

TRANSFERRING GROUNDWATER IN THE HIGH PLAINS

Middle Republican Natural Resources District, Nebraska



THE DAUGHERTY
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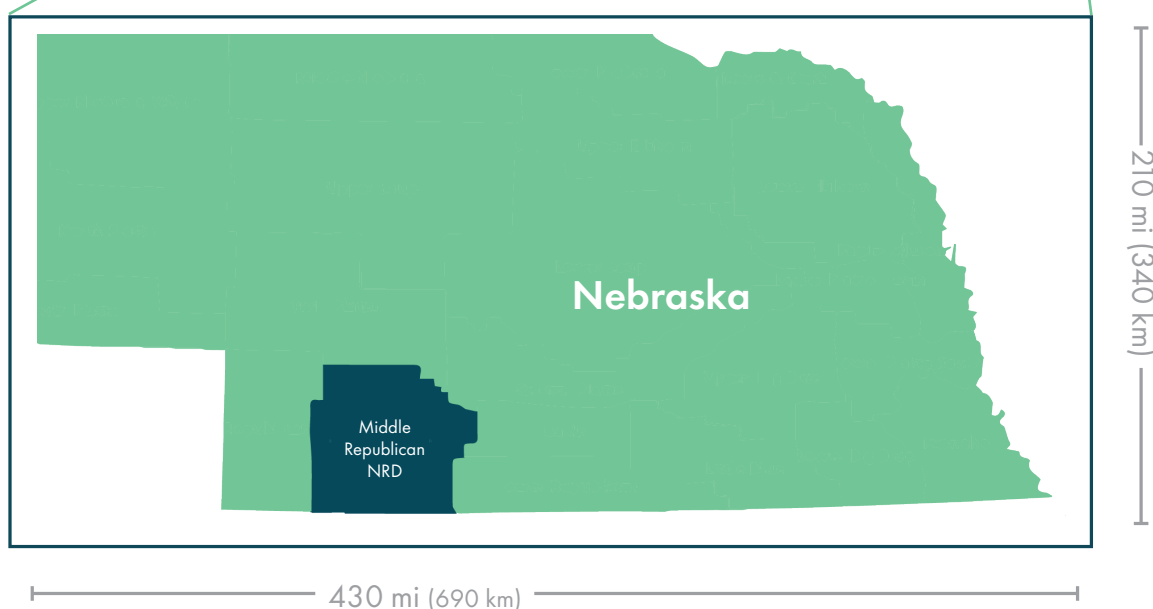
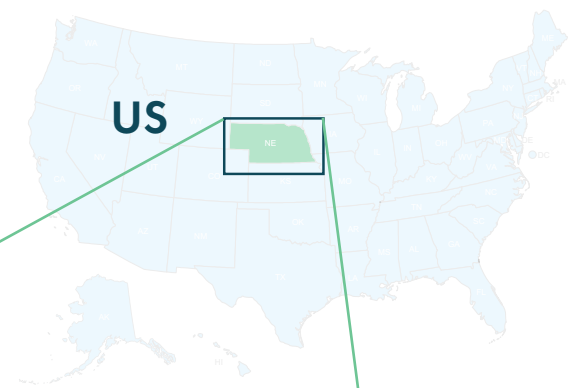
▶ The Middle Republican Natural Resources District (MRNRD) manages groundwater use for crop irrigation to ensure the long-term sustainability of its supply. The MRNRD is accountable for the impacts of groundwater pumping on streamflow governed by interstate compact. The district also seeks to prevent long-term groundwater depletion and limit irrigated land development.

▶ Groundwater use for irrigation is restricted with mandatory metering and a 5-year allocation system that allows banking of allocation between those 5-year periods. Most growers are able to use their banked allocation and, to date, have not needed to stop irrigating even during extended drought periods.

▶ Growers can formally transfer their groundwater pumping rights separately to land ownership. To be approved, groundwater transfers must be determined to have no net negative impacts on streamflow, groundwater depletion, or irrigated land development.

