

# NETWORK DESIGN REAL WORLD EXERCISES

Primary Quality  
Assurance Organization  
Training  
June 4 – 6, 2019



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Maybe it is time to shutdown?

# OVERVIEW

- Network Design Rules and Objectives
- Example of Minimum Monitoring Requirements
- Changes made in Santa Barbara County
- Changes in Tehama County
- Exercise: Site Relocation vs. Shutdown
- Questions

## FEDERAL MONITORING REQUIREMENTS: MINIMUM MONITORING REQUIREMENTS

- 40 CFR 58: Ambient Air Quality Surveillance
  - 58.10 Annual monitoring network plan and periodic network assessment
  - 58.14 System modification
- 40 CFR 58, Appendix D: Network Design Criteria

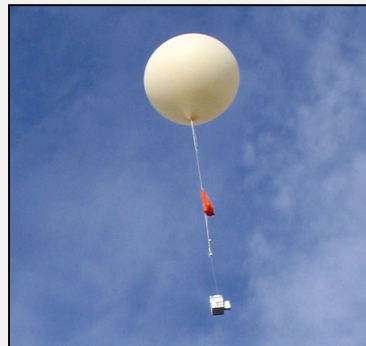
# MONITORING OBJECTIVES

## Public information

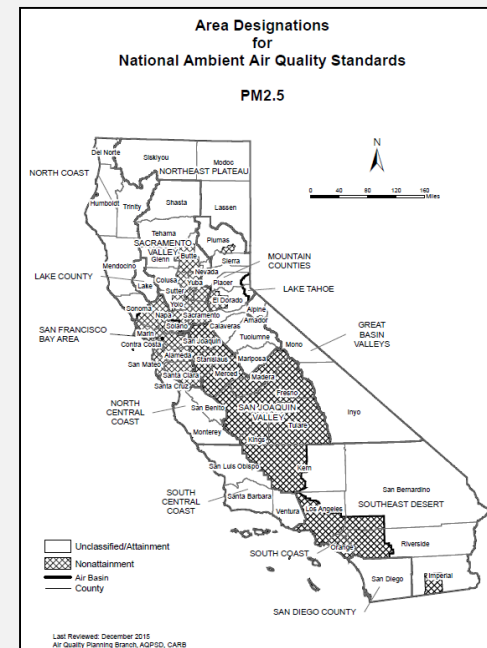
AQI for Monday, April 01, 2019

Stations Monitoring Ozone and Particulates			
Location	Ozone	PM10	PM2.5
Santa Barbara*	Moderate (71)	Good (24)	Good (33)
Santa Maria*	Good (33)	Good (23)	Good (25)
Lompoc H St	Good (19)	Good (19)	Good (22)
Goleta	Moderate (64)	Good (16)	Good (26)
Las Flores Cyn	Moderate (74)	Good (9)	
Carpinteria	Moderate (93)		
Lompoc HS and P	Good (44)		
Paradise Rd	Moderate (54)		
Santa Ynez	Good (46)		

Support air  
quality research



Support compliance with  
federal and state standards



# FEDERAL MONITORING REQUIREMENTS: EXAMPLE: OZONE MINIMUM MONITORING REQUIREMENTS

Metropolitan Statistical Area population	3-year design value concentrations $\geq 85\%$ of any Ozone NAAQS	3-year design value concentrations $< 85\%$ of any Ozone NAAQS
>10 million	4	2
4 - 10 million	3	1
350,000 - <4 million	2	1
50,000 - <350,000	1	0

- MSA: Santa Barbara – Santa Maria, CA
- Population: 448,150
- Design Value: 0.065 ppm
- Design Value = 93 percent of 0.070 ppm NAAQS

# OZONE SITES IN SANTA BARBARA COUNTY



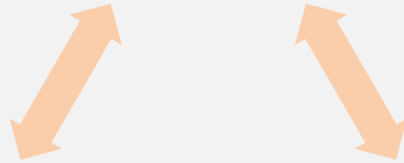
Why so many sites?

