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DEPT. OF WATER, ENERGY, AND ENVIRONMENT

Nebraska Department of Natural Resources Preliminary Republican River Basin Forecast for 2026

November 20, 2025

Nebraska Department of Water, Energy, and Environment (DWEE)

Agenda:

- Preliminary Forecast and Accounting
- Augmentation Impacts
- TBNRD Hydrologically Balanced Assessment

Preliminary Forecast and Accounting

Topic Outline

- Final 2024 Accounting
- Preliminary 2025 Accounting
- Early Dry-year Forecast (2026)
- Compact Call Year Evaluation Flow Chart
- Forecasted NRD Projections for 2026

Final 2020-2024 Accounting

Hardy Balances, Table 3C	LRNRD	MRNRD	URNRD
2020	14,800	28,500	26,300
2021	2,200	12,200	12,600
2022	-6,900	2,100	-7,100
2023	-9,400	-2,800	-5,700
2024	-8,500	-2,700	-4,800
2020-2024	-7,800	37,300	21,300
Remaining Compact Compliance Volume (RCCV)	0	0	0

*Units are acre-feet unless otherwise noted.

**Values throughout accounting and forecast presentation rounded to nearest 100. Sum of subtotals may not equal totals due to rounding.

Final 2023-2024 Accounting

Guide Rock Balances, Table 5C	LRNRD	MRNRD	URNRD
2023	-8,300	-2,900	-5,700
2024	-7,700	-3,000	-5,200
2023-2024	-16,000	-5,900	-10,900
Remaining Compact Compliance Volume (RCCV)	0	0	0

*Not applicable as a compact compliance test in 2024

Preliminary 2025 Accounting

Year	Item	Information Source
Provisional Data for T=0 (Current Year or Immediate Past Irrigation Season)	Pumping	Prior year pumping
	Surface Water Use	Estimated from preliminary data and previous years values
	Streamflow	Available provisional records – end-of-year estimated
	Evaporation	Prior year records and provisional data

Preliminary 2025 Accounting

- MRNRD completed management actions in 2025
 - Riverside retirement
 - Besler and K&R retirements
 - Culbertson bypass
- Nebraska credited to bring the 2025 2-year Table 5C balance to 0 Acre Feet
- Kansas requested KBID account contains not less than 57,000 AF of water no later than June 1, 2026. Recent projections of KBID supply indicate this would require around 15,000 AF of management actions.
- RCCV will accrue to 2026 from CCV not delivered.

Preliminary 2025 Accounting: Hardy with Management Actions

Hardy Balances, Table 3C	LRNRD	MRNRD	URNRD
2021-2024 (final)	-22,600	8,800	-5,000
2025 Balance (preliminary, without crediting)	-6,800	-5,800	-8,300
2021-2025 Balance (preliminary)	-29,400	2,900	-13,300
Completed Management Actions	0	3,400	0
Total 15,000 AF* Management Actions	5,300	500	5,800
RCCV (projection)	9,900	7,400	11,100
2021-2025 Balance (crediting)	-14,100	14,200	3,600

*approximate, projection of management actions to fulfill Kansas request

Preliminary 2025 Accounting: Guide Rock and Management Actions

Guide Rock Balances, Table 5C	LRNRD	MRNRD	URNRD
2024 (final)	-7,700	-3,000	-5,200
2025 Balance (preliminary, without crediting)	-7,500	-8,300	-11,700
2024-2025 Balance (preliminary)	-15,200	-11,300	-16,900
Completed Management Actions	0	3,400	0
Total 15,000 AF* Management Actions	5,300	500	5,800
RCCV (projection)	9,900	7,400	11,100
2024-2025 Balance (with crediting)	0	0	0

*approximate, projection of management actions to fulfill Kansas request

Early Dry-Year Forecast (2026)

Dry-Year Forecast

Year	Item	Information Source
Forecast Year T+1 (Coming Irrigation Season)	Groundwater Consumptive Use and Imported Water Supply Credit	Average Values for T=0 and T-1
	Surface Water Consumptive Use	Colorado: Average of T-1 and T-2 use Kansas: $+(0.1858 \times \text{HCLcontent}) + 9,575$ Nebraska: $-(4 \times 10^{-7}) \times (\text{NE lake volume})^2 + 0.52 \times \text{NElakeVolume} - 42,000$
	Streamflow	$(5\text{-year average of state line flows}) \times 0.41 + 0.23 \times \text{HCLcontent} - 27,450$

Compliance Balances

Year	Guide Rock Balance (AF)*
T=0 (2025, projected)	15,900
T=+1 (2026, early forecast)	-39,500
2-Year Forecast Balance	-23,500
Year	Hardy Balance (AF)*
T=-3 to 0 (2022-2025, preliminary)	-23,300
T=+1 (2026, early forecast)	-34,200
5-Year Forecast Balance	-57,500

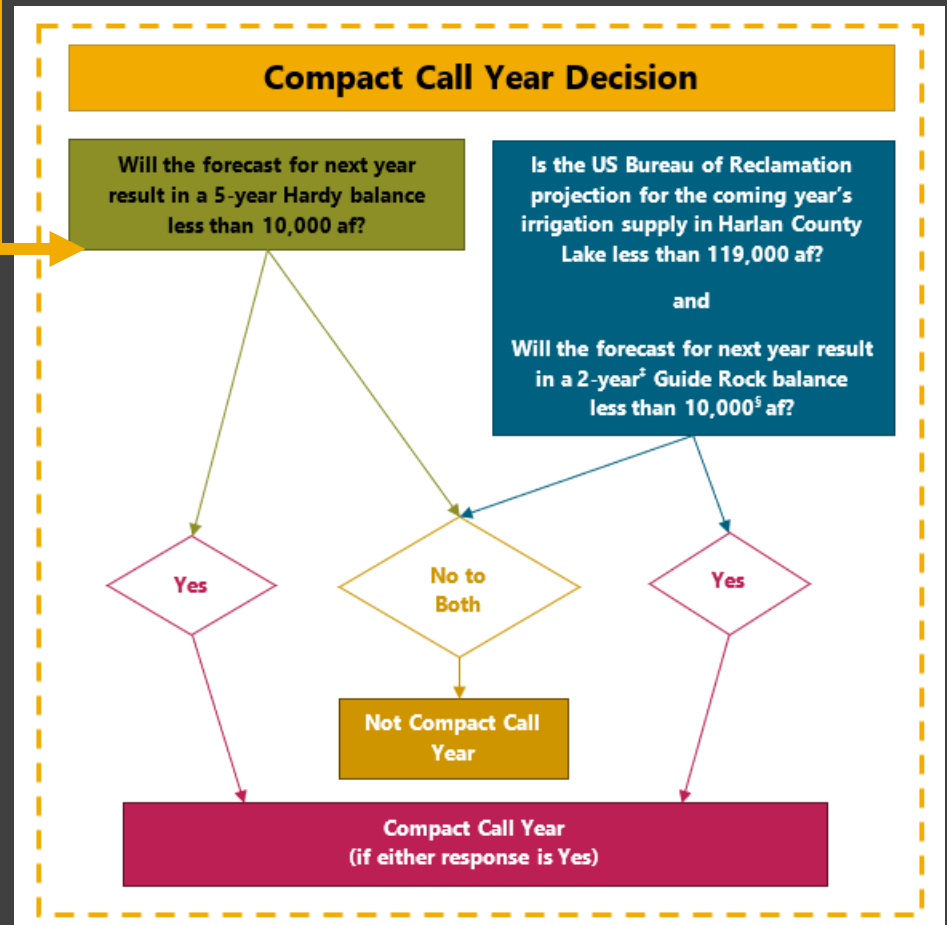
*Includes Compact crediting

Compact Call Year Evaluation:

Will the forecast for next year result in a 5-year Hardy balance less than 10,000 AF?

