

Development of South Central Fresno Community Air Monitoring Plan

April 10, 2019

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Director of Strategies and Incentives

San Joaquin Valley Air Pollution Control District

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 South Central Fresno
- 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
 - South Central Fresno 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

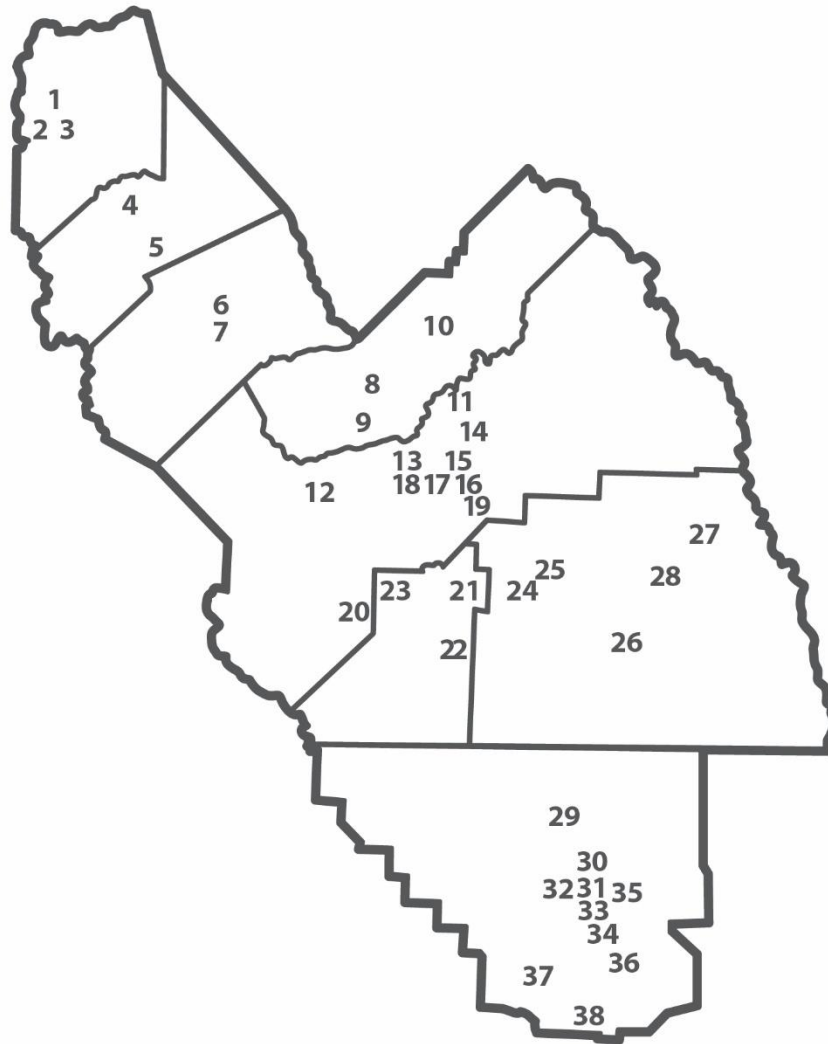
Community Air Monitoring Plan Elements

- 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 South Central Fresno 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 South Central Fresno
 - 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 South Central Fresno community emission reduction program

Air Monitoring Sites in Operation



As of July 2018



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

SAN JOAQUIN COUNTY

- 1 Stockton-Hazelton: G, M, P, F, T
- ★ 2 Tracy-Airport: G, M, P, F
- ★ 3 Manteca: P, F, M

STANISLAUS COUNTY

- 4 Modesto-14th St: G, M, P, F
- ★ 5 Turlock: G, M, P, F

MERCED COUNTY

- ★ 6 Merced-M St: P, F
- ★ 7 Merced-Coffee: G, F, M

MADERA COUNTY

- ★ 8 Madera City: G, P, F, M
- ★ 9 Madera-Pump Yard: G, M

Other¹:

- Chukchansi Indians
- ▲ 10 Picayune Rancheria: G, F, P, M

FRESNO COUNTY

Other¹:

