Annual Air Monitoring Network Plan

Environmental Justice Advisory Group

April 25, 2013

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Network Plan Requirements

- Network plan describes the state of the network and changes that are planned (40 Code of Federal Regulations §58.10)

- Public review process prior to submission to EPA

- Monitoring objectives
  - Attainment of Federal Standards/Strategy
  - Research Support
  - Provide Public Timely Information

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District's Air Monitoring Network

- District (in cooperation with CARB) operates an extensive monitoring network (36 air monitoring stations) to support mission to improve & protect public health
  - Valley covers an area of 23,490 sq. miles
  - Valley is home to approx. 4 million residents
  - Several major metropolitan areas, vast expanses of agricultural/rural areas, industrial sources, highways and schools
  - Maximize use of limited financial and personnel resources for air quality monitoring
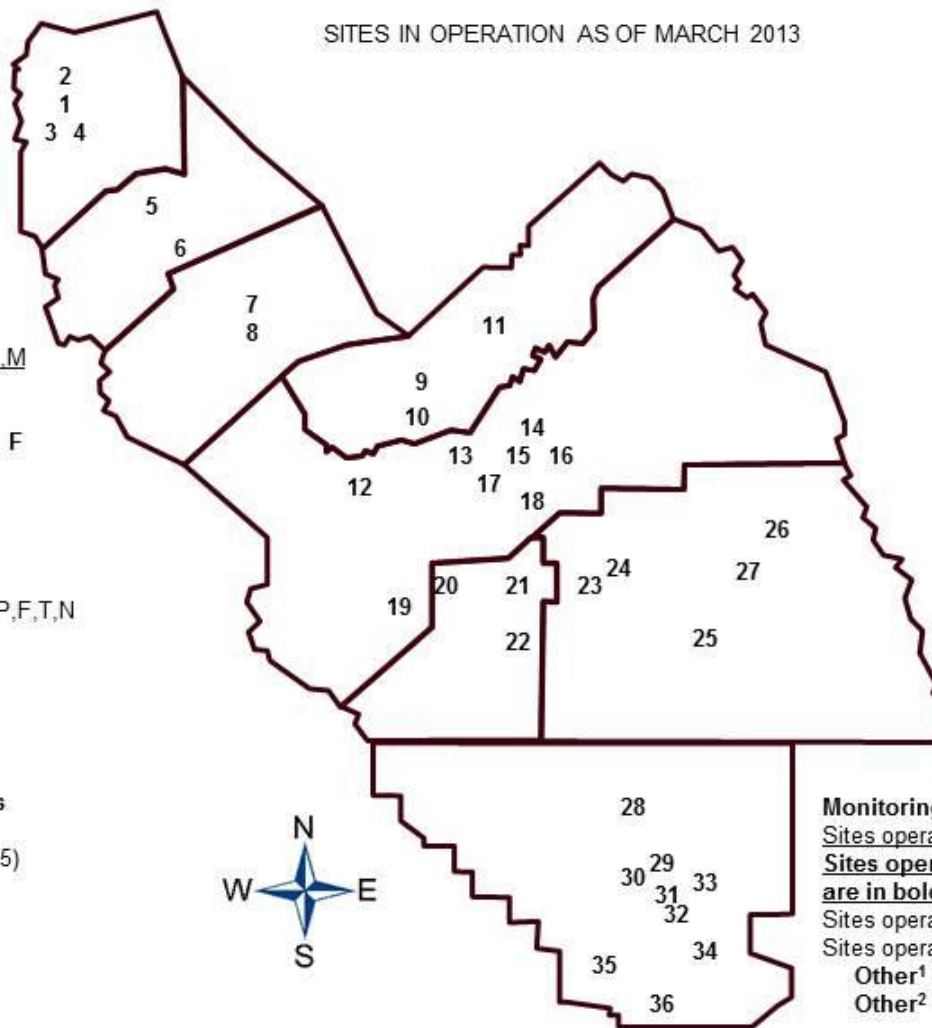
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District's Air Monitoring Network

San Joaquin Co:
1 Hazelton: G,M,P,F,T
2 Wagner/Holt: P
3 Tracy: G,M,P,F
4 Manteca: P,F,M

Stanislaus Co:
5 Modesto: G,M,P,F
6 Turlock: G,M,P,F

Merced Co:
7 M Street: P,F
8 Coffee St: F,G,M

Madera Co:
9 Madera City: G,P,F,M
10 Madera-Pump Yard: G,M
Other[1]:
Chukchansi Indians
11 Picayune Rancheria: F

Fresno Co:
12 Tranquillity: G,F,M
13 Sierra Sky Park: G,M
14 Clovis: G,M,P,F
15 Fresno-Garland: G,M,P,F,T,N
16 Fresno-Pacific: F
17 Drummond: G,P,M
18 Parlier: G,M
19 Huron: F,M