# PROBLEM

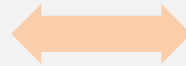
- Monitoring objectives changed
- Evolution over time (Population increases as design value decreases)
- Using up APCD and CARB Resources
- Design Sites were operated by Industry and not designated SLAMS
- Low concentration sites were in major population areas
- Permits required monitoring
- Political pressures to keep monitoring

# GROUP EFFORT

EPA



CARB



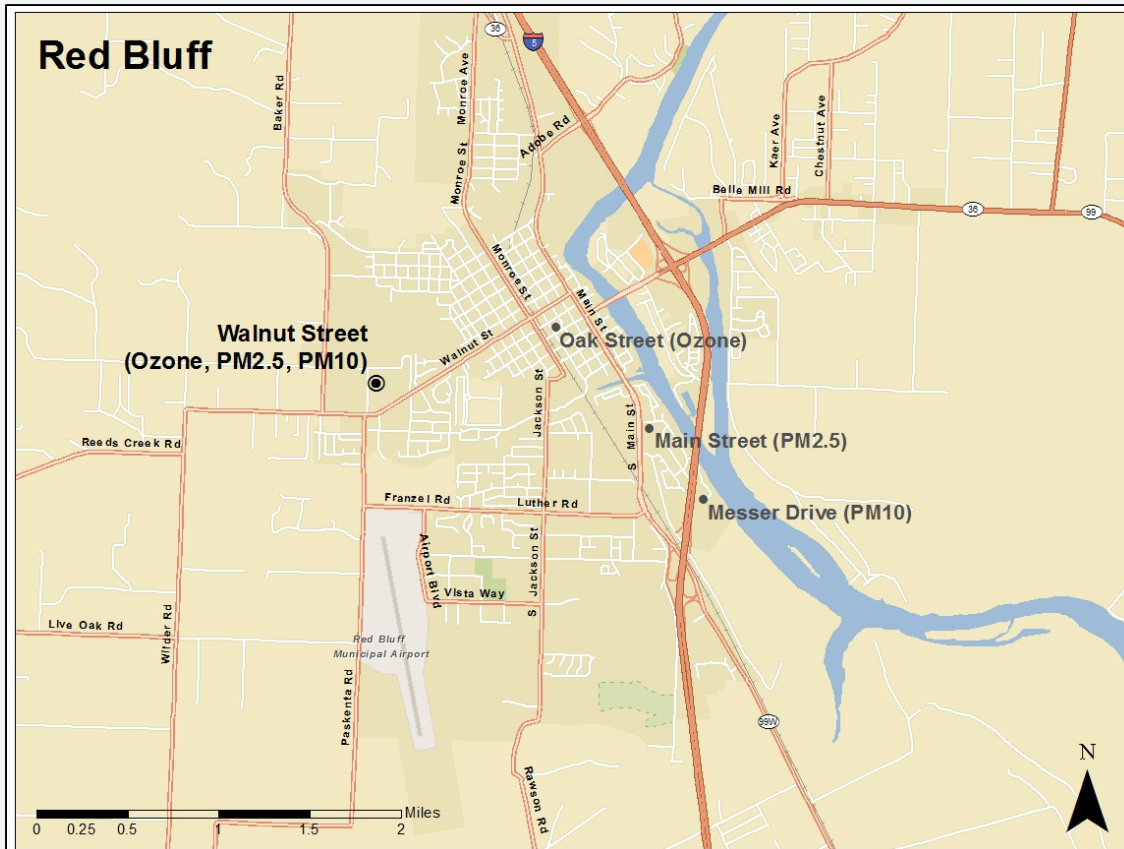
APCD



# SOLUTION

- 40 CFR 58.14 System modification analysis
- Permit Modifications
- Discussed network changes in Annual Network Plan
- Submitted formal request to EPA
- Shutdown sites and monitors
- Converted design sites to SLAMS
- Converted monitors to non-NAAQS or non-regulatory.