- Monache Tribe/Foothill Yokut Indians
- ▲ 11 Table Mountain AMS⁺: G, F, P, M
- ★ 12 Tranquillity: G, F, M
- ★ 13 Fresno-Sky Park: G, M
- ★ 14 Clovis: G, M, P, F
- 15 Fresno-Garland: G, M, P, F, T, N, L
- ★ 16 Fresno-Pacific: F
- ★ 17 Fresno-Drummond: G, P, M
- ★ 18 Fresno-Foundry Park Ave: G, M
- ★ 19 Parlier: G, M
- ★ 20 Huron: F, M

KINGS COUNTY

- ★ 21 Hanford: G, F, M, P
- ★ 22 Corcoran: F, M, P
- Other¹:**
Tachi Yokut Tribe
- ▲ 23 Santa Rosa Rancheria: G, M, P

TULARE COUNTY

- ★ 24 Visalia Airport: M
- 25 Visalia-Church St: G, F, M, P
- ★ 26 Porterville: G, F, M
- Other²:**
▲ 27 Lower Kaweah: A, G, M
▲ 28 Ash Mountain: A, G, M, F

KERN COUNTY

- 29 Shafter: G, M
- 30 Oildale: G, M, P
- ★ 31 Bakersfield-Golden/M St: F, P
- 32 Bakersfield-Calif Ave: A, G, M, P, F, T
- ★ 33 Bakersfield-Muni: G, M
- 34 Bakersfield-Airport (Planz): F
- 35 Edison: G, M
- 36 Arvin-Di-Giorgio: G, M
- ★ 37 Maricopa: G, M
- ★ 38 Lebec: F, M

