Wildfires in California recently sent plumes of smoke down the San Joaquin Valley, creating unhealthy levels of particulate matter (PM) that affected the outdoor activities of virtually all residents.

Both man-made and natural events can cause high levels of air pollution that may be harmful to human health. At such times, including the wildfire episode, the Air District alerts the public to use caution. Such alerts should always be taken seriously.

Throughout the year, the Valley experiences varying levels of PM10 (particulate matter measuring 10 microns and smaller) and PM2.5 (2.5 microns and smaller). Particulate matter in the form of dust is a major pollutant in the fall. In the winter, smoke from residential wood-burning can raise PM levels in the air to the unhealthy range.

The dry conditions of summer are also a breeding ground for wildfires, which often produce dangerous levels of PM.

On Sept. 5, fires in Plumas and Santa Clara counties caused plumes of smoke that traveled into the Valley. The Air District released a cautionary statement to all media in the Valley that day, warning residents to stay indoors in areas where smoke was present.

The following day, Air District meteorologists updated their original air quality forecast from moderate in the Northern and Central regions to “Unhealthy” and “Unhealthy for sensitive groups.” District officials also held a press conference, alerting the media and the public about the dangerous levels of smoke and advising schools to keep children indoors.

Smoky conditions worsened in the central and southern regions of the Valley on Friday, Sept. 7. This prompted the Air District to release another emergency statement to the media and schools. The statement was accompanied by a formal letter from the Air Pollution Control Officer urging all schools to postpone all outdoor activities, including sporting events, in order to protect children and athletes from harmful levels of smoke.

Smoke consists of a complex mixture of gases and fine particles produced when wood and other organic matter burn.

The biggest health threat from smoke comes from fine particles (PM2.5). These microscopic particles can get into the eyes and respiratory system, causing health problems such as burning eyes, runny nose, and illnesses such as bronchitis.

PM2.5 can also aggravate chronic heart and lung diseases, and is linked to premature deaths in people with these conditions.

For more information on particulate matter pollution, visit the District’s website at: www.valleyair.org.