

Great Basin Unified Air Pollution Control District

AB 617 Grant Report Community Air Protection Program

Final Grant Report for G20-CAPP-11

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1.0 District's AB617 Annual Report

Great Basin Unified Air Pollution Control District's (District) goal for the AB617 Community Air Protection Program is to conduct community-level air quality monitoring, focused on communities where little or no air quality monitoring has been conducted in the past. The District has an overall low population density (2 persons/square mile) with historical monitoring efforts focused on the larger towns and the District's PM10 nonattainment areas. Many smaller rural communities have not had air quality monitoring. Additionally, the program has allowed for monitoring in towns that already have monitoring, with sensors placed in neighborhoods that may experience different impacts from pollutants such as woodstove smoke, dust, or wildfire smoke. The AB617 program grant award has provided resources to expand monitoring. The steps taken during this period while implementing the program are described in detail below.

2.0 Background

In 2018, the District outlined a community monitoring program. The first step in the process of designing the monitoring portion of the community air protection program involved the identification of communities by District staff in which monitoring would be conducted. The next step was the development of a set of criteria that would be used to determine when monitoring would be conducted in a given community. The District developed a ranking system, based on the criteria, to aid in the decision-making process for monitor deployment. The criteria developed by the District to aid in ranking the communities for monitor deployment are as follows:

- a) What communities have had little or no monitoring in the surrounding area?
- b) What communities have experienced the highest particulate matter (PM) impacts either from windblown dust and/or from wildfires?
- c) What communities have expressed concerns about those impacts?
- d) What communities have a public space, e.g., school, day-care center, fire station, where a PM monitor could be installed?
- e) What communities/public spaces have consistent line power and internet service for the PM monitor?
- f) What communities/public spaces are receptive to such an installation?

Since 2018, the District deployed low cost sensors, Purple Air PA-II PM sensors, in 43 locations, although some sites have been decommissioned. Some of these sites include existing District PM monitoring stations to use as quality control check sensors for the community monitoring network.

3.0 Summary of Work Completed and Work in Progress

From May 2021 to April 2023 the following tasks associated with the Community Monitoring program were completed or work was started.

- **Communication and Public Outreach**

District staff continued to maintain a webpage specific to the Community Air Protection Program and the District's use of low-cost sensors. The page provides an explanation of the purpose and limitations of low-cost sensors. Additionally, it has a link to all sensor data within the District boundaries. The sensor data are used in conjunction with permanent and portable District monitors and other resources for health advisories and in providing real time data to the public. District staff continues to work on a routine basis to ensure this webpage is up to date and that all of the District's sensors are active and reporting data.
- **Sensor Maintenance**

Several sensors required replacement or maintenance. Issues have ranged from complete failure, to divergence of sensor channels to connection and reporting issues. District staff was responsive to identifying and resolving all issues to ensure the community monitors were active. District staff time included frequent data checks to ensure monitors were operational.
- **Additional Monitoring Locations**

During the reporting period from since March 2022, District staff installed sensors in the following new locations:

 - New location in downtown Bishop, CA June 2, 2022
 - New location in West Bishop January 26, 2023
- **Research into PM10 Low-Cost Sensor**

District staff continues to work to find a low cost sensor that will characterize PM10 well. The purple air sensors, which the District has widely deployed, do not capture dust and PM10 impacts. The District has identified a possible sensor for PM10, QuantAQ Modulair-PM. Collocation tests at PM10 monitoring stations have compared favorably. Several units have been deployed in the field. None have been deployed at community locations, but this tool may be utilized in the future depending on how the initial field units perform.
- **Deployable Low-Cost Sensor Unit**

Work continues to improve, maintain and deploy a self sufficient low cost sensor unit designed with it's own power and communication system. This system can be used in areas that traditional purple airs or EBAM units cannot be deployed due to lack of line power or wifi. The unit will allow us to expand our monitoring capabilities to include additional areas to help inform the public of air quality impacts.

4.0 Program Costs

No disbursement request is being submitted along with this report.

A Summary of expenditures to date are provided below. The grant amount is \$10,813.00. Total expenditures to date are \$13,444.05, including \$13,158.28 in staff time and \$285.77 in expenses. The final report will be accompanied by a disbursement request for the total grant amount.

Staff Hours

Dates	Staff Hours	Hourly Rate	Total
Apr 1, 2022 - June 30, 2022	11	76.17	\$837.87
July 1, 2022 – December 31, 2022	56.75	83.67	\$4,748.27
January 1, 2023- April 15, 2023	90.5	83.67	\$7,572.14
Total			\$ 13,158.28

Expenses

Date	Amount	Item
3/25/2022	45.63	Down Voltage Regulator
4/17/2022	40.01	Verizon- Purple Air telemetry line- data communication
5/25/2022	40.01	Verizon- Purple Air telemetry line- data communication
6/25/2022	40.01	Verizon- Purple Air telemetry line- data communication
7/25/2022	40.07	Verizon- Purple Air telemetry line- data communication
8/25/2022	40.01	Verizon- Purple Air telemetry line- data communication
9/25/2022	40.03	Verizon- Purple Air telemetry line- data communication
Total	\$ 285.77	