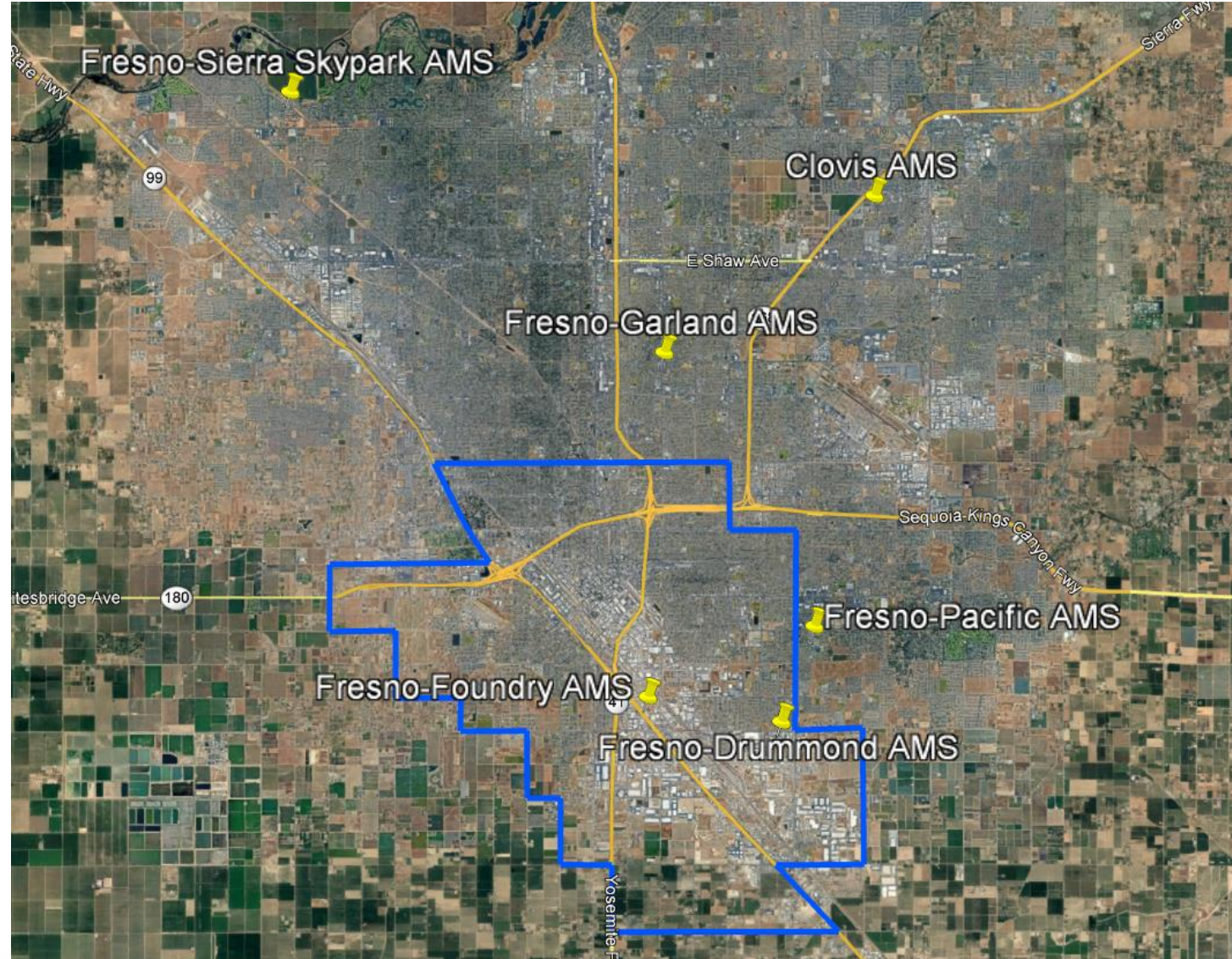
MONITORING OPERATION

- ★ Sites operated by the District
- Sites operated by the District & CARB
- Sites operated by CARB
- ▲ Sites operated by other agencies
- Other¹ Tribal
- Other² National Park Service
- + Air Monitoring Station (AMS)