Year	Hardy Balance (AF)
5-Year Forecast Balance	-57,500

YES.



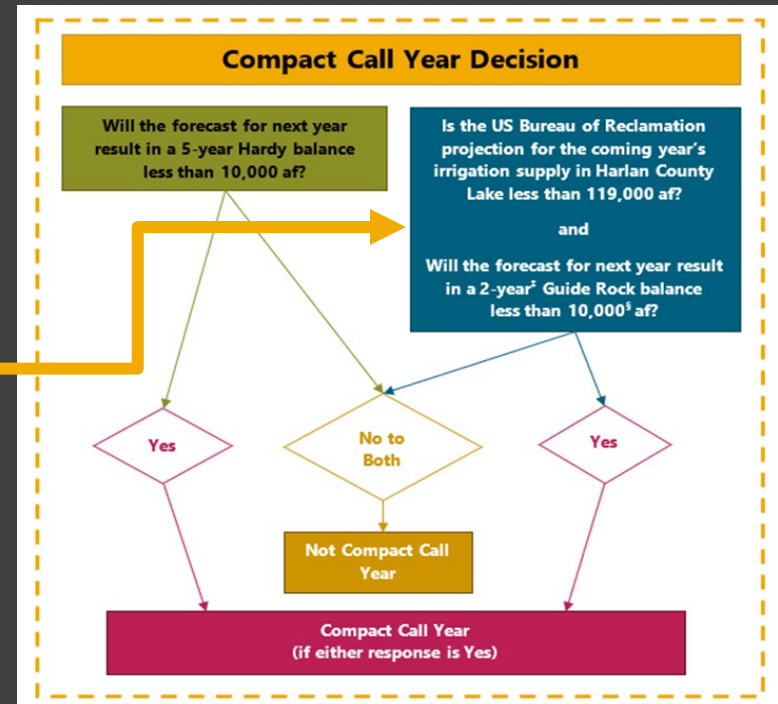
Compact Call Year Evaluation:

Is the US Bureau of Reclamation projection for the coming year's irrigation supply in Harlan County Lake less than 119,000 AF?

AND

Will the forecast for next year result in a 2-year² Guide Rock balance less than 0 AF?

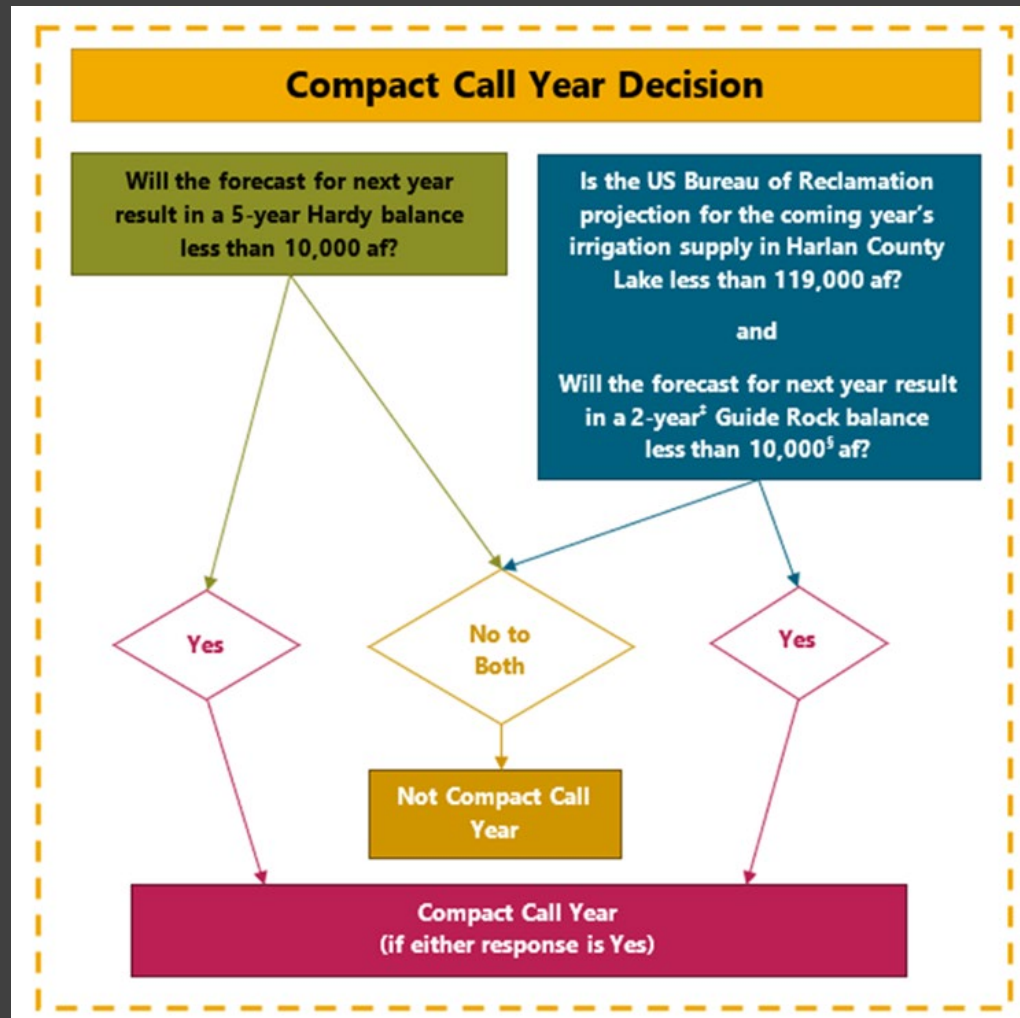
Yes, to Harlan County Lake
Irrigation Supply.
Yes, to Guide Rock balance.



Year	Guide Rock Balance (AF)
HCL Irrigation Supply	74,000
2-Year Forecast Balance	-23,500

§ In the second consecutive Compact Call Year, the 10,000 a-f threshold for the Guide Rock test will be reduced to 5,000 a-f. For the third and subsequent consecutive Compact Call Years, this value will be reduced to zero.

Compact Call Year Evaluation: 2026 projected to be a Compact Call Year.



