

Air

Number of Days Exceeding Air Quality Standards in Border Monitoring Areas Figure 7		Type of Indicator State
		Goal and Objective: 2.1
Description of the INDICATOR		
<i>Definition</i>	Number of days any one monitor in a geographical monitoring area exceeded the 8-hour binational standard for ozone (0.08 ppm) or the 24-hour U.S. standard (150 µg/m ³) for PM ₁₀ , 2001-2005.	
<i>Importance of the indicator/purpose</i>	This indicator indicates the number of days, in a geographic area, that air pollution reached levels considered unhealthy for sensitive individuals, and possibly others, depending on the actual levels of air pollution reached. At levels slightly above the standards, members of sensitive groups may experience health effects but the general public would likely not be affected. At higher levels, everyone may experience health effects, and sensitive individuals might experience more serious health effects.	
<i>Units of measure</i>	Number of days any one monitor exceeds the standards.	
<i>Concepts and definitions</i>	<p>Ozone (O3) – Ozone is a photochemical oxidant and the major component of smog formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) in the presence of sunlight. These pollutants are emitted by transportation and industrial sources.</p> <p>O3 is reactive and damages lung tissue, reduces lung function, and increases sensitivity to other irritants.</p> <p>Particulate Matter 10 (PM10) -- Particulate matter (PM) with an aerodynamic diameter of 10 microns or less (PM10) consists of ground geologic material entrained into the air by agricultural processes, unpaved roadways, and quarry and cement manufacturing. Exposure to PM is a major human health concern including effects on breathing, aggravation of respiratory and cardiovascular disease and premature death.</p> <p>Air Quality System (AQS) Air Quality Index (AQI)</p>	
<i>Coverage</i>	Yearly 2001 - 2005. Five geographic monitoring areas: Tijuana/San Diego, Mexicali/Imperial Valley, Nogales/Nogales, Ciudad Juarez/El Paso, Lower Rio Grande Valley. Monitors are located on both sides of the border except in the Lower Rio Grande Valley area. Air data is also available, but not included in this indicator, for outlying sites in between the geographic areas. (Figure 9-1).	
<i>Calculation</i>	<p>To determine the monitors within each area, run the CICA Border Air Quality Data “Monitor Values Report” for the areas of interest. (The location of air monitoring sites within these areas is depicted in Figure 9-2 for Tijuana/San Diego, Figure 9-3 for the Mexicali/Imperial Valley, Figure 9-4 for Nogales/Nogales, Figure 9-5 for Ciudad Juarez/El Paso, and Figure 9-6 for Lower Rio Grande Valley.) Since three years of data are necessary, run three reports - Review and select the U.S. and Mexican monitors common in all three reports.</p> <p>Derive the number of exceedance days from the Air Quality System (AQS) using the AMP410S Air Quality Summary Report. Run a report for each Geographic Area/Pollutant/Year using the List of Monitors and use the by "state" option. The output is one page for each state showing the AQI value for each day of the year. Manually make a list of all the dates with an AQI greater than the standard (100), including all U.S. and Mexico border states. Delete duplicate dates from the list. Count the dates on the list and this is equal to the exceedance days for the geographic monitoring area. The data are listed in Table 9-1 for Ozone and 9-2 for PM10.</p>	
<i>Sources of information</i>	<p>Data were provided by EPA based on a search of the U.S. EPA Air Quality System (AQS) Database http://www.epa.gov/air/data/aqsdb.html This database is accessible by the public upon request.</p> <p>Border Air Quality Database. http://www.epa.gov/ttn/catc/cica/airq_e.html</p>	
<i>References (additional information)</i>	Air Policy Forum http://www.epa.gov/border2012/org.htm#forums	
<i>Limitations of the indicator</i>	The indicator does not indicate actual air pollutant concentrations nor the degree to which the standard was exceeded.	