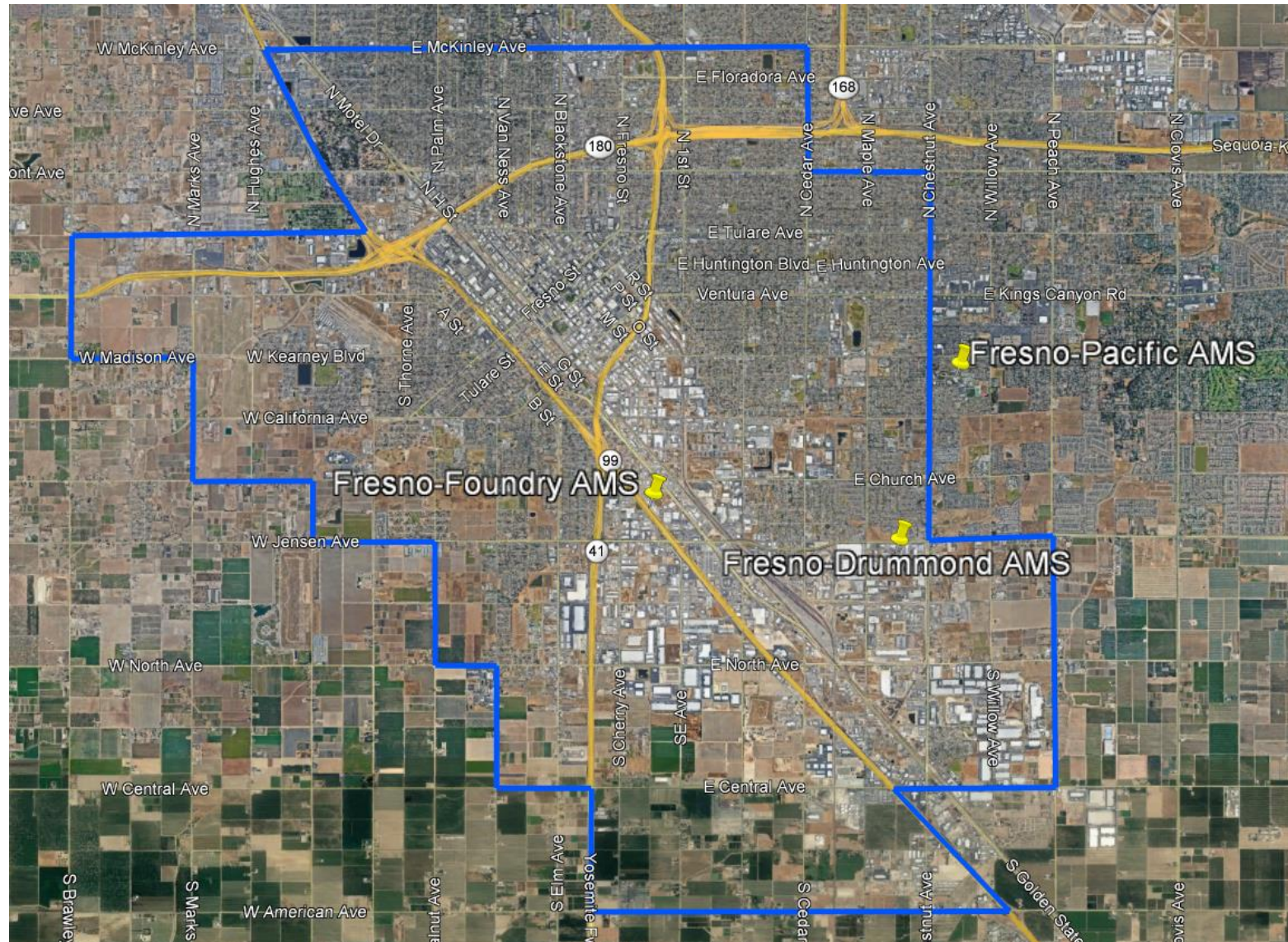
MONITORING DESIGNATIONS

- | | |
|----------------------------|----------------------|
| A Acid Deposition | P Particulate (PM10) |
| F Fine Particulate (PM2.5) | N National Core |
| G Gaseous | T Toxins |
| M Meteorological | L Lead |