NRD-Specific Forecast Balances

NRD Annual Hardy Balance Forecast for Upcoming Year (2026)

	LRNRD	MRNRD	URNRD	Total
Allowable Depletion Distribution Percentage from IMPs	25.3%	30.8%	43.9%	100.0%
Allowable Groundwater Depletions	37,100	45,200	64,400	146,700
Projected Groundwater Depletions	48,300	55,500	77,100	180,900
2026 Forecast Balance (no action)	-11,200	-10,300	-12,700	-34,200
2022-2025 (preliminary, with management)	-16,300	2,100	-9,000	-23,300
5-Year Forecast Balance	-27,500	-8,200	-21,700	-57,500
RCCV (projection for 15k mgmt)	9,900	7,400	11,100	28,400

NRD Annual Guide Rock Balance Forecast for Upcoming Year (2026)

	LRNRD	MRNRD	URNRD	Total
Allowable Depletion Distribution Percentage from IMPs	24.5%	31.1%	44.4%	100.0%
Allowable Groundwater Depletions	34,000	43,100	61,600	138,700
Projected Groundwater Depletions	45,500	55,400	77,100	178,200
2026 Forecast Balance (no action)	-11,600	-12,300	-15,600	-39,500
2025 Balance (preliminary, with crediting)	7,700	3,000	5,200	15,900
2-Year Forecast Balance	-3,900	-9,300	-10,400	-23,500
RCCV (projection for 15k mgmt)	9,900	7,400	11,100	28,400

Summary

- Based on the preliminary forecast, the IMP checklist indicates that 2026 is projected to be a **Compact Call Year**.
- Preliminary dry-year forecast currently approximated at:
 - 2025-2026 at Guide Rock balance of **-23,500 ac-ft**
 - 2022-2026 at Hardy balance of **-57,500 ac-ft**
- With projected additional management actions of ~11,600 AF, RCCV is estimated at **28,400 ac-ft**.

Timeline

- **December 2025:** DWEE notifies the NRDs in writing that the following year will be a Compact Call Year and notifies the NRDs how much yield from potential management actions may be needed within the CCY.
- **January 2026:** The NRDs notify DWEE in writing about planned management actions to ensure Compact compliance.
 - DWEE then issues orders to implement surface water controls.
- **Late February or early March 2026:** DWEE provides a written assessment of the NRDs' planned management actions. If DWEE determines that proposed management actions are insufficient to ensure compliance with the Compact, the IMPs, or the Republican River Basin-Wide Plan, the NRDs will implement additional controls to make up the remaining deficit.
- **April 2026:** DWEE notifies Colorado, Kansas, and relevant federal agencies in writing about preliminary management actions and the anticipated water yield.

Timeline

- **May-December 2026:** DWEE provides monthly preliminary accounting estimates to the NRDs, Kansas, Colorado, and the Bureau.
 - 10th of every month
- **By June 1, 2026:** Delivery of Kansas CCV request to KBID account in Harlan County Lake
- **June 2026:** DWEE notifies Colorado, Kansas, and relevant federal agencies in writing about management actions taken and to be taken, and the anticipated water yield.
- **June 30, 2026:** Bureau finalizes Water-Short Year designation.
- **By October 1, 2026:** Nebraska and Kansas review accounting;
 - Kansas can request remaining Compact compliance volume.
- **September–October 2026:** DWEE notifies the NRDs in writing about the assessment of NRD management actions and identifies specific additional management actions that are required by each NRD.

Next Steps

- **Preliminary Forecast and Basin-Wide Meeting**
 - Participants can 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 Compact Call Year.
- **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 and whether a Compact Call Year will be designated.
 - If any potential deficit between allowable and forecast depletions is projected, that information will also be included with the final forecast.
- <https://dnr.nebraska.gov/water-planning/lower-republican-nrd>

CCV Administration Discussion

Augmentation Impacts

Augmentation Impacts – IMP

Our IMPs state:

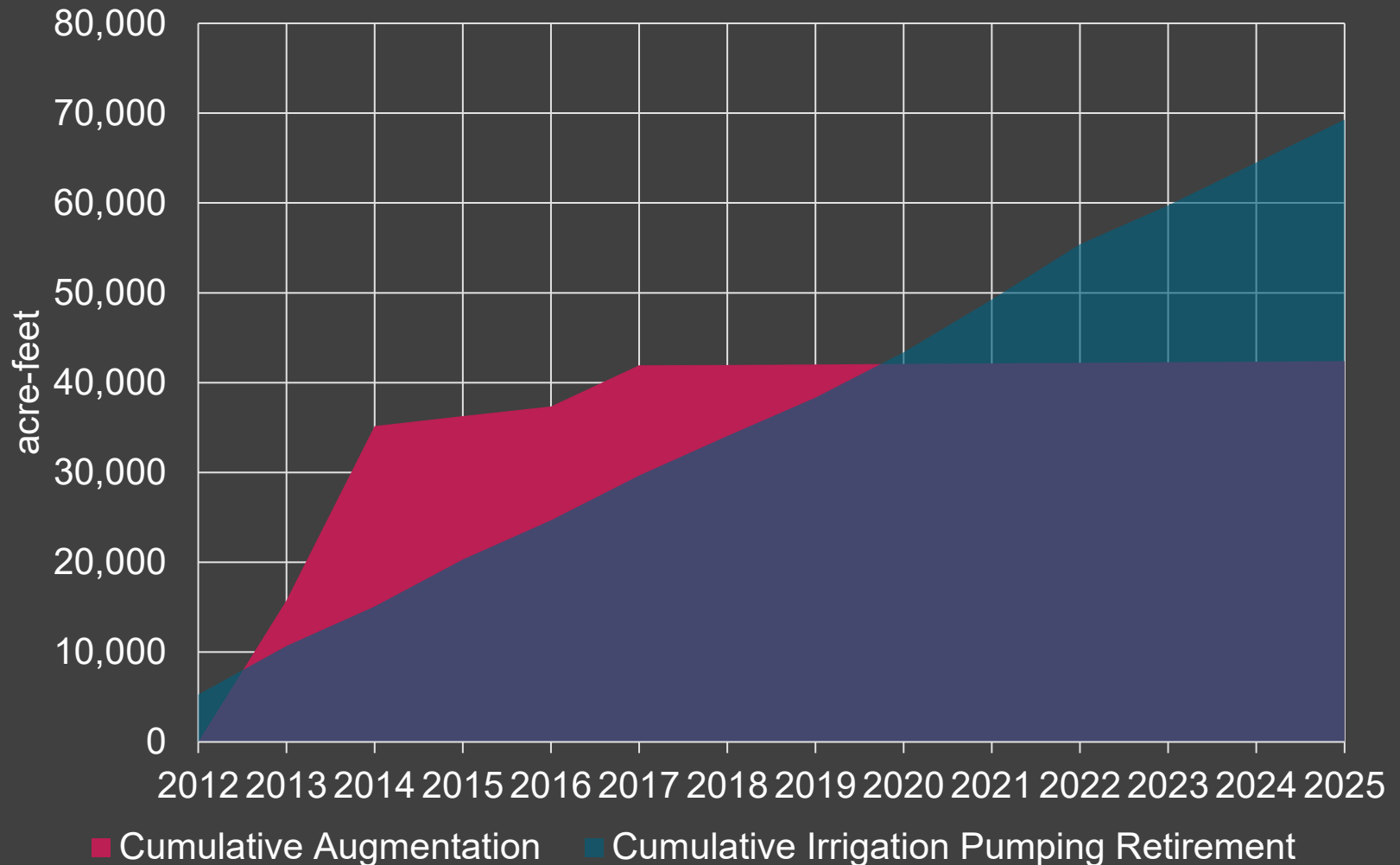
“...[DWEE] will annually evaluate whether offsets are necessary to mitigate new net depletions resulting from augmentation pumping or other management actions.”

