



THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

NEW RADAR SERVING SOUTHWESTERN ND

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In July, weather radar services in southwestern North Dakota were interrupted when the 1970s vintage WSR-74C Weather Radar at the Bowman Regional Airport (shorter radar pictured in image) was powered down and the new WRS300 Dual-Polarization Radar was commissioned. The entire region including southeastern Montana and northwest South Dakota has benefited from this radar service since year-round operations began on January 1, 2011. Eight counties including Bowman, Billings, Dunn, Golden Valley, Slope, and Stark, in addition to Fallon County, Mont., and Harding County, S.D. have been funding its annual operating and maintenance costs.

Funding to purchase the new radar in Bowman was approved in the 2023 ND Legislative Session. Since the approval of funding, a lengthy and complicated process ensued of procuring the radar and tower and getting everything shipped to Bowman, assembled, and operational.

When asked about the new radar, Bowman County Emergency Manager Dean Pearson commented that, "the radar is part of the storm watch and warning system that Bowman County uses for both summer and winter events. We appreciate having it available, as it covers a national radar "gap" for our region. This new radar will give us even more tools that we can use to analyze weather events in our area."

The new weather radar provides enhancements in service including increased range, improved resolution, and "dual polarization" products. Dual polarization means that the weather radar sends out both horizontal and vertical pulses of energy and then listens for their returns. This technology allows the radar to determine what types of precipitation it is sampling. For example, if the radar samples a volume of air inside a thunderstorm and the returns are circular in shape, this is indicative that hailstones are



present in that part of the storm. The new radar also has a larger dish antenna compared to the older unit, allowing the beam to be more focused and providing better quality wind velocity data.

Currently, images from the Bowman Radar can be viewed on the Department of Water Resources' web site at <http://www.dwr.nd.gov/arb>. In the future, the goal is to integrate Bowman Radar into the national radar network so that you can view it with whatever radar app you decide to use.

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