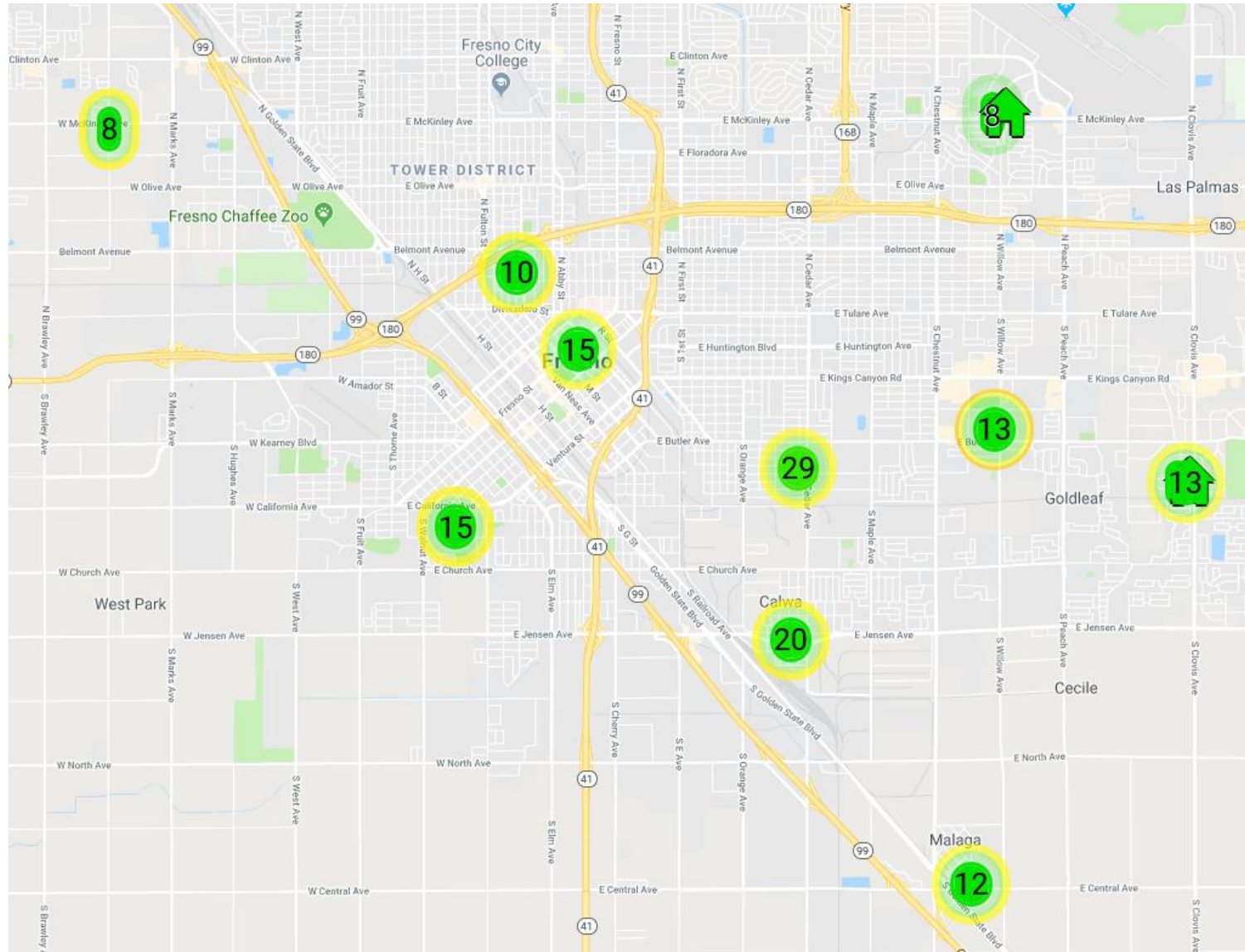
Current Air Monitoring in Fresno Area



Current Air Monitoring in South Central Fresno Area



Low-Cost Sensors in South Central Fresno Area



Air Monitoring in South Central Fresno

- Historical air quality data already exists within boundary of South Central Fresno area
 - Fresno-Drummond site operated by District since 1984 (located near Jensen and Chestnut Avenues) - Ozone, NO/NO₂/NO_x, CO, filter-based PM₁₀, and meteorology
 - Fresno-Foundry near-road site operated by District since 2016 (located near Jensen Avenue and Hwy 99) – NO₂ and meteorology, soon adding PM_{2.5} and CO
- Monitoring site also operating just outside of South Central Fresno community boundary
 - Fresno-Pacific site operated by District since 2000 (located at Fresno Pacific University) – filter-based PM_{2.5}
- Historical data for these sites are available on CARB website
 - <https://www.arb.ca.gov/aqmis2/aqmis2.php>

Air Monitoring in South Central Fresno

- Real-time PM2.5 monitor established at Roosevelt High School
- Data is available on District AB 617 website at:
 - <http://www.valleyair.org/programs/AB617-Charts/SouthCentralFresno.htm>
- PurpleAir sensor also deployed to provide data comparison



Accessibility of Community Air Monitoring Data

- Air monitoring data collected in South Central Fresno 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
- South Central Fresno 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 South Central Fresno
- 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 PM2.5 instruments



Pollutants to be Measured in Community

- AB 617 requires that criteria and toxic pollutants be measured in selected communities as appropriate
 - 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 South Central Fresno community include:
 - Ongoing monitoring at Fresno-Drummond, Fresno-Pacific, Fresno-Foundry sites
 - 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 South Central Fresno Community Steering Committee for thoughts and comments in the following areas:
 - What pollutants/types of sources should be considered in the monitoring plan?
 - Where should air monitoring assets be placed in the community?
 - Where should the trailer be installed for long-term operation?
 - 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

Contact the Valley Air District at:

AB617@valleyair.org

Fresno office (559) 230-6000

Modesto office (209) 557-6400

Bakersfield office (661) 392-5500

Jaime Holt Cell: (559) 309-3336

For information visit:

www.valleyair.org/community

www.valleyair.org

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Use the Valley Air
App for the latest
air quality info.