2025 Operations

- Both Rock Creek and NCORPE are expected to pump for Compact compliance in 2025.
- The following analysis does not include 2025 augmentation pumping to the Republican for Compact compliance.
- 2025 streamflow augmentation is expected to exceed any groundwater depletions from the projects.
- Final analysis of 2025 will be provided with the 2026 report.

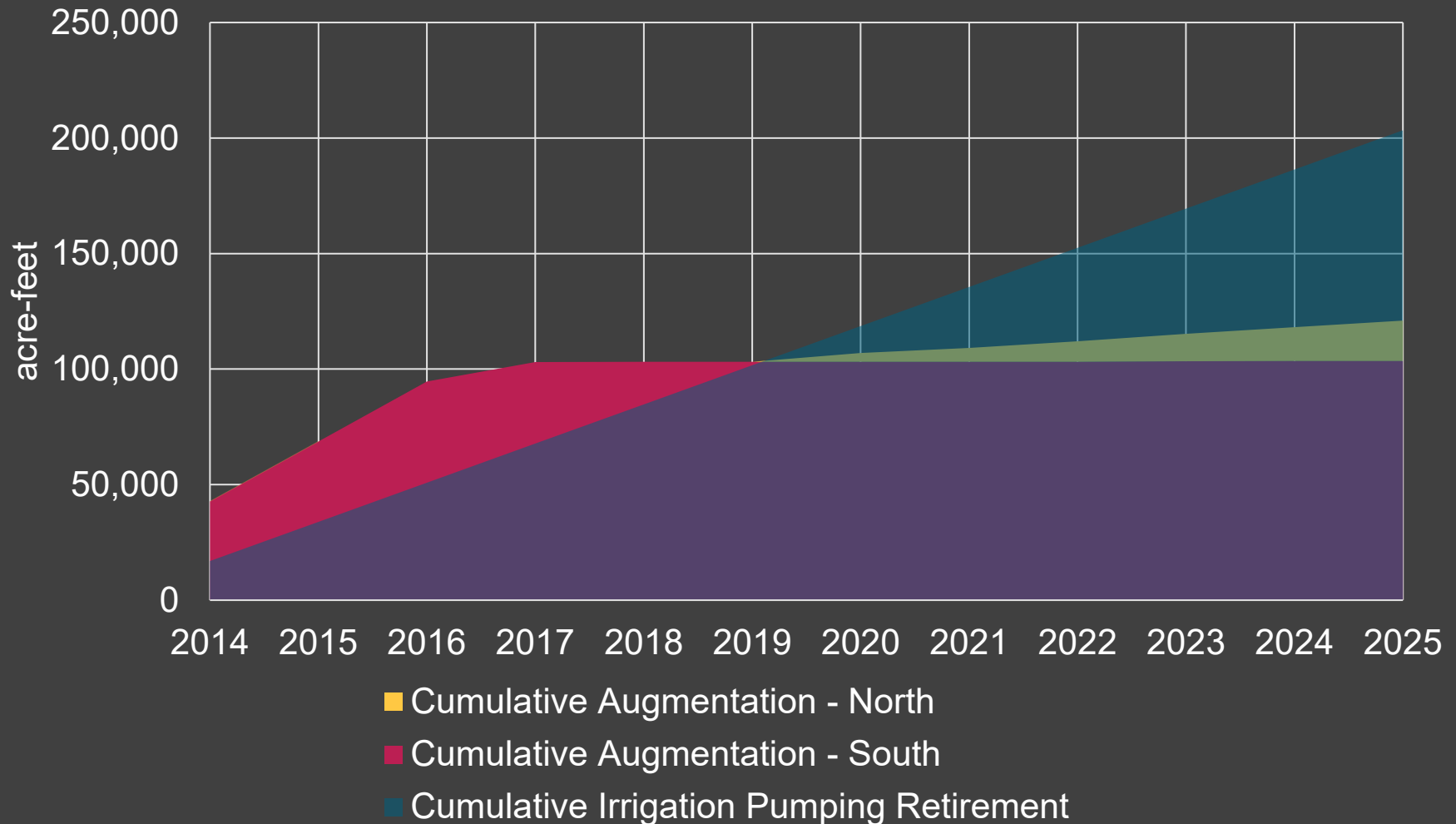
Augmentation Impacts – Model Inputs

Rock Creek



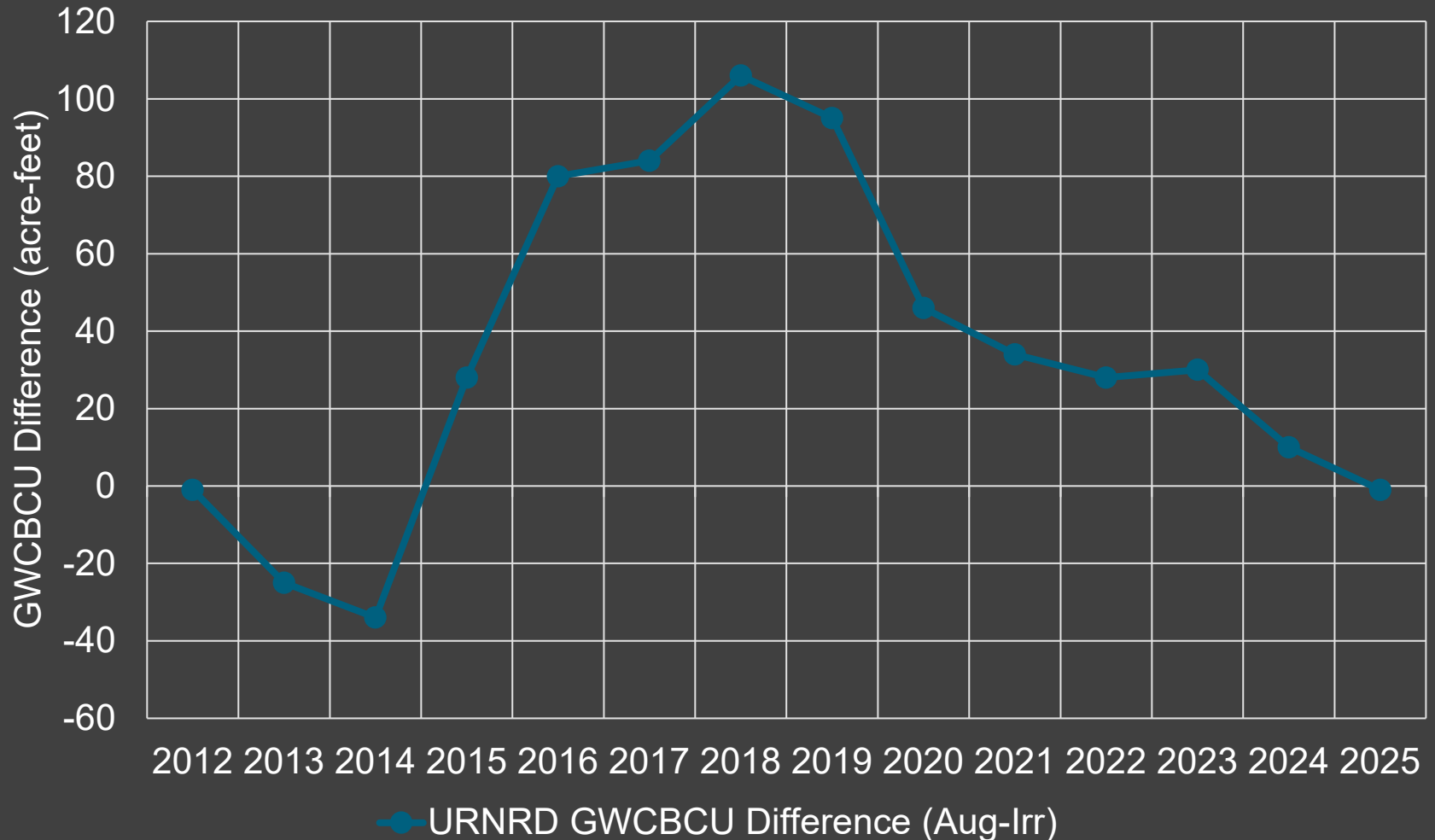
Augmentation Impacts – Model Inputs

N-CORPE