Monitoring Designations
A: Acid Deposition
F: Fine Particulate (PM2.5)
G: Gaseous
M: Meteorological
P: Particulate (PM10)
N: National Core
T: Toxics

San Joaquin Valley AIR POLLUTION CONTROL DISTRICT

SITES IN OPERATION AS OF MARCH 2013

Kings Co:
21 Hanford: F,G,P,M
22 Corcoran: G,M,P,F
Other[1]:
Tachi Yokut Tribe
20 **Santa Rosa Rancheria: G,M,P**

Tulare Co:
23 Visalia Airport: M
24 Church Street: G,M,P,F
25 Porterville: G,F,M
Other[2]:
26 **Kaweah: A,G,M**
27 **Ash Mountain: A,G,M,F**

Kern Co:
28 Shafter: G,M
29 Oildale: G,M,P
30 California Avenue: A,G,M,P,F,T
31 Bakersfield-Muni: G,M
32 Planz Road: F
33 Edison: G,M
34 Arvin-Di-Giorgio: G,M
35 Maricopa: G,M
36 Lebec: F,M

Monitoring Operation:
Sites operated by the District are underlined.
Sites operated jointly by the District and CARB are in bold and underlined.
Sites operated by CARB are in plain text.
Sites operated by other agencies are in bold text:
Other[1] Tribal
Other[2] National Park Service

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Monitoring Network Basics

- Common pollutants monitored
  - Particulate Matter (PM10 and PM2.5)
  - Ozone
  - Carbon Monoxide (CO)
  - Nitrogen Oxides (NO2)
  - Sulfur Dioxide (SO2)

- Utilizes complex equipment/analyzers
  - Tapered Element Oscillating Microbalance (TEOM), Beta Attenuation Monitors (BAMS)

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Extensive Ozone Network

County Name	Required # of Monitors	Current # of Monitors in Valley
Fresno	2	5
Kern	2	6
Kings	1	1
Madera	1	2
Merced	1	1
San Joaquin	2	2
Stanislaus	2	2
Tulare	2	2

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Extensive PM2.5 Network

County Name	Required # of Monitors	Current # of Monitors	Additional special purpose monitors
Fresno	2	4	4
Kern	2	2	1
Kings	1	1	2
Madera	1	1	0
Merced	1	1	1
San Joaquin	2	2	1
Stanislaus	2	3	0
Tulare	1	1	3

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Network Plan Includes Completed and Planned Changes to Network

- New Air Monitoring Stations (AMS)
  - Fresno and Bakersfield Near Roadway Monitors
- Enhancements to AMS
  - Replace older equipment, test new analyzers, streamlining monitoring
- Replace/Relocate AMS
  - Moved of Fresno-First AMS to new Fresno-Garland location
  - Relocation of Bakersfield-Muni PM equipment to a suitable location

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SJV Near Road Network

- NO2 monitors triggered in four CBSAs—Fresno, Bakersfield, Stockton-Lodi, Modesto

- NO2 siting requirements:
  - Located in area that is likely to have maximum concentrations
  - As close to the freeway as possible (< 50 m)
  - Sites operational by January 1, 2017

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Rigorous Near Roadway Site Selection Process

- Followed the EPA's Technical Assistance Document as closely as possible
- District and CARB worked together in order to find acceptable locations
  - Used Google Earth
  - Staff sent to visually observe locations
- EPA involved throughout the siting process and provided input

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Rigorous Near Roadway Site Selection Process (Cont'd)

- Evaluate traffic count data
  - CARB gathered traffic count data from CalTrans and estimated missing data points
- Defined start and end of segment
- Ranked segments by FE-AADT
  - Fleet Equivalent Annual Average Daily Traffic
  - Extra weight given to truck traffic
- Ranked all segments in a county/CBSA to determine top 10

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Rigorous Near Roadway Site Selection Process (Cont'd)

- Find acceptable locations where a site can be built (focusing on the highest ranked locations)
  - Contact property owners to determine interest in leasing property
  - Work with interested property owners to establish lease

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Fresno and Bakersfield Near Roadway Monitoring Site Selection

- Fresno
  - East of Highway 99, north of Jensen
    - 2482 Foundry Park Avenue
    - Exact location on the property is to be determined

- Bakersfield
  - East of Highway 99, south of JCT 65
    - 2809 Unicorn Road
    - Exact location on the property is to be determined

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Comparison with South Coast

	South Coast	Fresno	Bakersfield
Highest FE-AADT	733,000	257,000	386,000
10th Highest FE-AADT	665,000	212,000	198,000

- Both SC and SJV are required to have 4 sites
  - South Coast: 2 CBSAs, 2 sites each (14 million in population)
  - San Joaquin: 4 CBSAs, 1 site each (3 million in population)
- SC Near Road Study on I-710 measured 83 ppb (98th percentile)

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