

Quarterly Update on AB 617 Richmond-San Pablo Air Monitoring Projects

Greetings from the Richmond-San Pablo Monitoring Outreach Team! This is an update on the air monitoring projects that were selected by the AB 617 Richmond-San Pablo Community Air Monitoring Plan Steering Committee (Monitoring Plan SC) and described in the [Community Air Monitoring Plan](#). Updates include current status of air monitoring projects and links to available data, analyses, and resources. The Monitoring Outreach Team is made up of five members from the Monitoring Plan SC: Dr. Henry Clark, Oscar Garcia, Matt Holmes, Dr. Julia Walsh, and Linda Whitmore. This team meets monthly with Air District staff.

Aclima

Maps showing data captured during the 3-month mobile monitoring campaign in August through October, 2019, as described in the Air Monitoring Plan and related information can still be found on the [Aclima Insights Richmond-San Pablo webpage](#). Based on feedback received, Aclima is working on a redesigned version of the public data portal that includes data from PSE's network of Aeroqual sensors and other new features. Aclima will include an explanation of how to use the newly added portal features and are happy to host a remote training if desired.

Driving for the annual baseline in Contra Costa County (not part of the Monitoring Plan) was completed on October 31, 2020. Note that it may take a few months as Aclima works on data review and validation before it will be released in the new version of the public portal.

Groundwork Richmond

Groundwork Richmond now has 52 Clarity Node-S sensors deployed across the Richmond-San Pablo area, measuring PM_{2.5} and NO₂.

Data and information links:

- Real-time Clarity sensor data on the Clarity Open Map: <https://openmap.clarity.io/>
- Clarity sensor data and Shair model data can be viewed on the [Ramboll Shair website](#).
- An analysis of colocation data using Clarity sensors: [Clarity colocation analysis](#)
- Map of Clarity sensors and preliminary figures and analysis: [Slideshow with Map and Figures](#)

Project next steps:

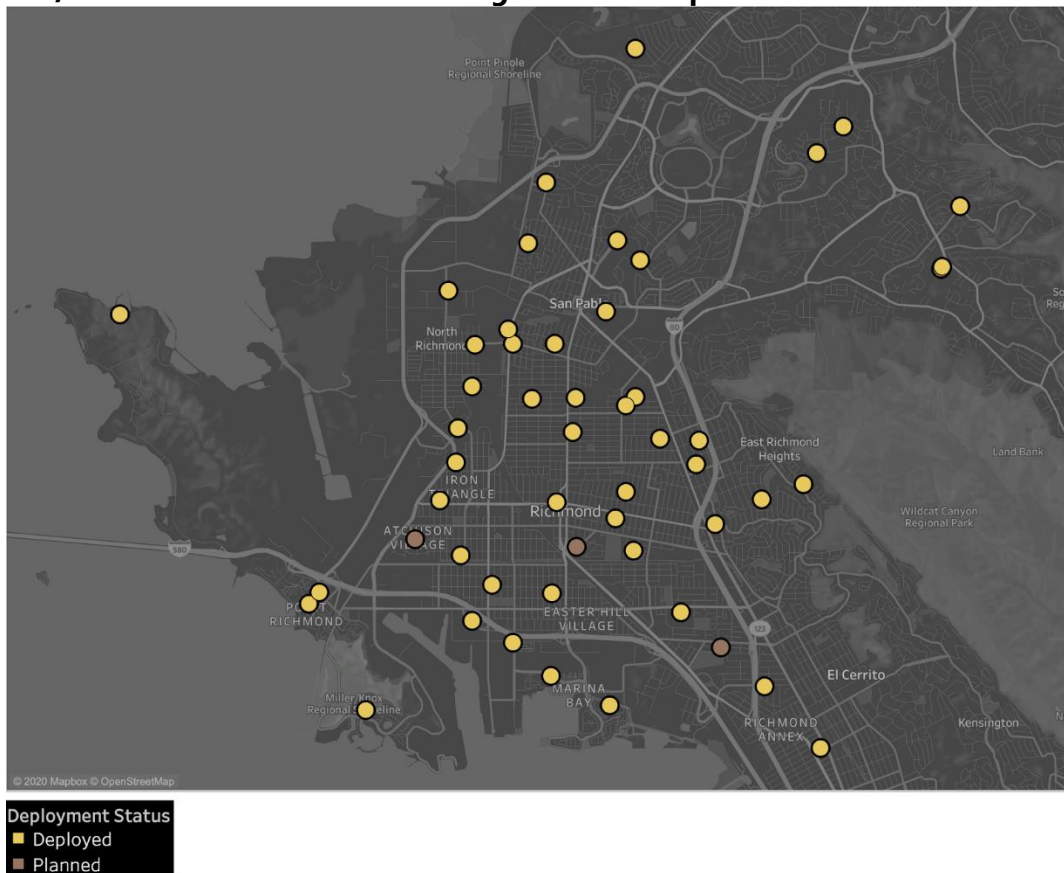
- Complete metals sampling campaign and analyze data compared to other metals sampling results from the Air District
- Compile an analysis of the Shair model source apportionment estimates and perform an analysis of the model performance and model bias compared to the monitoring data
- Deploy Aethlabs black carbon monitors