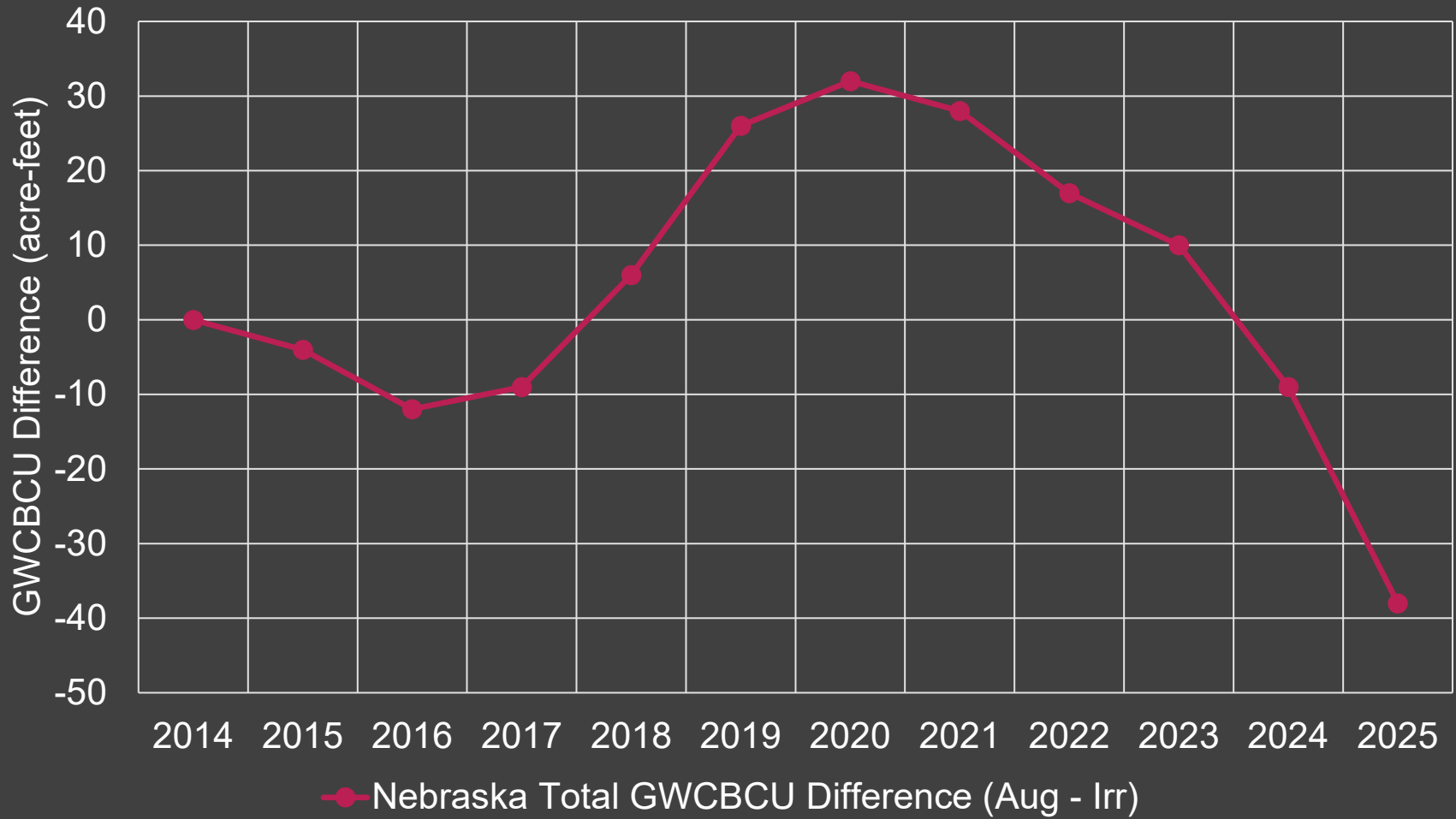
Augmentation Impacts – Oct. 2025 run

Rock Creek

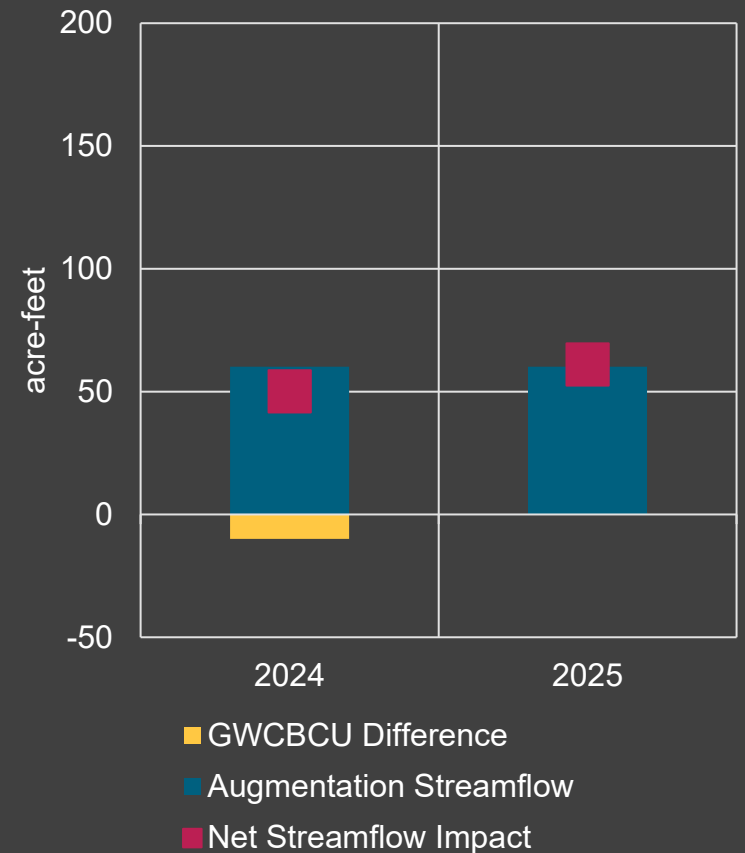
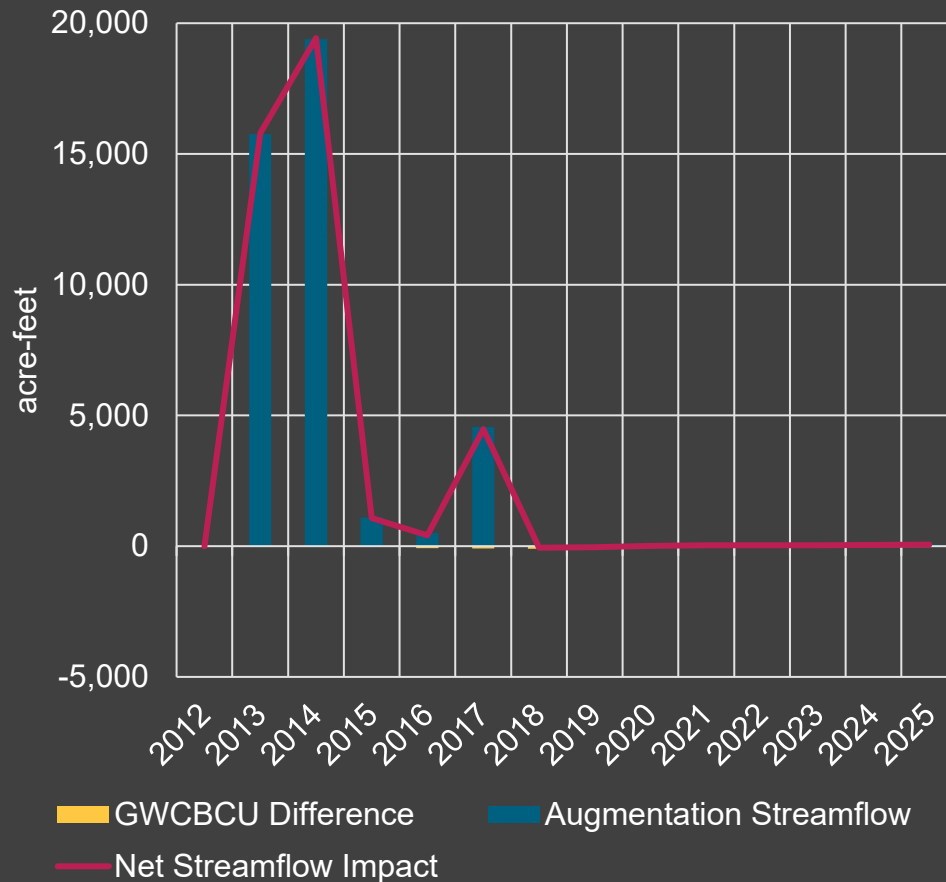


Augmentation Impacts – Oct. 2025 run

N-CORPE

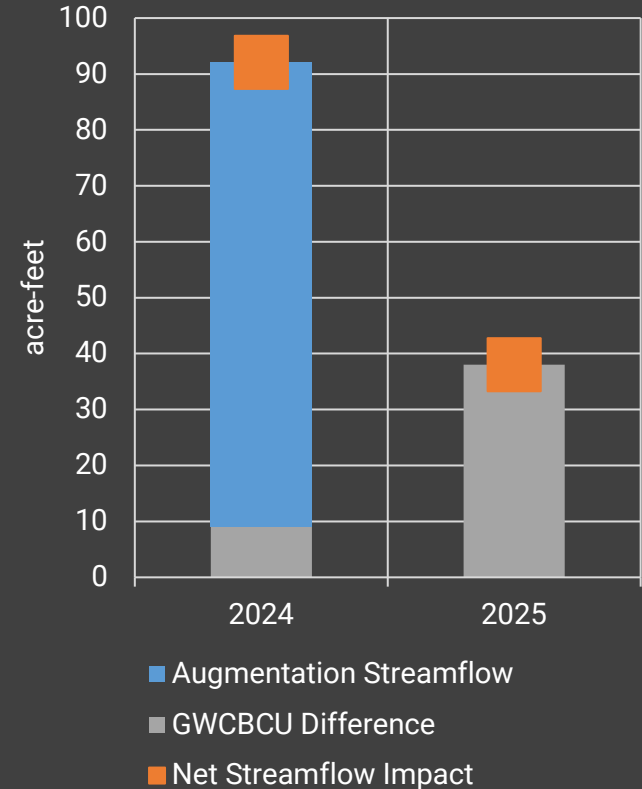
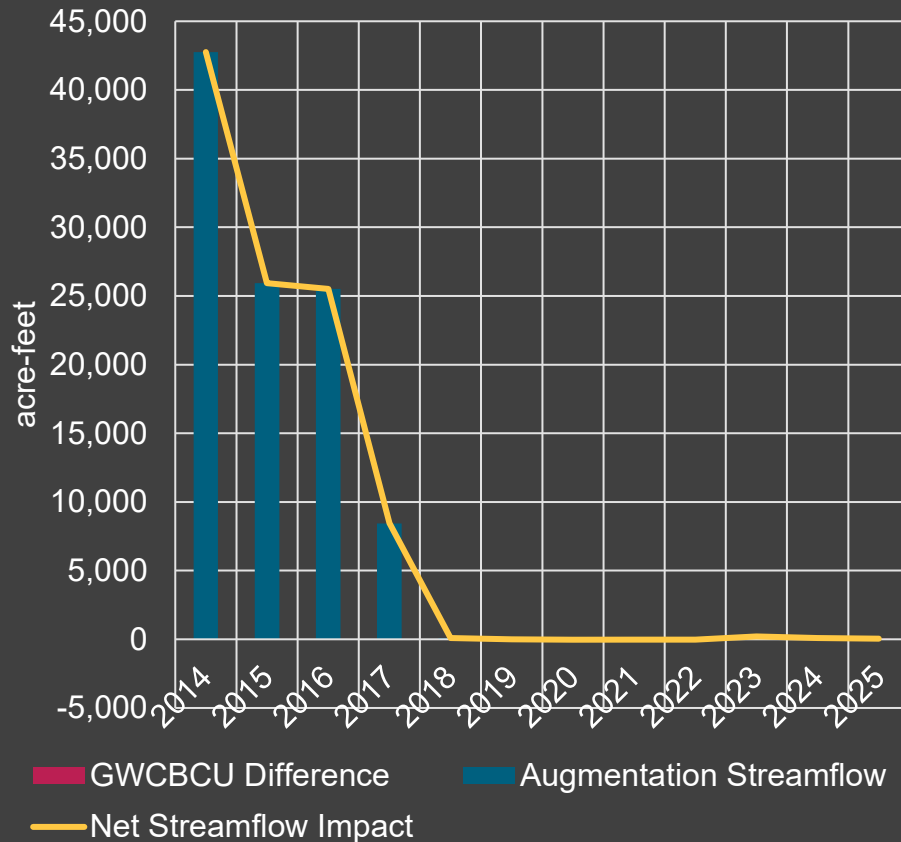


