NETWORK DESIGN
REAL WORLD EXERCISES

Primary Quality Assurance Organization Training
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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

Support air quality research

Support compliance with federal and state standards
### FEDERAL MONITORING REQUIREMENTS: EXAMPLE: OZONE MINIMUM MONITORING REQUIREMENTS

<table>
<thead>
<tr>
<th>Metropolitan Statistical Area population</th>
<th>3-year design value concentrations ≥85% of any Ozone NAAQS</th>
<th>3-year design value concentrations &lt;85% of any Ozone NAAQS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;10 million</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>4 - 10 million</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>350,000 - &lt;4 million</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>50,000 - &lt;350,000</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

- 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?
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 – AQPSPD 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