South Central Fresno Community Emissions Reduction Program (CERP) Outline Review

April 10, 2019

Jessica Coria, Senior Air Quality Specialist
San Joaquin Valley Air Pollution Control District

California Community Air Protection Program

- AB 617 Legislation established community-focused framework
- CARB's Community Air Protection Program implements AB 617
 - Community Grant Funding
 - Expanded Air Monitoring
 - Improved Data Accessibility
 - Partnerships with Communities
 - Statewide strategies to reduce emissions
 - Community Emission Reduction Programs (CERPs)
- Community Emission Reduction Programs:
 - Advised by Community Steering Committee process
 - Lays out plan to reduce pollution in each selected community

Community Emissions Reduction Programs

- Guidance on CERPs included in CARB's Community Air Protection Blueprint: Appendix C
- Elements of a CERP include:
 - Understanding the Community
 - Community partnerships and public engagement
 - What are the Air Pollution Challenges facing the community?
 - What are solutions for these challenges?
 - Implementation schedule
 - Enforcement plan
 - Metrics to track progress over time

Understanding the Community

- Description of community boundaries, public health and socioeconomic factors, types of pollution impacting community
- Technical assessment to understand community pollution impacts
 - List of the key pollutants and emission sources driving community exposure
 - Analysis that assesses share of mobile, stationary, and area-wide source emissions contributing to community exposure
 - Sensitive receptor locations within community (schools, day care, hospitals, etc.)
- Analysis of existing air quality programs in reducing emissions in community (emission reductions, local compliance, etc.)

Community Partnerships and Engagement

- Community Steering Committee Activities and Input
 - Committee makeup and Charter information
 - Meeting details and minutes
 - Website information
- Public Outreach Efforts and Results
 - Community engagement efforts (workshops, Steering Committee meetings, other community engagement)
 - Plan for public engagement moving forward upon adoption of CERP
 - Key takeaways from public input

Identifying Community Air Quality Concerns

- Summary of Community Emission Sources
- Community-Identified Air Quality Priorities
 - Discussion of pollution concerns as indicated by Steering Committee members and the public
 - Pollution sources of priority will be highlighted and potential emission reduction measures will be analyzed for each source category
- Technical analysis of pollution sources impacting community
 - List of the key sources and source categories within and surrounding the community
 - Use tools (emissions inventory, emissions modeling, air monitoring) to better define emissions sources of concern & potential controls

Pollution Reduction Targets

- Health Based Air Quality Objectives
 - e.g. reductions in PM2.5, air toxics
- Emissions reduction targets to be achieved within five years
- District will include numerical goals for mobile, stationary and area-wide sources of criteria air pollutants and toxic air contaminants impacting the community, including:
 - Compliance goals
 - Goals for deploying or implementing available technologies or control techniques
 - Measureable goals for deploying or implementing exposure reduction measures at sensitive receptor locations

