

Review of NWS Ozone Guidance for Albuquerque

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Background

I have been forecasting ozone levels in Albuquerque for the City of Albuquerque's Air Quality Division (AQD) for four summers. I was initially trained in ozone forecasting by Sonoma Technologies, Inc. I was a forecaster in the Albuquerque office of the National Weather Service for five years before going to work for the City. I have a B.S. in Meteorology from the University of Oklahoma.

This summary reviews the performance of experimental National Weather Service (NWS) guidance. I have assumed an audience of professional meteorologists who understand ozone forecasting but haven't done it in Albuquerque.

Performance of NWS experimental ozone modeling

The Table below summarizes the results of the performance of NWS experimental guidance for 2007:

NWS Experimental Guidance

		Good	Moderate	USG
Observed	Good	15	2	0
	Moderate	5	4	0
	USG	0	0	0

In previous years, there were several days when the experimental guidance predicted USG ozone levels and the actual level was in the moderate category. No such days were logged in 2007. With the above chart, it's good to keep in mind that there were a couple of days where actual and guidance were different by less than $5 \mu\text{g}/\text{m}^3$, but still in different categories.

Although I couldn't collect data for every day, it seems to me that the experimental guidance for ozone levels in Albuquerque has improved significantly. It has become fairly good at distinguishing good versus moderate (AQI) days.

There are simply not enough days of Unhealthy for Sensitive Groups (USG) levels for guidance to make sense of it. Furthermore, when the ozone gets into the USG category, it's event driven and wildfire smoke is the usual culprit.

August 15-17, 2007 had ozone levels in the mid to high range of the moderate category. That was a transport event. Pollution had built up under a high pressure system over Dixie/Texas and deep easterlies had transported some of it to Albuquerque. The guidance predicted 8 hour maximums of 59-63 $\mu\text{g}/\text{m}^3$ (good AQI); the actual maximums were 71-77 $\mu\text{g}/\text{m}^3$. Maybe these events are where the forecaster needs to add some value.