

Using the Real-Time Air Advisory Network with the Air Quality Flag Program

The Air Quality Flag Program and the Real-Time Air Advisory Network (RAAN) share a common goal—to protect public health by providing timely and accurate information about local air quality. However, because they achieve this goal in different ways, it is important to understand how each program differs from the other.

How the Flag Program works: The Flag Program is much like a daily weather forecast that lets us know how much rain, snow, or heat we can expect for the entire day. Each day Valley Air District forecasters analyze the latest meteorological data in order to predict how much air pollution we can expect for the following day for each county in the Valley. During the summer, poor air quality is usually caused by ozone. For winter, fine particles or PM 2.5—very small particles containing many chemicals—are the primary threat to health.

This predicted daily level of pollution falls into one of five color-coded concentration ranges established by the US EPA, known as the Air Quality Index (AQI). In other words, the AQI uses colors to provide the public with a simple way to anticipate the health risk of air pollution on any given day. Each county's daily AQI prediction then determines the flag colors flown, indicated by one of the following colors:

Good daily air quality = Green;
Moderate daily air quality = Yellow;
Unhealthy daily air quality for sensitive individuals = Orange;
Unhealthy daily air quality for everyone = Red;
Very unhealthy daily air quality = Purple.

So like the weather forecast, a school's flag color represents “yesterday's prediction for today's air quality.” Similar to a weather forecast, the AQI (flag) forecast is inaccurate about 20 to 25% of the time, meaning that air quality in your local area might be better, or worse, than the forecasted AQI.

How RAAN works: Unlike the daily AQI, RAAN does not forecast air pollution. Instead RAAN gives users 24/7 access to local air pollution levels via a Valley-wide network of ozone and PM 2.5 monitors. Each hour, these monitors calculate the local ozone or PM 2.5 concentration level and send that hourly average to the District website about 18 minutes after the hour in question. Similar to the five colors used in the daily AQI, this hourly concentration falls into one of five real-time outdoor activity risk (ROAR) levels, ranging from 1 to 5 (good to very bad). In other words, RAAN lets you know “how hard it's raining” in your local area at any given time, and automatically lets you know via email or text when it is potentially unsafe to exercise outdoors.

The health risk of outdoor exercise varies significantly depending on (1) the level of pollution (ROAR level), (2) the duration and intensity of exercise, and (3) the relative sensitivity of each individual to ozone or PM 2.5. RAAN includes outdoor activity guidelines developed by health experts that incorporate these three elements.

How to use RAAN with the Flag Program: A daily AQI (flag) forecast of Orange or Red is an early warning that exercising outdoors today might be unhealthy and should be avoided, especially for sensitive individuals. Then, by accessing RAAN, individuals can see how air quality in the past hour compares with the daily AQI forecast. At ROAR levels 1 and 2, almost everyone can safely exercise outdoors. At level 3, sensitive individuals should limit outdoor exercise. At level 4, everyone should limit outdoor exercise. And at level 5, everyone should not exercise outdoors. When technical problems lead to interruptions in RAAN data, the Valley Air District is advising school officials to base their outdoor activity decisions on the county AQI forecast when RAAN data is unavailable.

For more information on the Air Quality Flag Program, RAAN, or to check current air quality in your area, visit www.valleyair.org.