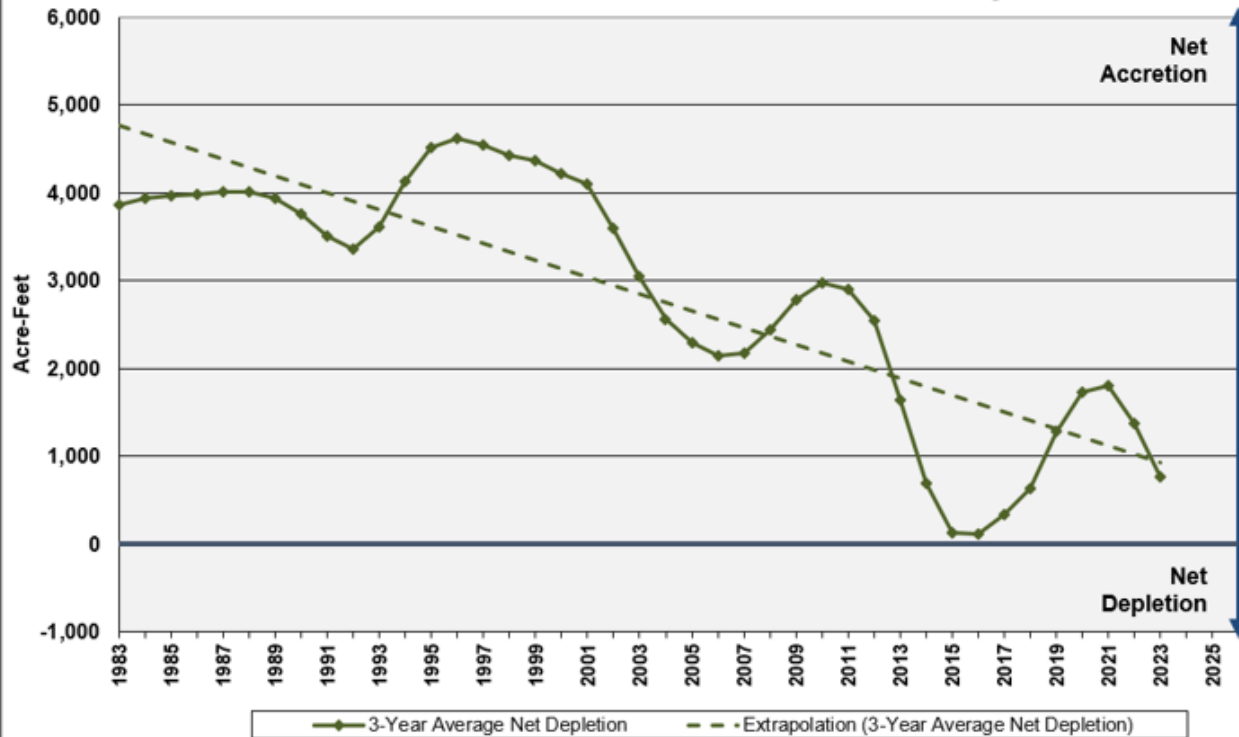
MHO A

Key to Possible Test Results	 MHO is being achieved. NRD's actual depletions were within its allowable depletions. No further discussion is needed.		
	 MHO is not being achieved. NRD's actual depletions exceeded its allowable depletions. Discussion of next steps is required.		
NRD	Upper Republican	Middle Republican	Lower Republican
NRD's Results for 2023			




	Difference between allowable depletions and actual groundwater net depletions (acre-feet)		
Year	Lower Republican NRD	Middle Republican NRD	Upper Republican NRD
2019	40,262	46,951	65,758
2020	14,844	28,487	26,335
2021	2,229	12,180	12,577
2022	-6,947	2,063	-7,059
2023	-9,364	-2,802	-5,702
5-year average (2019–2023)	8,205	17,376	18,382
5-year average positive?	Yes	Yes	Yes

