

Development of Shafter Community Air Monitoring Plan

February 11, 2019

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Community Air Monitoring

- AB 617 includes requirements for air districts to deploy air monitoring in communities selected by CARB
 - Air monitoring for first-year communities to be in place by July 1, 2019
 - Supplements existing monitoring in/near selected community
 - May assist in developing community emission reduction programs
- District currently preparing platforms and equipment for community air monitoring in Shafter
- Community access to monitoring information is being planned
- Additional local air monitoring networks will be planned and deployed in future years as subsequent communities are selected by CARB for AB 617 implementation

Preparation of Community Air Monitoring Plan

- District responsible for preparing community air monitoring plan
 - Shafter Community Steering Committee will provide input in preparing plan
- CARB AB 617 Blueprint describes 14 elements that must be included in community air monitoring plans
 - Air monitoring plan elements designed to provide a process that results in action-oriented data to meet the needs of the community
 - Elements include details on quality control criteria, best practices, collaborative partnerships, data accuracy, and public access to collected data

Community Air Monitoring Plan Elements

- CARB AB 617 Blueprint describes the following 14 elements for community air monitoring plans
 1. Community partnerships
 2. Community-specific purpose for air monitoring
 3. Scope of actions
 4. Air monitoring objectives
 5. Roles and responsibilities
 6. Data quality objectives
 7. Monitoring methods and equipment
 8. Monitoring areas
 9. Quality control procedures
 10. Data management
 11. Field measurements
 12. Evaluating effectiveness
 13. Analyze and interpret data
 14. Communicate results

Goals of Community Air Monitoring Plan

- Community air monitoring plan for Shafter should define clear goals and objectives
- Plan should describe monitoring approach that is focused on matching the information need with the appropriate technologies and scientific process
- Developed community air monitoring plan should assist in guiding the air monitoring goals for Shafter
 - Collected data will allow for community-level air quality analysis and evaluation of long term trends
- Collected data may assist with ongoing development and implementation of Shafter community emission reduction program

Air Monitoring in Shafter

- Historical air quality data already exists for Shafter
 - CARB/District jointly operate the Shafter air monitoring site at the DMV building (site began in 1989)
 - Historical data includes ozone, NO/NO₂/NO_x, VOCs, and meteorology (data is available on CARB website)
 - <https://www.arb.ca.gov/aqmis2/aqmis2.php>
 - Department of Pesticide Regulation has monitored ambient pesticide concentrations in Shafter since 2011 (data available on DPR website)
 - https://www.cdpr.ca.gov/docs/emon/airinit/air_network.htm
 - https://www.cdpr.ca.gov/docs/emon/airinit/pesticide_air_monitoring_database.htm
- District has begun monitoring particulate (PM_{2.5}) in Shafter
 - Hourly PM_{2.5} now being collected at Shafter DMV air monitoring site
 - District reviewing initial data to assess operation of analyzer
 - District working to soon make data available online to the public

Accessibility of Community Air Monitoring Data

- Air monitoring data collected in Shafter community will be displayed on CARB Statewide Data Portal
 - Hourly data will be displayed in real-time
 - Validated air monitoring data will also be available on data portal once quality control reviews are complete
 - Samples taken that require laboratory analysis will be displayed at a later date
- Shafter community air monitoring data will also be displayed on District website in real-time

Overview of Monitoring Resources

- District developing various additional resources for community air monitoring in Shafter
- Development of these resources aimed to be scalable, portable, and rapidly deployable
- Instrumentation is regulatory-grade that will produce high-precision data
- Assets being developed include:
 - Mobile air monitoring trailers
 - Mobile air monitoring vans
 - Compact multi-pollutant air monitoring systems
 - Stand-alone PM_{2.5} instruments



Pollutants to be Measured in Community

- AB 617 requires that criteria and toxic pollutants be measured in selected communities
 - Gas pollutants to be measured could include ozone, CO, NO/NO₂/NO_x, SO₂, H₂S, total and speciated VOCs (real-time and/or lab analysis), etc.
 - Particulate matter pollutants to be measured could include PM₁₀, PM_{2.5}, ultrafine PM, black carbon, PM_{2.5} speciation (real-time and/or lab analysis), toxic PM, etc.
- Feedback from Steering Committee will help District plan on which pollutants to measure and where equipment should be placed in the community

Recommendations for Initial Network Design

- Initial air monitoring assets available for Shafter community include:
 - Ongoing monitoring at Shafter DMV site
 - 1 air monitoring trailer
 - 1 air monitoring van
 - 1-2 compact multi-pollutant air monitoring systems (gas/PM)
 - 2-3 stand-alone PM2.5 monitors
 - Potential use of low-cost sensors to provide improved spatial coverage
- Air monitoring resources will be limited – can't measure everything, everywhere, at the same time
- District staff recommend that the air monitoring trailer be placed in a fixed location for the duration of the monitoring campaign
 - Will provide a fixed reference point and allow for analysis of longer term trends
- Other air monitoring assets could be moved more frequently to measure air quality in varying locations in the community – both within and outside of community boundary

Considerations for Community Air Monitoring

- Number of factors must be considered when planning for placement of air monitoring equipment
 - Permission of land-owner to place equipment on property
 - Establishment of lease agreements with property owner
 - Security of the location to protect equipment
 - Access to power for operating equipment
 - Proper monitoring siting with no obstructions
- These factors frequently affect ability to find potential monitoring locations
- These requirements should be kept in mind when making recommendations for monitoring locations

Questions for Steering Committee

- District asking Shafter Community Steering Committee for thoughts and comments in the following areas:
 - What pollutants should be measured in the community?
 - Where should air monitoring assets be placed in the community?
 - How frequently should air monitoring assets be moved around the community?
- What specific information and resources could assist the Steering Committee in providing meaningful input in the design of the Air Monitoring Plan?

Contact Information

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