



# THE ATMOSPHERIC RESERVOIR

*Examining the Atmosphere and Atmospheric Resource Management*

## Bowman Radar to Operate Year-round

By Darin Langerud

Adequate weather radar coverage over parts of southwest North Dakota, northwest South Dakota, and southeast Montana has been an issue for decades. The National Weather Service's (NWS) NEXRAD Doppler radars are sophisticated instruments, providing valuable information, but they, as all radars, are limited by range. Coverage from NWS radars in Bismarck, Billings and Glasgow, Mont., and Rapid City, S.D. overlaps at high altitudes above the aforementioned area, providing only a partial view of rain and snow. This is especially important during severe summer and winter storms, where the most valuable information is often what's happening near the ground.

To help fill the radar coverage gap, the Atmospheric Resource Board (ARB) has partnered with eight counties in the affected area to provide year-round, supplemental coverage from its radar facility in Bowman. The ARB has operated its own weather radar at the Bowman Municipal Airport since 1997 in support of cloud seeding operations each summer from June through August. Around-the-clock operations, 24 hours a day, seven days a week will begin on Jan. 1.

Recent upgrades to the radar allow remote control and monitoring, removing the need to have someone on site and making year-round operations much more cost effective. Technological improve-



ments have made the radar more sensitive, detecting precipitation sooner and at greater distances. Doppler capability provides the means to detect wind motions in the atmosphere, improving the ability to detect severe storms, and even those that may spawn a tornado. Annual operating and maintenance (O&M) costs for the Bowman radar during the months not covered by the cloud seeding program are projected to be \$25,000. Bowman, Billings, Dunn, Golden Valley, Slope and Stark counties, in addition to Fallon County, Mont., and Harding County, S.D. are funding the O&M costs. The ARB will operate the radar and maintain a reserve fund should the radar require extraordinary maintenance or parts.

Efforts to operate the radar

year-round were kick-started by a community service project through the North Dakota Rural Leadership program. "Having local radar coverage for our area is vital for the safety of our citizens," said Medora Stevenson, local coordinator for the radar project.

Radar data will be shared directly with the partnering counties and provided to NWS forecast offices in Bismarck, Billings, Glasgow and Rapid City. The ARB will continue to provide real-time radar images on its website at <http://swc.nd.gov/arb>.

"The number one reason we wanted to be a part of this project is increased public safety," said Brent Pringle, Stark County Emergency Manager. "We are very aware of the gap in radar coverage in the southwestern portion of the state. The 365 days of continuous coverage will allow us to monitor both summer and winter weather that travels into our region. The assuredness of having advanced warning is invaluable, and the access to this technology allows us to do a better job of keeping our communities safer and better prepared."

Atmospheric Resource Board  
North Dakota State Water Commission  
900 East Boulevard, Bismarck, ND 58505  
(701) 328-2788  
<http://swc.nd.gov>

ND Weather Modification Association  
PO Box 2599, Bismarck, ND 58502  
(701) 223-4232