ENVIRONMENTAL PROTECTION AGENCY (EPA Region 9)

California Air Resource Board

Project Title: **Purple Air PM Sensor Correction Factor for the City of Mexicali**

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Funding Amount: **FY 20: $10,000**

Completion Date: **September 30, 2021**

Project Description:

The California Air Resources Board and the City of Mexicali partnered on a project beginning in December of 2018 to increase the number of low-cost sensors in the Mexicali area. To date, the City of Mexicali has installed 50 Purple Air sensors and has used this data for education and awareness, as well as to build a school flag program in Mexicali. These efforts have led to increased education and awareness provided to the public about air quality in their region and the precautions they should take to protect themselves when air quality levels are unhealthy. A correction factor is needed to improve the data quality being reported by the sensor network.

Mexico has passed a regulation that all networks including sensor networks must issue an AQI to the community. The City of Mexicali, in cooperation with Baja SPA, plans to issue AQI alerts to the local residents using data from their 50 sensor Purple Air Network. CARB has agreed to assist the City of Mexicali develop a correction factor for their sensor network by colocating several Purple Air sensors next to a continuous regulatory PM monitor. Data will be collected for up to a year in order to capture the different seasons. The data will be used to develop a correction factor for the network. Funding is for purchase of 10 Purple Air sensors at a cost of approximately $2,200, colocation of multiple sensors and staff time to process data over a period of approximately 1 year.

Program Priorities:

The proposed project focuses on the following priorities:

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1. **Purchase and deploy multiple Purple Air sensors colocated with a continuous regulatory PM monitor in Mexicali:** CARB will purchase about 10 Purple Air sensors at an approximate cost of $2,200. The City of Mexicali and CARB staff will deploy multiple sensors around a regulatory sensor once the CARB Mexicali PM2.5 Study begins in late 2020.

2. **Collect and review the data from the sensors and the regulatory monitor:** CARB staff will perform Quality assurance of the data, using a project QAPP, and only data meeting criteria will form the final data set.

3. **Analyze the data and develop a correction factor:** CARB staff will analyze the data and develop a correction factor, possibly multiple factors, in conjunction with the City of Mexicali

4. **Apply the correction factor**: CARB and the city of Mexicali will work out how to apply the correction factor to the Redspira web page and to their community AQI reporting web page.

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