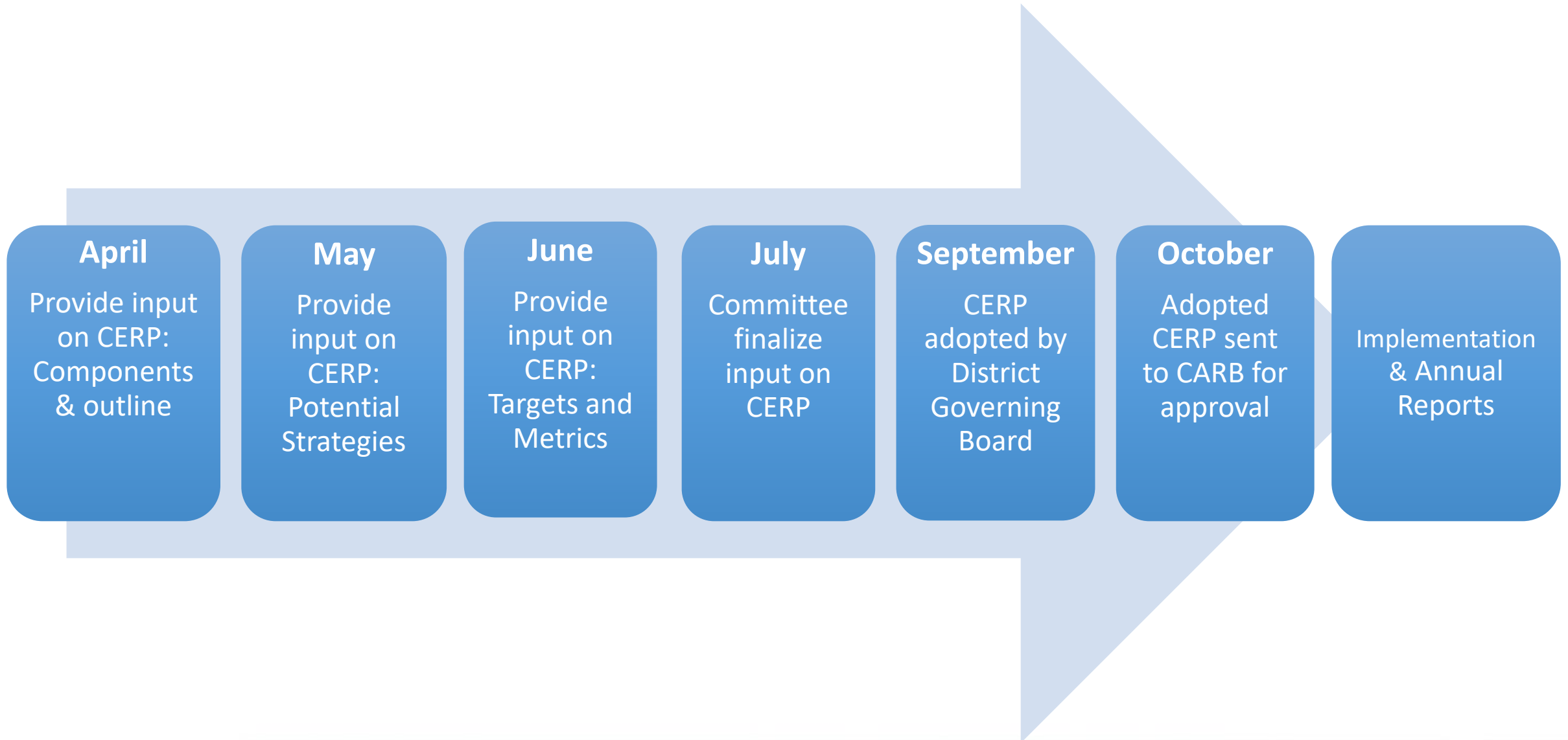
Pollution Reduction Strategies

- Emission Reduction Incentive Funding Strategies
 - Targeted funding to reduce pollution in the community (replace fireplaces, older cars, trucks, tractors, transit and school buses, lawnmowers, nut harvesters, etc.)
 - Additional outreach and education events (Drive Clean in the San Joaquin events, etc.)
- Regulatory Strategies
- Mitigation Strategies
- Other Strategies requiring communication with other agencies (land use, transportation)
- Implementation Schedule
- Enforcement Plan

Metrics to Track Progress

- Specify required annual metrics to track progress
 - Emission reductions achieved and progress towards meeting the individual emissions reduction targets for each pollutant
 - Dollars invested, reductions achieved, number of projects implemented in and/or benefitting the community for incentive strategies
 - Compliance, deployment and implementation goals for sources of identified pollutants
 - Emissions exposure reductions for sensitive receptors
 - Status of rules and regulations adopted or other strategies implemented
 - Additional enforcement activities
- Specify approaches for evaluating air quality and exposure at the five-year milestone

2019 Timeline for CERP Development



Contact Information

AB 617 contacts and information at Valley Air District:

AB617@valleyair.org

Jaime Holt Cell: (559) 309-3336

www.valleyair.org/community

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Questions for Steering Committee

- District asking Community Steering Committee for thoughts and comments in the following areas:
 - ☐ Comments or questions on lay-out and components of CERP
 - ☐ Emission reduction funding programs that you would like to receive more information about, or see increased funding or outreach occurring in the community
 - ☐ What other topics would you like presentations on or opportunities to discuss to support the development of CERP Strategies?
 - ☐ How can the District work to increase awareness of air quality programs and public engagement in the community?