Continuous PM2.5 Session

Pinehurst Conference Room
Embassy Suites
Cary, NC
May 23, 2000
8:00 am - 12:00 noon

Continuous PM2.5 Session Agenda

- Program Overview & Implementation
- Air Quality Index
- Continuous PM monitors using light scatter & beta attenuation
- Continuous Ambient Mass Monitoring System (CAMMS) for PM2.5 mass
- ***Break***
- Continuous monitors for the determination of ambient fine particle mass & Chemical components
- Presentation of continuous data from Eric Edgerton
- State presentations:
  - Delaware
  - Idaho
  - Connecticut
  - Others

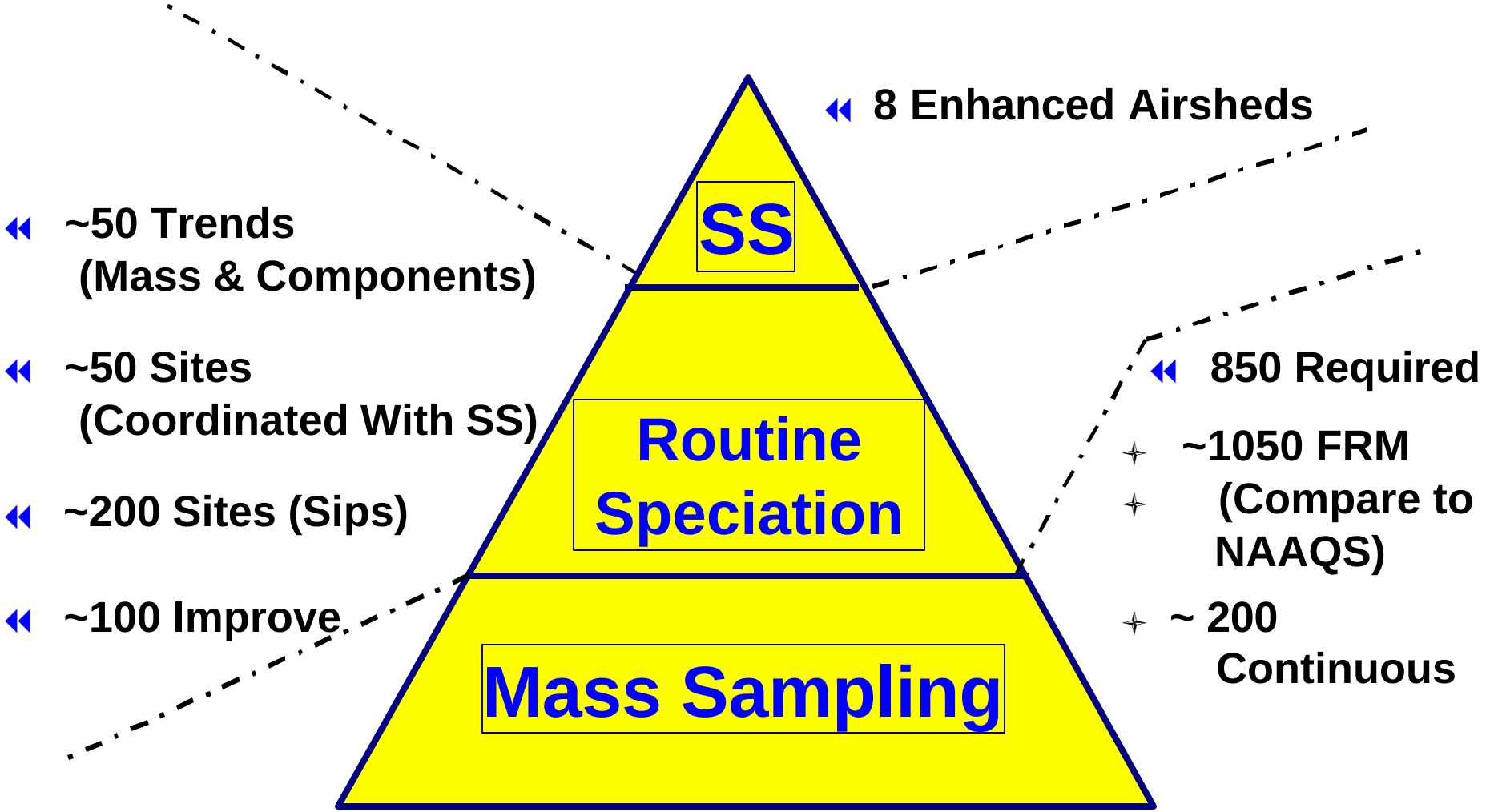
PM2.5 Continuous Monitoring Program Overview & Implementation

