Benicia Community Air Monitoring Site Selection

Frequently Asked Questions

Why is the Air District installing an air monitoring station in Benicia?

The Bay Area Air Quality Management District (Air District) operates a network of air monitoring stations to accurately track levels of air pollution as part of ongoing efforts to protect public health and the environment. While the District's air monitoring network generates valuable information about typical urban air pollution levels, it may not detect localized differences in concentrations in communities like Benicia that experience combined air pollution from petroleum refineries and other nearby sources. To provide more information about the air quality experienced by communities near refineries, the Air District is collecting fees to install, operate, and maintain long-term air monitoring stations in these areas. These air monitoring stations will provide additional near real-time air quality data for a variety of refinery-related pollutants.

Air or emissions monitoring efforts already underway or being planned in Benicia include:

- fenceline monitoring, ground-level monitoring, source testing, and emission monitoring performed by Valero at its refinery with oversight by the Air District;
- the Good Neighbor Steering Committee's Benicia Community Air Monitoring Program (BCAMP) station near the port; and
- the City of Benicia Fire Department's incident response monitoring program.

The data from the Air District's new community air monitoring site in Benicia will complement the data collected through these other monitoring efforts.

How did the Air District choose candidate locations for the Benicia community air monitoring station?

Selection of a suitable location for a long-term air monitoring station involves balancing many different factors:

1. **The distance to sources of air pollution from the refinery and other facilities** is important because the levels of pollution in the air depend on the amount and types of emissions from nearby sources as well as on meteorology and chemical reactions in the air.
2. **Typical and episodic meteorological conditions** help inform which areas are often downwind of specific emission sources. While typical meteorology is a key factor, days when the winds are calm or variable can also lead to pollutants dispersed throughout the area adjacent to a source.
3. **Input from the community and other environmental justice considerations** such as the distance to people who are more vulnerable to the health effects of air pollution.
4. **The area around the site needs to be appropriate for air monitoring,** avoiding topographic features, tall buildings, trees, or other obstructions that could affect the flow of air between emission sources and the monitors.
5. **Site logistics** including a secure location, uninterrupted access to power and telecommunications, and safe access for station operators are key to the success of long-term continuous operation.
6. **Long-term availability** of the site is important so that the monitoring location can remain in the same place for long periods of time (years to decades).

To identify possible areas for additional air monitoring in Benicia, the Air District reviewed available air quality and meteorological monitoring data, emissions estimates from nearby sources, air quality modeling data, and input gathered at community meetings. With this information, the Air District worked with the City of Benicia to identify the following candidate locations that meet the criteria above: Duncan Graham Park, the Benicia Public Library and the Benicia Fire Museum.

At this virtual meeting, community members and stakeholders will have the opportunity to inform final site selection. Once the site for the community air monitoring station has been selected, the Air District will begin installation of the monitoring station.

What will the community air monitoring station measure and where will we be able to access the data?

A combination of complex instruments will be used to continuously monitor the ambient air for pollutants that are typically emitted by the refinery and other nearby sources. The Air District is still determining which air pollutants and meteorological conditions will be measured at the Benicia community air monitoring station, but the measured pollutants may include the following:

Particles

Fine particulate matter ($PM_{2.5}$)
Black carbon

Gases

Sulfur dioxide
Nitrogen oxides
Hydrogen sulfide
Total volatile organic compounds (VOCs)
Specific individual VOCs, such as benzene and toluene

The Air District is committed to working with the community and other interested stakeholders to improve access to the air monitoring data we collect. Preliminary data will be available on the Air District's website in near real-time and the final data will be available after it has gone through our quality assurance process.

What do Air District air monitoring stations look like?

The Air District's air monitoring stations use complex instruments that continuously monitor ambient air for specific pollutants. Because the instruments are very sensitive, the inside of the station must be kept within a specific temperature range, and the equipment is maintained in a self-contained shelter or indoor space with direct roof access. Certain types of monitors are placed directly on the roof of the shelter while a sampling line brings air from above the station into the instruments located indoors. Many air monitoring stations also include a meteorological tower with sensors that measure wind speed, wind direction and other meteorological parameters. While many of our monitoring stations are installed in mobile trailers, they are typically intended to collect long term data and remain at a fixed location once a site is chosen.

Active District Air Monitoring Station

Instrument Rack in Typical Air Monitoring Station