Augmentation Net Streamflow Impacts – Rock Creek



*Augmentation streamflow assumed to occur in same year as pumped; 2024 pumping repeated for 2025; analysis run in October 2025 without projection for 2025 compliance

Augmentation Net Streamflow Impacts – N-CORPE



*Augmentation streamflow assumed to occur in same year as pumped; 2024 pumping repeated for 2025; analysis run in October 2025 without projection for 2025 compliance

Hydrologically Balanced Assessment

For the IMP for the Republican Basin
Portion of Tri-Basin NRD

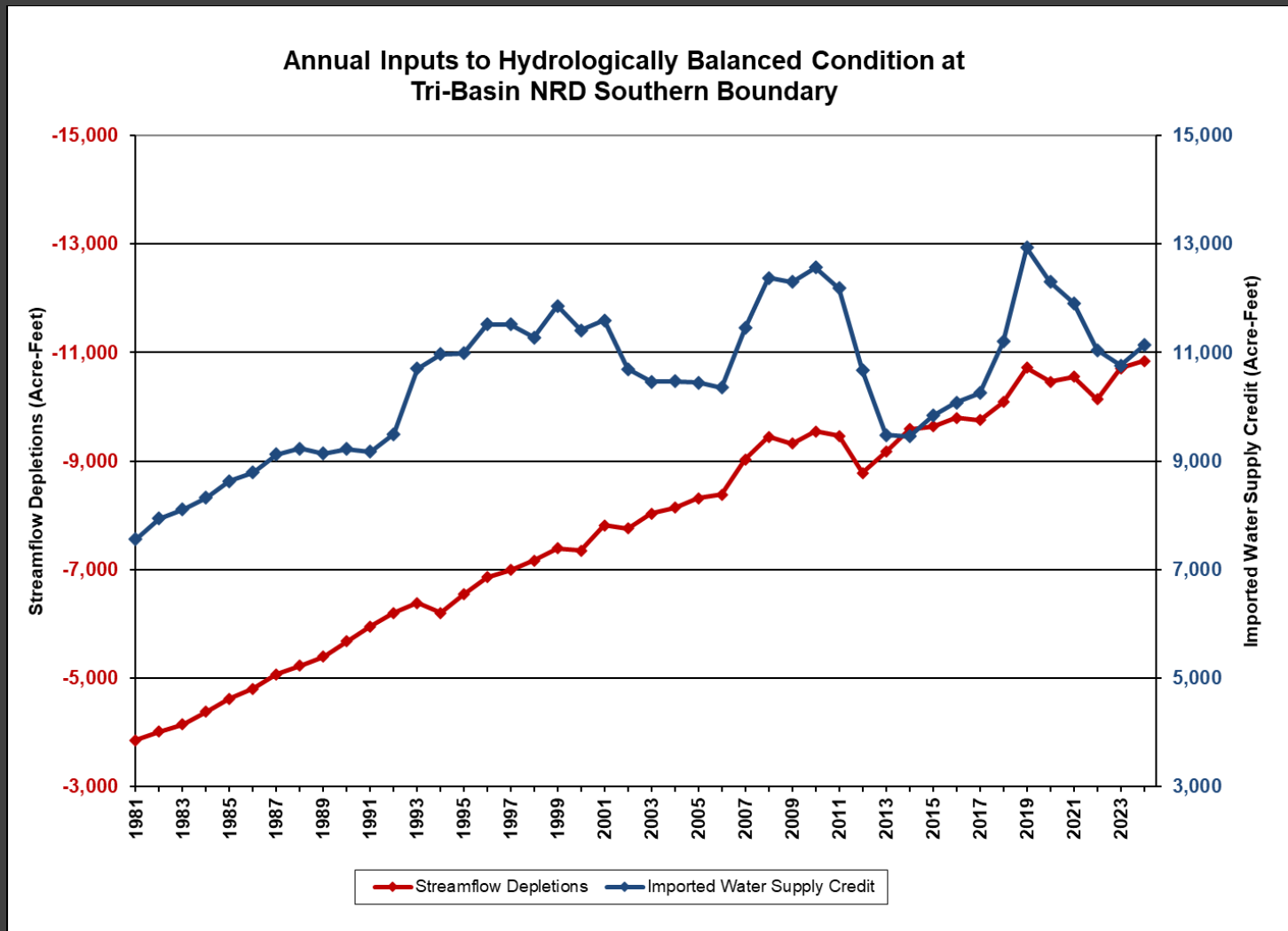
Goal A, Objective 1

“Revise existing NRD integrated water management rules and regulations, to the extent necessary, to insure **that the NRD will incrementally achieve and sustain a hydrologically “balanced” condition** so that, in combination with imported water contributions from the Platte basin, streamflow augmentation and other management actions, Tri-Basin NRD water users will not cause a net depletion to streamflow.....**Under a hydrologically balanced condition in the context of this plan, baseflow impacts and the mound credit will be equal.**”