MHO A, TBNRD

3-Year Rolling Average for Hydrologically Balanced Condition at Tri-Basin NRD Southern Boundary








Key to Possible Test Results

-  In compliance with IMP. On a three-year rolling average basis, depletions from groundwater pumping did not exceed accretions from the mound. Also, sufficient management actions were taken in 2023 to offset net depletions from previous year's test, if any. No further discussion is needed.
-  Caution. On a three-year rolling average basis, depletions from groundwater pumping exceeded accretions from the mound. Under the terms of the IMP, management actions are required to maintain a hydrologically balanced condition. Discussion of next steps is required.
-  Insufficient management actions were taken in 2023 to offset net depletions from previous year's assessment. Discussion of next steps is required.




Tri-Basin NRD's Results for 2023



MHO D

Key to Possible Test Results	 MHO is being achieved. NRD did not curtail groundwater pumping within the Rapid Response Area to ensure Compact compliance. No further discussion needed.		
	 MHO is not being achieved. NRD curtailed groundwater pumping within the Rapid Response Area to ensure Compact Compliance. Discussion of next steps is required.		
NRD	Upper Republican	Middle Republican	Lower Republican
NRD's Results for 2023			

MHO E

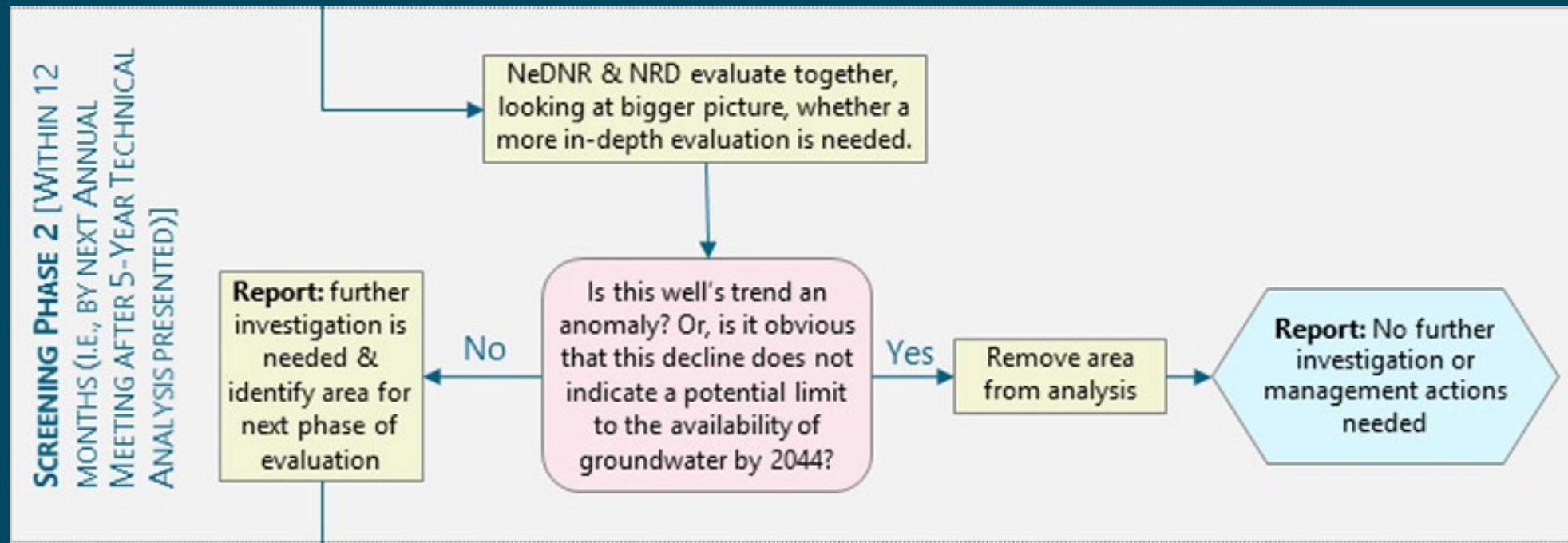
Key to Possible Test Results	 MHO is being achieved. NeDNR did not administer surface water to ensure Compact compliance, except as required under the FSS. No further discussion needed.	
	 MHO is not being achieved. NeDNR administered surface water to ensure Compact Compliance. Discussion of next steps is required.	
Results for 2023		