- Work with an intern to perform data analysis on black carbon data to investigate/distinguish between traffic contribution and contribution from biomass combustion

PSE Healthy Energy

PSE/APEN currently have 50 stationary Aeroqual AQY air monitors deployed in Richmond-San Pablo. The air monitors are collecting real-time data in one-minute intervals measuring PM_{2.5}, NO₂, ozone (O₃), temperature, relative humidity, and dew point. In addition to the 50 monitors equipped with the above sensors, we are also preparing three prototype monitors equipped with volatile organic compound (VOC), carbon monoxide (CO) and PM_{2.5} sensors. Below is a map of current air monitoring locations.

PSE/APEN Richmond Air Monitoring Network Map



Real-time preliminary data and historical data (up to 90 days) from each monitoring site can be viewed [here](#). Data that has undergone quality assurance protocols will be available for download through the California Air Resources Board’s [AQView](#) data portal, which is currently under construction.

December 2020



Below is a time-lapse video of average daily PM_{2.5} values measured by the Richmond Air Monitoring Network for the months of August and September. Many days significantly exceeded the National Ambient Air Quality Standard of 35 µg/m³ due to the wildfire events.

[PSE Richmond PM timelapse 2020-08 2020-09 150.mp4](#)

In addition to ongoing real-time air quality data collection and data visualization efforts, we are currently expanding our air monitoring in the Richmond-San Pablo area by adding Aerosol Black Carbon Detectors (ABCDs) to the existing network during three monitoring campaigns, including one winter month, one summer month, and one deployment during a wildfire smoke event, in collaboration with researchers at Lawrence Berkeley National Laboratory. Our first wildfire deployment was in August 2020, when we installed 24 ABCD black carbon sensors collocated with 24 of our current monitoring sites for a period of three weeks, which coincided with a major regional wildfire smoke event.

Our data collection efforts will continue throughout 2021. Periodic updates and relevant information will be published on a regular basis as we continue to collect and analyze new data.

Air District

The Air District is gathering and preparing existing air monitoring datasets covering Richmond-San Pablo, such as from Air District fixed-site monitoring, Chevron community monitoring stations, Aclima's quarterly mobile monitoring, and sensor network data, for initial data analysis work. These initial analyses are to provide an overview of air quality in Richmond-San Pablo and identify persistent or unexpected areas of higher pollution levels, focusing on PM_{2.5} and air toxics. Findings from these analyses will be shared in subsequent quarterly updates.

While shelter-in-place orders have delayed our use of the air monitoring van for the air toxics monitoring project, the Air District is making additional preparations to ensure that when it is safe to operate the van, air sampling will be conducted smoothly, driving routes will be more representative, and data will be more reliable and easier to analyze. The air toxics monitoring project is described in Appendix G of the [Community Air Monitoring Plan](#). The Air District is also collaborating with RYSE Youth Center to develop artwork decals for the air monitoring van.

Finally, attached to the email are two resource documents prepared by the Air District:

- [Richmond-San Pablo air monitoring data inventory](#): This document lists the different air monitoring datasets and provides a brief description, the kinds of pollutants measured, and links to available data and information. This inventory is preliminary and will be expanded as new information and datasets become available.
- [Guide to air quality data websites](#): This resource guide describes websites that make air monitoring data available, including the kinds of data provided, and context for using different data sources together to better understand air quality conditions.

The Air District's [Wildfire Safety Website](#) also has links to guides on [Air District Air Quality Data FAQs](#) and [Air Quality Data Sources](#).