Tim Hanley
EPA - OAQPS

PM2.5 Continuous Monitoring

- Monitoring Objectives
- Network Update
- Monitor Selection
- PM2.5 Continuous Monitoring Workgroup
- AIRS Reporting Issues
- Information Request
- Data Quality Objectives
- Next steps

PM2.5 Monitoring Program



PM2.5 Monitoring Program

PM2.5 Monitoring Objectives

Network Element	Compare to NAAQS	Public Infor. AQI	SIP Devel.	Assess SIP Trends	Health/ Exposure	Assess Visibility	Methods Testing
FRM Mass	T			X	X		
Continuous Mass		T	X		X		
Speciation (Trends)			X	T	X	X	
Speciation			T		X		X
Speciation (IMPROVE)			X	X		T	
Supersites			T		T		T

Primary Purpose(s) T **Secondary Purpose (s)** X

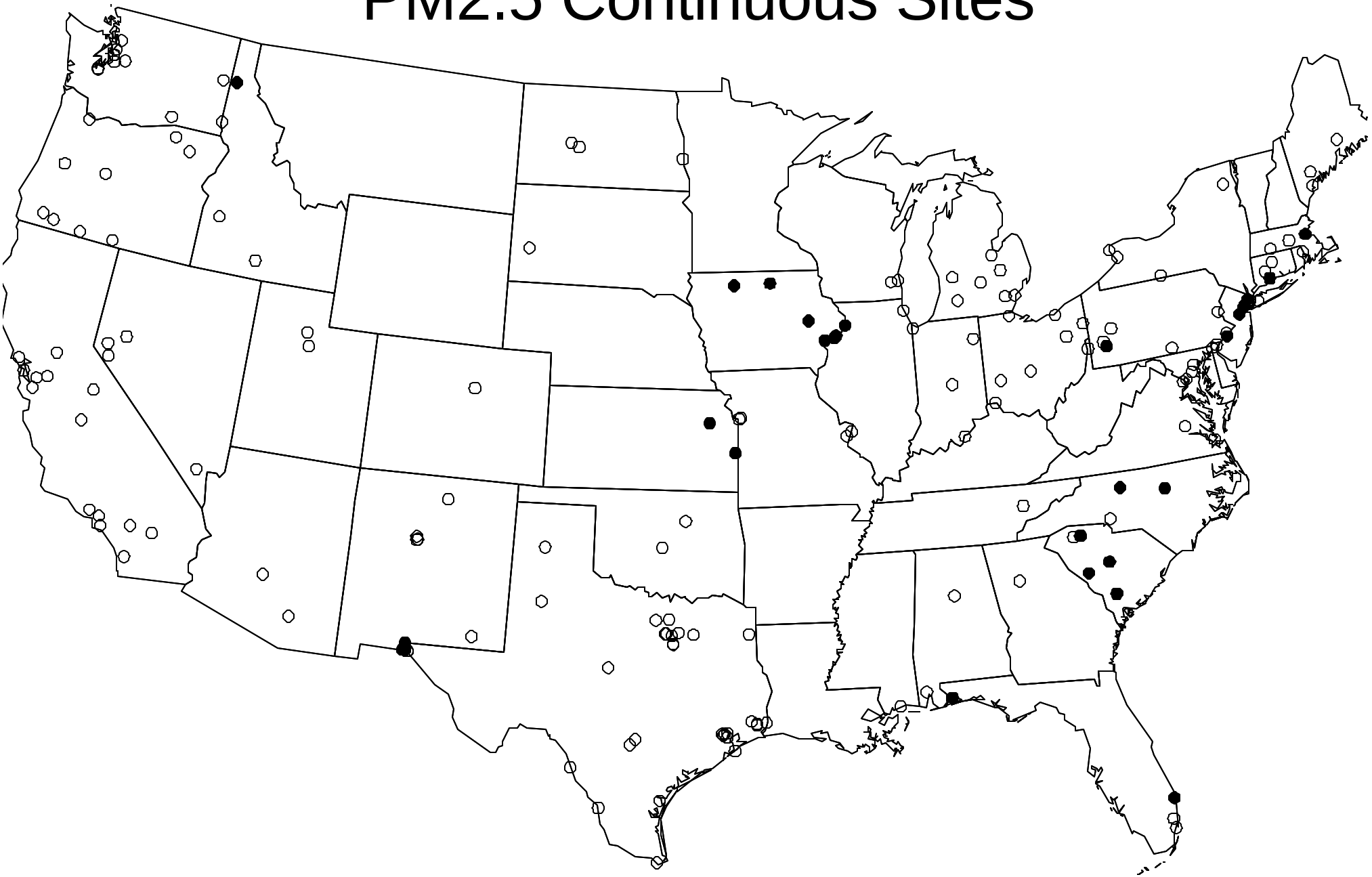
PM2.5 Continuous Monitoring Objectives

- Primary objective:
  - **Public Reporting**
    - Air Quality Index (AQI)
- Other Objectives:
  - Health/Exposure
  - SIP Development

Network Update

- PM2.5 continuous monitoring required in each metropolitan area with a population >1M
- AQI reporting required in MSA's >350K
- Estimate of 114 continuous sites currently operating
  - 36 of these have reported data to AIRS
- Estimate of 240 sites operational by end of 2000