MHO C, Phase II – Next Steps

- Well data will be sent to NRDs for further review
 - Maps
 - GIS layer & Meta data information
 - Guide for NRDs to review well observation data to determine if any areas will move to MHO-C screening Phase III

MHO C, Phase II – Next Steps

- While reviewing the provided dataset, each NRD will determine if:
 - Any of the well observations should be removed from the analysis because a well's trend is an anomaly
 - It is obvious that the decline does not indicate a potential limit to the availability of groundwater by 2044.



MHO C, Phase II – Next Steps

- Republican NRDs and NeDNR need to decide what:
 - Information NRDs will provide to remove well observations from analysis
 - Confirm groundwater declines do not indicate a potential limit to the availability of groundwater by 2044 (e.g., list of wells, reasoning for NRD decisions, report, etc.)
 - Area(s) to move to MHO-C screening Phase III
- Deadline to complete MHO Screening Phase II.

Feasibility & Potential Impacts of Planned Projects

- Platte Republican Diversion Application – TBNRD
- NBID Superior Canal Project – LRNRD
- NRCS Watershed Grants & Flag Creek Project – LRNRD

Water Market Feasibility Study Update



Harlan County Dam Spillway

Drought Plan Update

Basin-Wide Plan Action Item 2.8.1

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

2019



Action Item 2.8.1 Organize and participate in a basin-wide drought planning exercise

NeDNR and the NRDs will organize and participate in a drought planning exercise for the Basin. A drought planning exercise is a workshop or other activity that brings together parties with expertise in various aspects of droughts to plan and prepare for managing drought. Some areas of focus for this exercise will be:

- Increasing understanding of the needs for and logistics of storing water for use during a drought,
- Evaluating existing and potential new management actions to determine the long-term availability trends that provide carry-over storage to meet crop-water needs during drought, and
- Developing metrics that could be used to evaluate whether conservation of water for future use during a drought is successful.

For the purposes of this action item, "storage" includes both surface water storage and aquifer storage. This exercise will support the evaluation of whether Plan revisions related to conserving water for a drought are needed (Action Item 2.8.2).

Anticipated Components:

- Develop a drought plan consisting of:
 - A phone tree to improve communication and coordination
 - A dashboard to provide access to real-time drought conditions, including Republican Basin-specific information for Compact Call Years, water-short years, etc.
 - A wish list of projects and initiatives to proactively or reactively prevent or minimize damage caused by drought

Existing and Potential New Water Conservation Programs

Republican River NRD acres that are purchased or leased and can no longer be irrigated, 2023 *

NRD	CREP *	NRD/WRCF	Other Buyout Programs
Upper Republican NRD	8,205.1	3,378	0
Middle Republican NRD	14,024.3	60	0
Lower Republican NRD	6,556.4	0	2,651.43
Tri-Basin NRD	1,626.1	0	33.2

CREP * = Cooperative Reserve Enhancement Program (as of 9/30/2023)

NRD/WRCF = Permanent irrigation buyout program jointly funded by the NRD and Water Resources Cash Fund (NeDNR)

Tri-Basin Water Conservation Incentive Program (WCIP)

Frenchman-Cambridge Irrigation District Update

Discussion: Future Opportunities to encourage & support water users to share information about management practices.

Conflicts Resulting from Plan Implementation

- Appendix E: Procedures for Addressing Conflicts Resulting from Implementation of the Republican River Basin-Wide Plan
- No conflicts submitted for consideration.

Public Comment