# EXAMPLE: TEHAMA MONITOR CONSOLIDATION



- Three sites combined into one
- Reduced:
  - Monitor downtime
  - Staff travel time
  - Maintenance
  - Site accessibility
  - Shelter temperature and humidity issues
  - Site location leases

# Making Changes to the Network

The secret to change is to focus all of your energy not on fighting the old, but on building the new.

- Socrates



# TIME FOR A CHANGE...



What needs to be considered before the change?

# CHECKLIST FOR MONITOR CHANGE

- What is driving the change?
- How will the data be used?
- How will change affect minimum monitoring requirements?
- How will change affect collocation requirements?
- Can the new monitor be audited with current resources?
- How will change affect data uploading?
- How will the change affect data certification?
- Are the operation principles well understood or is additional training needed?
- What support is necessary to make the monitor change?
- Does the change require EPA approval?
- Has ARB AQPSD been notified?
- Has ARB MLD been notified?

# TIME FOR A BIGGER CHANGE...



- Storm Damage?
- Eviction?
- Consolidation?



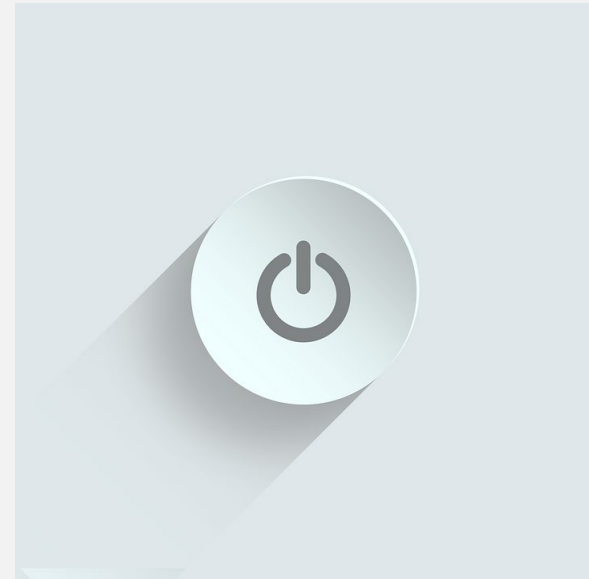
## RELOCATE OR SHUTDOWN?

- Is the monitor specifically required by an attainment or maintenance plan?
- How will Appendix D requirements be affected?
  - Max concentration site?
  - Minimum monitoring requirements?
- Has the monitor shown attainment in the last five years?
- What is the probability that the monitor will exceed 80 percent of the NAAQS in the next three years?

# GROUP EXERCISE: SHUTDOWN OR RELOCATE?



**OR**





## GROUP EXERCISE: SHUTDOWN OR RELOCATE?

- List factors to consider
- List reasons to support shutdown
- List reasons to support relocation
- What actions are necessary if there is monitor downtime?

# SHUTDOWN OR RELOCATE?

- **Factors to consider**
  - How are minimum monitoring requirements impacted?
  - Are any of the monitors part of a federally required program?
  - Is this a design value site?
  - Are any of the monitors required by a SIP or maintenance plan?
  - Are any of the monitors critical to State or local program implementation?

## SHUTDOWN OR RELOCATE?

- Support for shutdown
- Support for relocation
- Actions that are necessary if there is monitor downtime
  - Temporary shutdown in AQS
  - Null code in AQS (use the correct one)
  - Notify ARB – AQPSD and MLD
  - Notify Region 9

QUESTIONS?

- **Factors to consider**
  - How are minimum monitoring requirements impacted?
  - Are any of the monitors part of a federally required program?
  - Is this a design value site?
  - Are any of the monitors required by a SIP or maintenance plan?
  - Are any of the monitors critical to State or local program implementation?
- **Support for shutdown**
- **Support for relocation**
- **Actions that are necessary if there is monitor downtime**
  - Temporary shutdown in AQS
  - Null code in AQS (use the correct one)
  - Notify ARB – AQPSD and MLD
  - Notify Region 9