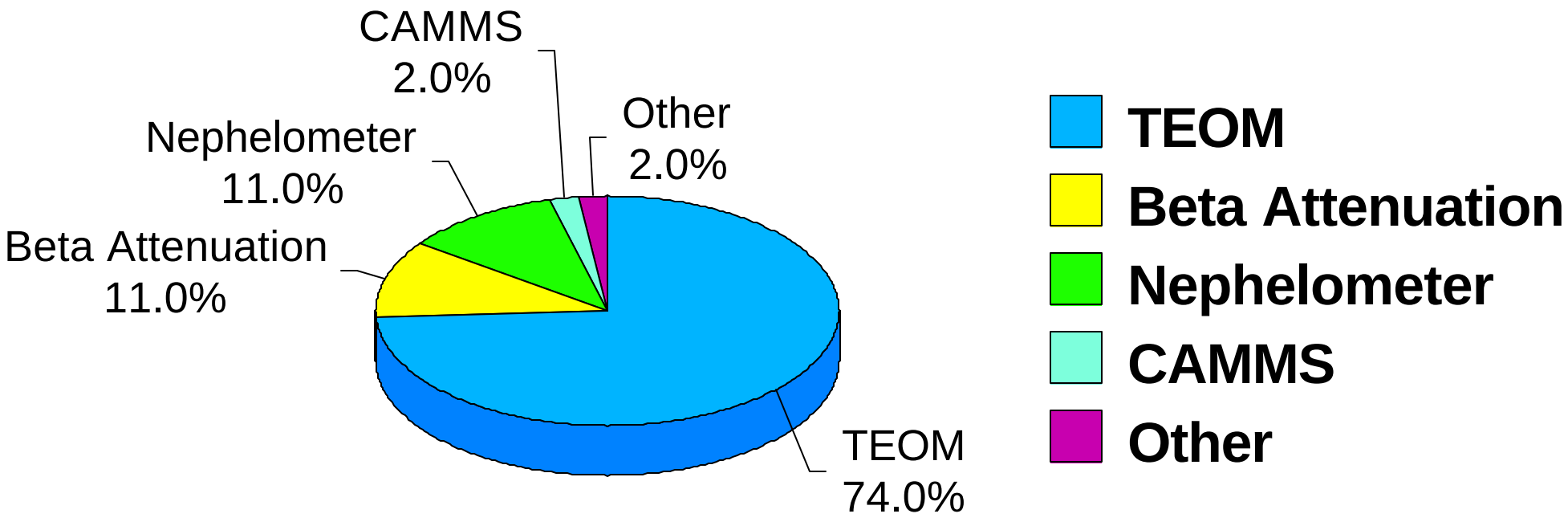
Expected
PM2.5 Continuous Sites



PM2.5 Continuous Monitor Selection

- Monitor selection made by State/local Agencies
  - ► No national contract
- "Guidance for Using Continuous Monitors in PM2.5 Monitoring Networks", May '98
- Many agencies selected monitors they were familiar with from PM10 continuous work
- CARB - Ran special study

PM2.5 Continuous Monitor Selection
Estimated percent of all instruments in network
48 States & DC Responding



PM2.5 Continuous Monitoring Workgroup

- Workgroup formed last fall, includes OAQPS/Regions/States/Locals to address:
  - Methods
  - QA/QC
  - Reporting
- Priorities *(as identified by the Workgroup)*
  - FEM's are needed *(note: none exist for PM2.5)*
  - Consistent methods and their reporting
  - Correction factors
  - AQI

PM2.5 Continuous Monitoring Workgroup Activities

- Completed:
  - Identified priorities
  - Identification of most AIRS codes
  - Completed information collection on implementation of PM2.5 continuous network
  - Cross check of available TEOM SOP's for consistency and applicability of checks and maintenance
- Current:
  - method codes for AIRS databank
  - Data Quality Objectives (DQO's) for correlation of continuous and FRM data
  - Updated QAPP sections and SOP's
