

**STATE ENVIRONMENTAL HEALTH INDICATORS COLLABORATIVE (SEHIC)
AIR QUALITY INDICATORS**

Indicator: AQ1: Ambient Concentrations of Pollutants

Measure(s): AQ1.1: Annual Average of PM₁₀ 24-Hour Averages, by County

AQ1.2: Annual Average of PM_{2.5} 24-Hour Averages, by County

MEASURE DESCRIPTIONS

AQ1.1: Annual Average of PM₁₀ 24-hour Averages, by County	
Last updated:	February 8, 2008
Measurement units:	Micrograms per cubic meter (ug/m3)
Geographic scale:	Counties with monitors (for counties with more than one monitor, the average reported is for the monitor with the highest mean for the year)
Time scale:	Annual, 2000 through most recent year
Significance/background:	According to the California Air Resources Board, premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and second-hand smoke. PM ₁₀ is considered the respirable fraction of PM, and the main sources are incomplete combustion (e.g. field burning and fireplaces), and road/windblown dust, and construction.
Rationale:	This measure will provide an indication of the long term trend in overall respirable particulate matter burden, relevant to long term effects of PM ₁₀ .
Limitations:	This measure provides a general indication of the overall trend in annual PM ₁₀ concentrations. It may be affected by density and placement of monitors, and coverage will vary. It does not directly reflect exposure. Certain geographic areas, such as those near construction sites, are likely to have higher values.
Data resources:	EPA data: http://www.epa.gov/air/data/geosel.html
Data limitations:	Air monitoring data provides information regarding concentrations at the specific location of each monitor. Considerable within County variation in concentrations will likely exist but will not be captured in this measure.
Related data:	
Related SEHIC measures:	Asthma and other respiratory diseases
Related indicators (from other projects):	HP2010: 8-1 Proportion of persons exposed to air that does not meet the US EPA's health-based standards for harmful pollutants.
Recommendations:	

AQ1.2: Annual Average of PM_{2.5} 24-hour Averages, by County	
Last updated:	February 8, 2008
Measurement units:	Micrograms per cubic meter (ug/m3)
Geographic scale:	Counties with monitors (for counties with more than one monitor, the average reported is for the monitor with the highest mean for the year)
Time scale:	Annual, 2000 through most recent year
Significance/background:	According to work conducted by Pope et al. (2002), daily exposure to fine particulate matter is related to a variety of adverse health conditions. Each 10 ug/m3 elevation in PM2.5 is related to an 8% increase in lung cancer mortality, a 6% increase in cardiopulmonary mortality, and a 4% increase in death from general causes.
Rationale:	This measure will provide an indication of the long term trend in overall fine particulate matter burden, relevant to long term effects of PM2.5.
Limitations:	This measure provides a general indication of the overall trend in annual PM2.5 concentrations. It may be affected by density and placement of monitors, and coverage will vary. It does not directly reflect exposure. Certain geographic areas, such as those near busy roads, are likely to have higher values.
Data resources:	EPA data: http://www.epa.gov/air/data/geosel.html
Data limitations:	Air monitoring data provides information regarding concentrations at the specific location of each monitor. Considerable within County variation in concentrations will likely exist but will not be captured in this measure.
Related data:	
Related SEHIC measures:	Asthma and other respiratory diseases
Related indicators (from other projects):	HP2010: 8-1 Proportion of persons exposed to air that does not meet the US EPA's health-based standards for harmful pollutants.
Recommendations:	

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AQ1.2: Annual Average of PM_{2.5} 24-Hour Averages, by County

HOW-TO GUIDE: AQ1.1 and AQ1.2

Obtain Data from the EPA Website:

1. Go to the EPA Air Data web site: <http://www.epa.gov/air/data/geosel.html>
2. At the top of the map, select **State** for the **Select By** options and click your state on the map (or from the menu at the right of the map) and click **Go** at the bottom right corner of the map.
3. You should be on the **Select Report/Map** page. Click on **County Air Quality** under the **Monitoring** column, **Reports** section of the **Criteria Air Pollutants** heading.
4. You should be on the **County Air Quality Report-Criteria Air Pollutants** page.
 - a. Under **Year of Data**, select the year of interest.
 - b. Under Optional Report Columns, select only County Name (State Abbreviation and EPA Region Number are not needed.)
 - c. Under **Exceptional Data**, check the box to include data associated with exceptional events.
 - d. Click on **Generate Report**.
5. On the report page, scroll down on the page and click on the **All Pages** button under the table to show all data.
6. Copy the entire table contents:
 - a. Click in the upper left corner of the table, hold down and drag to the bottom right corner to highlight all of the table cells.
 - b. On the drop down menu bar at the top of the page, click on **Edit** and **Copy** (or Control+C).

Create a SEHIC report in Excel:

7. Paste the table into a new Excel file:
 - a. Open a new workbook in Excel, click in cell A1, and paste the contents in the worksheet (Control+V, or go to **Edit** and then **Paste** on the menu at the top of the screen.)
 - b. Save the file as [state abbreviation]Data_AQ1.1 and 1.2. For example GAData_AQ1.1 and 1.2.
8. Copy and paste the data into the SEHIC Indicator Report Template:
 - a. Open the Excel file **SEHIC Indicator Report Template.xls**. Go to the worksheet named **AQ1.1 & 1.2**. For each column, copy the relevant data from your Excel file and paste to the corresponding column in the **AQ1.1 & 1.2** worksheet.