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ND Department of Water Resources launches interactive aquifer map

BISMARCK, ND - The North Dakota Department of Water Resources (DWR) has launched an interactive map of the potential for managed aquifer recharge (MAR) across the state.

The map, available on the department's website, provides users with information on the feasibility to capture a portion of excess or abundant surface water flows to store in an aquifer for later use either through well injection or surface infiltration. Much like surface water reservoirs that augment variable river and stream flow conditions, MAR allows aquifers to be used as underground reservoirs.

"Given the growth and progression of water development in North Dakota, many of the state's groundwater systems are now approaching full appropriation," Andrea Travnicek, director of the Department of Water Resources said. "As many of North Dakota's major groundwater systems approach sustainable limits, it will become increasingly difficult to approve additional appropriation without some form of augmentation such as MAR."

The department completed a statewide assessment of MAR this year. The purpose was to evaluate the feasibility and use of MAR in North Dakota's glacial drift aquifers to extend and enhance their resiliency. The online map ranks each aquifer in a five-tier structure, from poor potential to excellent. The map also allows users to find further information regarding the extents of the aquifer as well as its water quality represented by total dissolved solids (TDS). This will serve as an important step in North Dakota's ability to strategically locate and utilize MAR in the future, according to the DWR.

The DWR will use the data to develop recommendations of future MAR projects in North Dakota. The department will consider the overall need for recharge, hydrologic conditions, source water suitability, water quality, environmental impacts, regulations, costs, and stakeholders when determining which aquifers for the proposed pilot projects.

"The report provides the foundation for a second phase of MAR assessment in North Dakota," State Engineer John Paczkowski said. "More specifically, future efforts could include scenario modeling of MAR practices statewide to address growing agricultural, industrial, and residential water needs."

MAR has previously been used or tested in several instances and at multiple locations in North Dakota. Most notably, beginning in 1932, Valley City recharged Sheyenne River water into an abandoned gravel pit overlying a surficial aquifer where a hand dug municipal well was located. That effective design is still in operation today, with no major changes to the original concept.

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