  - Summary of important information in PM2.5 continuous monitoring is being archived in "PM2.5 Continuous Monitoring Summary Document"

Understood Issues

- Monitoring should occur under conditions of actual volumetric flowrate and reported as PM2.5 at local conditions - parameter code 88101
- Table L-1 criteria are not required to be reported for PM2.5 continuous monitors
- Sampling period should be on local standard time

AIRS Reporting Issues

- Number of digits to report - report to 1 decimal place
- Use of parameter of Occurrence Codes (POC)
  - Use POC 3 for first PM2.5 continuous sampler
  - Use POC 4 for any collocated PM2.5 continuous sampler
- Units code is micrograms per cubic meter 105 (ug/M^3)
- Units code for flow audits is 073 (liters per minute)
- Negative values

Method Codes

- Interval = 1 hour (1)
  - anyone need to report the 24 hour (7) interval value?
- Analysis Method Descriptions
- Collection Method Descriptions

Proposed Analysis Method Descriptions (limited to 30 characters)

- TEOM-GRAVIMETRIC 50 DEG C
- TEOM-GRAVIMETRIC 30 DEG C
- CAMMS-MASS PRESSURE DROP
- BETA-ATTENUATION

Proposed Collection Method Descriptions (limited to 30 characters)

- TEOM with or without correction factor
  - PM2.5 Sharp Cut Cyclone (SCC)
  - PM2.5 Size Selective Inlet (SSI)
  - PM2.5 Well Impactor Ninety Six (WINS)
- CAMMS
  - PM2.5 SCC
  - PM2.5 WINS

Collection Method Descriptions (continued)