Assessment

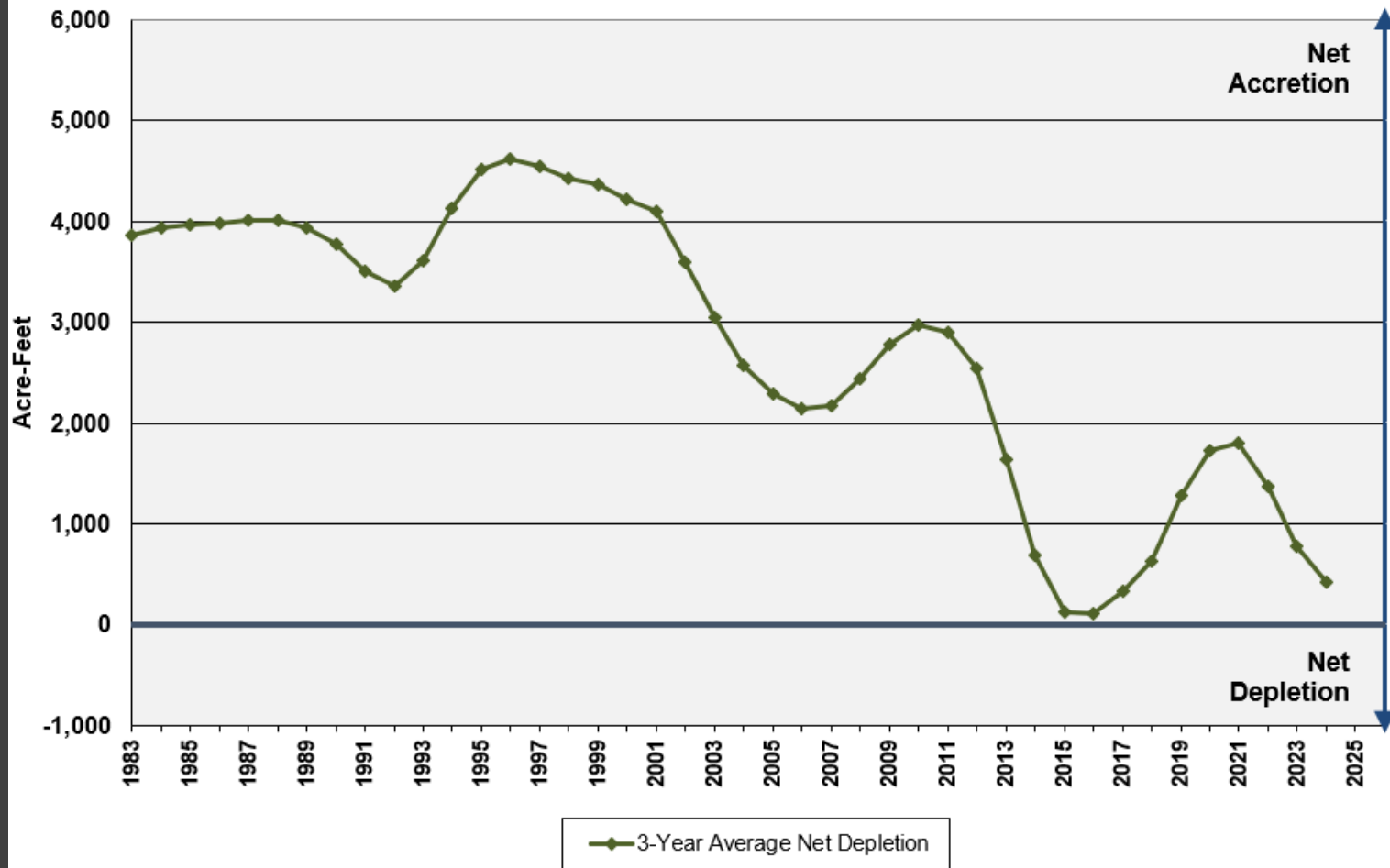
“Goal A Objective 1 of this IMP is to establish a hydrologically ‘balanced’ condition in which Tri-Basin NRD water users will **not cause a net depletion to streamflow of the Republican basin when evaluated on a three-year rolling average basis**.”

Modeled Depletions and Accretions, 1981 – 2024

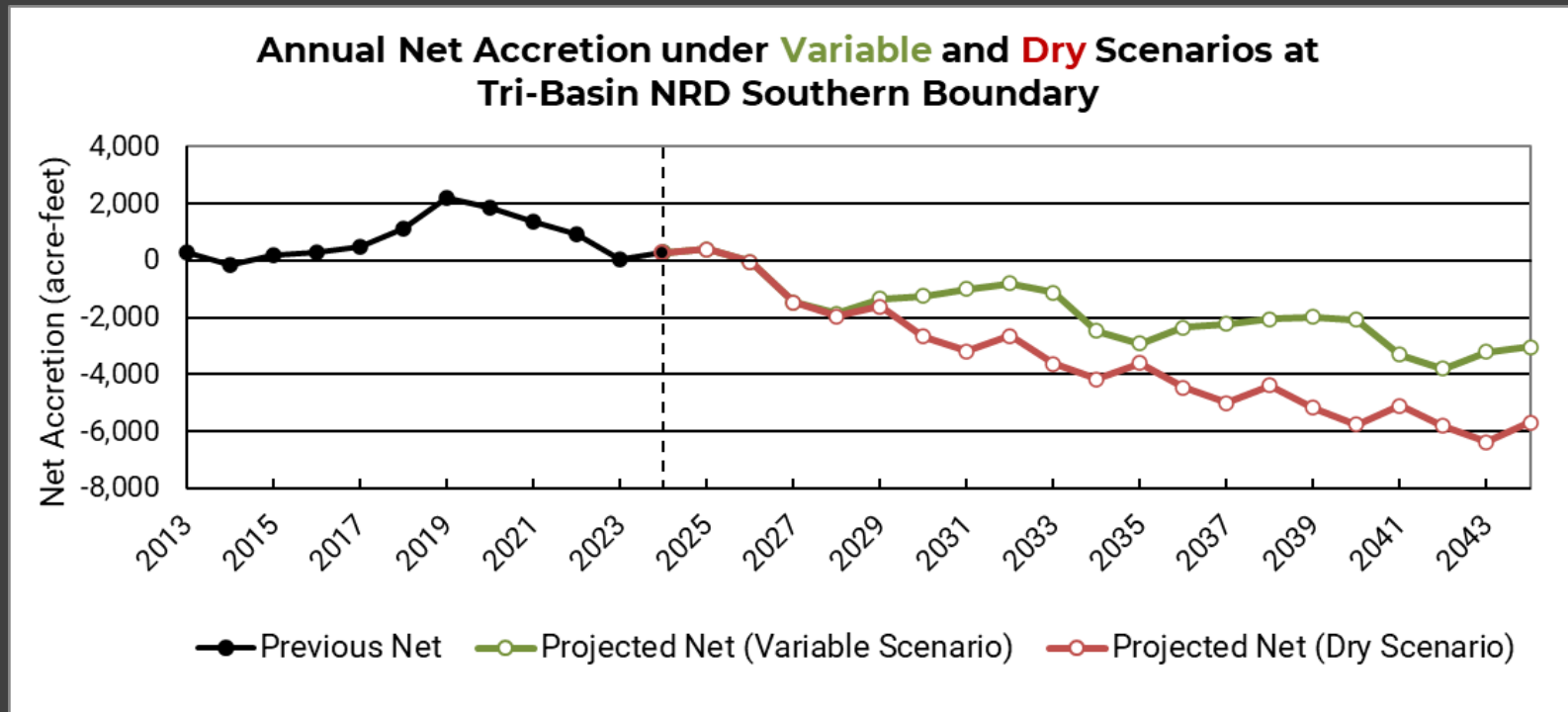


Hydrologically Balanced Assessment

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



Projected Net Accretion



In 2027, the 3-year average net accretion projected to be negative (-372 ac-ft).

The logo for the Nebraska Department of Water, Energy, and Environment. It features the word "NEBRASKA" in a large, white, sans-serif font. A thick, orange-yellow swoosh underline starts under the 'N', passes under the 'B', 'R', and 'A', and ends under the 'K'. The entire logo is enclosed within a teal-colored rectangular border.

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