▶ Formal groundwater transfers are usually small and infrequent. Transaction costs include a small transfer safety analysis fee and, when approved, an administrative transfer fee. Transaction activity appears to be impacted by growers seeking to earn more returns from the irrigation technology used (e.g., a transition from partial to full center pivot).

▶ In MRNRD, informal groundwater transfers occur more frequently than formal transfers. These arrangements allow for localized and restricted reallocation of groundwater pumping rights with very little administrative burden and no transfer of the property right.





BACKGROUND

MRNRD, in southwest Nebraska, falls in the middle area of the Republican River Basin. The area receives an average of 20-22 inches of rainfall per year. There are 335,000 irrigated agricultural acres. Of these, 260,000 acres use groundwater only. The rest use either surface water or a mix of both surface water and groundwater. The main crops are corn and soybeans, although some wheat and alfalfa are also grown in the area. MRNRD sets a 5-year pumping allocation of 60 inches and meters and monitors all groundwater wells to verify compliance. Banking of unused water, called "carryforward" in MRNRD, is permitted, which allows exceeding the 60 inch-rule, but by no more than 12 inches during an allocation period. If the Republican River water supply is determined to be in shortage ("Compact Call Year"), the allocation is 15 inches for that year, and a grower is not allowed to exceed it.



GROUNDWATER TRANSFERS

For a formal groundwater transfer to be approved by the MRNRD, it needs to go through a special application process, "variance request", which relies on an evaluation of three criteria. Transferred groundwater pumping rights can't result in an increase in (i) streamflow depletion, (ii) groundwater level decline, or (iii) irrigation development. Applicants pay \$20 for a transfer safety analysis to determine if the transfer complies with these criteria. The analysis costs \$20 to an applicant and is done by comparing the location centered at the originating well with the destination location centered at a well where groundwater is proposed to be withdrawn (a "floating township" analysis, in MRNRD terminology). If the formal transfer is determined safe, an applicant needs to pay the administrative fee for the transfer, which is \$100. About 20% of the 10-15 formal transfer applications received annually are approved. Growers whose applications aren't approved are allowed to appeal to the Groundwater Committee and then the Board of Directors. MRNRD has approved formal transfers as large as 130 acres, but, on average, most transfers are between 20-40 acres. Most of those transfers are between irrigators. Formal transfers are not allowed when the Republican River supply is determined to be in shortage. Informal transfers allow growers to combine their groundwater allocation across multiple fields. For informal transfers to be approved by the MRNRD, the landowners need to submit a request, and the areas need to be determined to be actively used for agriculture and under "common management" (e.g., family member ownership, landlord/tenant leases).



TRANSFER DIRECTION & BOUNDARIES

Groundwater pumping rights can be transferred at any distance and in any direction within the MRNRD as long as the transfer doesn't cause an increase in streamflow depletion, groundwater level decline, or irrigation development. Transfers are automatically rejected if they don't meet one of the criteria. For informal transfers, these potential impacts are not accounted for. Informal transactions can happen between non-adjacent fields.



OTHER POINTS OF INTEREST

Growers who can legally irrigate with both groundwater and surface water ("commingled") on their property are able to transfer their water, but that hasn't occurred yet in MRNRD. The transfers would need to be co-administered by the Nebraska Department of Natural Resources and relevant irrigation districts because surface water is not overseen by the Natural Resources Districts.

Transfer means a change in the groundwater use location, purpose, or point of withdrawal.

A **formal transfer** is a transfer of a property right. In MRNRD, formal transfers are called the "permanent transfer of acres."

An **informal transfer** is a reallocation of water across space/time without transfer of a property right. Informal transfers, often called "pooling," allow joint operation of two or more irrigated tracts.

Transfer direction must be considered when there are concerns about impacts of groundwater pumping on streamflow.

Transfer boundaries define the area within which groundwater can be transferred.

Commingling means that both groundwater and surface water are legally available for use on the same irrigated acres.

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