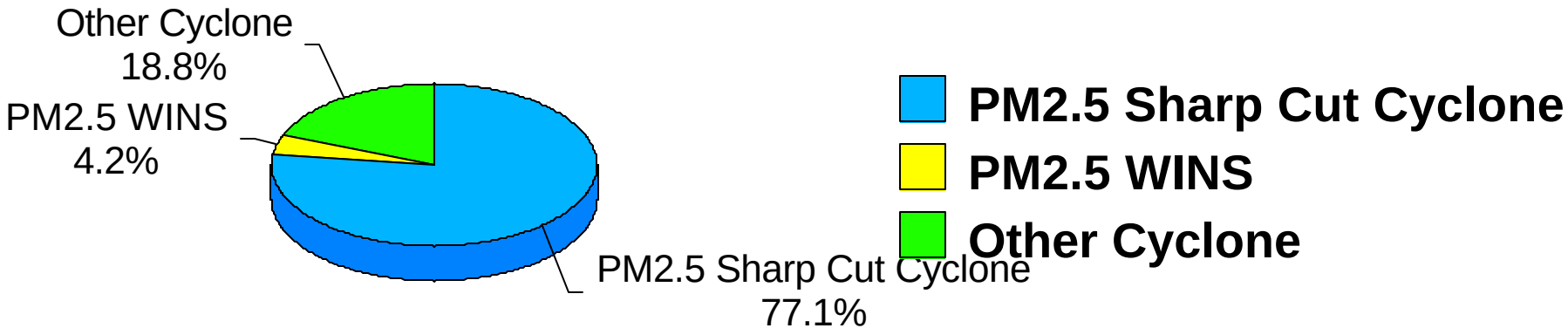
- Beta-Attenuation
  - MET-ONE BAM W/PM2.5 SCC
  - MET-ONE BAM W/PM2.5 WINS
  - ANDERSEN BAM W/PM2.5 SCC
  - ANDERSEN BAM W/PM2.5 WINS

Information Request

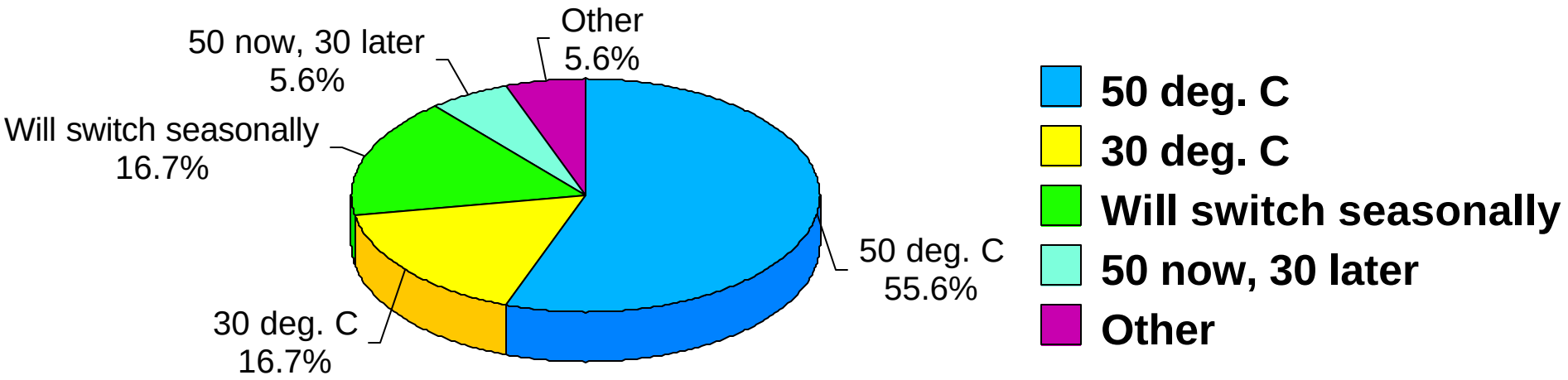
(completed 2/2000)

- Most sites are going in this spring and summer
- Most Agencies expected to report their PM2.5 continuous data to AIRS
  - (25 of 28 agencies responded yes)
- Most agencies expected to cover their quality system by incorporating PM2.5 continuous monitoring into their PM2.5 QAPP or Continuous Measurements QAPP

