

Ozone Photochemical Modeling in Southern Doña Ana County, New Mexico

Project Goal: Establish baseline modeling for ozone analyses in southern Doña Ana County.

Project Description: Located along the international border region of New Mexico, southern Doña Ana County includes the communities of Sunland Park, La Union and Santa Teresa. The area is surrounded on the northeast, east, southeast, south and southwest by the cities of El Paso, Texas, and Ciudad Juárez, Chihuahua, MX, collectively known as the Paso del Norte. The Paso del Norte airshed is a unique, bi-national, tri-state community with shared borders and air pollution problems. According to the 2010 Census, approximately 2.3 million people reside in the Paso del Norte region, with the vast majority residing in Ciudad Juárez and El Paso.

Historically, southern Doña Ana County monitors record high levels of ozone pollution. In 1995, the area was designated nonattainment for the 1-hour ozone National Ambient Air Quality Standard (NAAQS). Due to the revocation of the 1-hour NAAQS for ozone in 2005, this area was re-designated to attainment status. This area is presently in attainment with the 2008 ozone NAAQS of 75 parts per billion (ppb), but would not be in compliance with a lower level (60 ppb-70 ppb) discussed in the current review documents for a revised ozone NAAQS. The current (2011-2013) design value for ozone in Santa Teresa is 75 ppb, and in Sunland Park is 71 ppb.

The New Mexico Environment Department's Air Quality Bureau (AQB) proposes to conduct ozone photochemical modeling in the border region of Doña Ana County, New Mexico. Using 2011 as the baseline year, this modeling, in conjunction with ozone inventory development, meteorological modeling and ozone model performance analysis, will enable AQB to determine contributing factors and control strategies to reduce ozone levels and improve air quality in the border region. In addition, the study will help determine baseline ozone concentrations in the region, the geographical extent of a potential nonattainment area, how the model performs in the region, and areas of potential improvement in the modeling analysis. The AQB would coordinate this work through the Western Regional Air Partnership's (WRAP) WestJump ozone analysis project.

Benefits to Air Quality in the Border Region: This project aims to develop an analysis of modeled baseline ozone concentrations with high resolution in the border area, where ozone concentrations may exceed the NAAQS in the future. Funding would enable detailed emissions inventory data, meteorological monitoring and modeling data, and source apportionment to identify significant contributions to the border area's ozone concentrations.

Deliverables:

- Completed emissions inventory and meteorological modeling data
- Completed report of ozone model performance and improvements made to model
- Completed report with specific ozone modeling results for border region and source apportionment results, including 2011 base case and 2020 future case modeling

Budget: The total amount requested is \$250,000.