

Executive Summary of PM_{2.5} Proposed Measures Document from CAPCOG CAC

1. Particles with diameters of 2.5 micrometers or smaller (PM_{2.5}, or “fine PM”) are small enough to penetrate and harm numerous body systems. EPA’s review of PM health studies indicate “causal” or “likely causal” relationships between short-term and/or long term exposure to PM_{2.5} and the following health effects:
 - Premature death;
 - Lung cancer;
 - Cardiovascular effects;
 - Nervous system effects; and
 - Respiratory effects.

(EPA. *Integrated Science Assessment for Particulate Matter*. December 2019. EPA/600/R-19/188, http://ofmpub.epa.gov/eims/eimscomm.getfile?p_download_id=539935)

2. EPA’s review also indicated that there is no evidence of a threshold below which further reductions to PM_{2.5} exposure would not continue to decrease risks. This means that there are public health benefits of reducing both long-term and short-term exposure to PM_{2.5} even if an area is attaining the PM_{2.5} NAAQS.

NAAQS = **National Ambient Air Quality Standards**

3. Sources of PM_{2.5} include:
 - Crustal PM_{2.5} – particles from dust/soil;
 - Elemental carbon (EC) PM_{2.5} – particles that contain the elemental form of carbon (i.e., graphite);
 - Organic carbon (OC) PM_{2.5} – particles that contain organic molecules (hydrocarbons);
 - Sulfate PM_{2.5} – particles that contain SO₄ molecules;
 - Nitrate PM_{2.5} – particles that contain NO₃ molecules; and
 - Ammonium PM_{2.5} – particles that contain NH₄ molecules.

What are the Largest Sources of PM_{2.5} Emissions?

The largest sources of PM_{2.5} and organic carbon PM_{2.5} within the Austin-Round Rock-Georgetown MSA are listed below:

Table 3 – Largest sources of PM_{2.5} Emissions in the region, 2017

Source Category	Tons per year PM _{2.5}	% of Total PM _{2.5} Emissions	Tons per year OC PM _{2.5}	% of Total OC PM _{2.5} Emissions
Road Dust	2,325	22%	153	6%
Construction Dust	1,693	16%	78	3%
Open Burning	1,574	15%	611	26%
Prescribed Fires	861	8%	403	17%
Agricultural Dust	793	8%	24	1%
Commercial Cooking	417	4%	279	12%
Mining and Quarrying	326	3%	0	0%
Subtotal	7,989	76%	1,548	65%

4. Our current NAAQS values are under the maximum allowed by EPA. However, they may lower that standard level putting us at risk of non-attainment.

Therefore, planning now for the future, protecting our citizens and economic development, to keep Williamson County in attainment status.