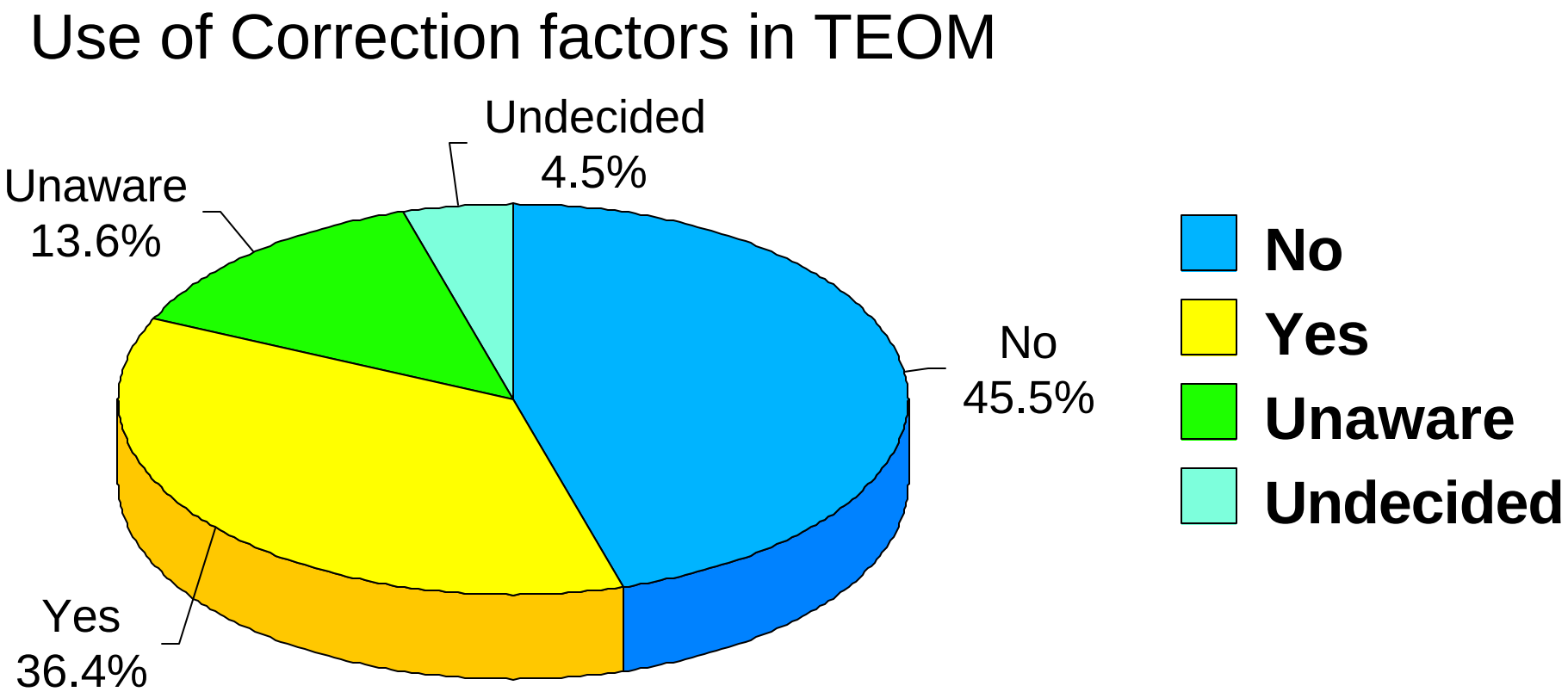
PM2.5 Separation Device Selections
Estimated percent of all separation devices
36 States Responding



TEOM Users Operational Temperature
Estimated percent by State
22 States Responding



TEOM Users Using Correction Factors
Estimated percent by State
22 States Responding



Data Quality Objectives (DQO's)

- Effort on DQO's for correlation of FRM's and PM2.5 continuous monitors for the purpose of reporting the AQI is about to begin
- Need involvement of people and data:
  - Stakeholders involved:
    - TNRCC
    - Hillsborough County Florida
    - OAQPS
    - Battelle
    - Could use other State/locals; especially those who are familiar with AQI reporting.
  - Data Needs:
    - A years worth of FRM and PM2.5 continuous data

Expected output of the DQO process?

- Statistics appropriate for use in correlating FRM's and continuous data when reporting the AQI
- Better understanding of the needs of the different stakeholders involved in the DQO process

Next Steps:
QAPP's and SOP's

- Effort underway to update the model QAPP for those sections applicable to PM2.5 continuous monitoring
- Effort underway to set up standard SOP for PM2.5 continuous monitoring:
  - Start with TEOM due to extensive use