



Technical Status Report

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Background

The purpose of this ongoing series of status report is to periodically describe what and when technical work products from WRAP Forums and Workgroups or other sources will be available for use in the regional haze planning process. Descriptions of the individual projects are in the WRAP workplan, and methods and details about the data (how and why the work was done) are also available from contractor reports or websites, or from the Technical Coordinator.

The status report is organized as follows:

- Access and content of existing data nodes;
- Key existing and planned work product deliverables from Forums and Workgroups, summarized from the project descriptions in the WRAP Workplan Update for 2005-07 (http://wrapair.org/WRAP/documents/05-07Workplan_final.pdf);
- The overall schedule and approach for technical analyses of control strategies supporting regional haze planning; and
- Highlights and brief descriptions of selected specific analyses and projects related to regional haze planning.

A) Existing Data Nodes

Updates and changes to this section will be noted *in italics* in future reports.

Visibility Information Exchange Web System (VIEWS) - <http://vista.cira.colostate.edu/views/> – this system provides ongoing access to IMPROVE and other visibility monitoring data, research results, and special studies related to the Regional Haze Rule. Downloads of the IMPROVE data, custom displays of spatial, chemical, and temporal patterns, as well as information about applying monitoring data for regional haze planning are available. This information will be used in the Phase II Attribution of Haze (AoH) project during 2005-06. This system was originally sponsored by the Ambient Monitoring & Reporting Forum, and now has national coverage through sponsorship by all 5 RPOs.

Causes of Haze Assessment project (CoHA) - <http://coha.dri.edu/index.html> - this ongoing project of the Ambient Monitoring & Reporting Forum project is completing detailed analyses of IMPROVE and meteorological monitoring data in the WRAP region. Work to date includes multi-year back trajectory wind plots for each monitored Class I area, trajectory regression analyses' results used in the Phase I AoH project, and extensive descriptive information about the monitoring data and each Class I area. Planned work for 2005-06 will be used include trend analyses and receptor modeling using the Positive Matrix Factorization (PMF) technique to relate source types and regions to the 2000-04 baseline period monitoring data, also to be used in AoH Phase II.

Emissions Data Management System (EDMS) - http://wrapedms.org/default_login.asp - this ongoing project of the Emissions Forum is an emission inventory data warehouse and web-based GIS application that provides a consistent, complete, and regional approach to emissions data tracking to meet the requirements for SIP and TIP development, periodic progress reviews, and data updates. The EDMS serves as a central regional emissions

inventory database for all types of emissions, and uses associated software to facilitate the data collection efforts for regional modeling, emissions tracking and associated data analyses. Baseline and future years' emissions data will be stored and accessed here, with the displays and regional summaries to be used in AoH Phase II. Use of the EDMS is based on user registration and periodic listserv updates, requires a password for ad-hoc data queries, but is open to all interested users.

Regional Modeling Center (RMC) - <http://pah.cert.ucr.edu/aqm/308/> - the objective of this ongoing project of the Air Quality Modeling Forum is to provide the necessary technical and policy tools needed by states and tribes for the Regional Haze Rule. The substantial effort by the RMC is intended to support State and Tribal agencies in conducting regional haze analyses in the western United States. This analysis is being performed by operating regional scale, three-dimensional regulatory air quality models that simulate the emissions, chemical transformations, and transport of criteria pollutants and fine PM and consequent effects on visibility in Class I areas in the WRAP region and across North America. Responsibilities of the RMC include: 1) Emissions processing and modeling; 2) Air quality and visibility modeling simulations; 3) Analysis, display, and reporting of modeling results, and 4) Storage/quality assurance of the modeling input and output files. The RMC offers periodic listserv updates, provides data and technology transfer support, and uses monthly conference calls to review work products. Results from the RMC work will be used extensively in the AoH Phase II project.

B) Overview of WRAP 2005-06 Key Technical Deliverables (August 2005 update)

Time Frame	Responsible Group/Subject	Deliverable (completion target month)
2005 Q2	Emissions Forum	<ul style="list-style-type: none"> ▪ Operational version of Emissions Data Management System (EDMS) with actual 2002 EI for WRAP region. (done, update scheduled for August)
	Fire Forum (Phase 2 EI project)	Final 2002 complete fire EI – actual 2002 emissions, stored in EDMS. (completed July)
	Monitoring Forum (CoHA project)	<ul style="list-style-type: none"> ▪ Source apportionment of each state’s major emissions source category impacts at Class I areas in AoH report. (done) ▪ Descriptive analyses of 2002 monitored impact at Class I areas in AoH report. (done)
	Modeling Forum (TSSA project)	<ul style="list-style-type: none"> ▪ Source apportionment of each state’s major emissions source category impacts at Class I areas in AoH report. (done) ▪ Initial source apportionment of each state’s natural and manmade emissions at Class I areas in AoH report. (done) ▪ Boundary conditions and new emissions estimates from WRAP Fire Forum, other RPOs, Canada, and Mexico updated. (completing early August)
	Attribution of Haze WG	<ul style="list-style-type: none"> ▪ AoH Phase I Report complete – Integrated “weight of evidence” source attribution for each state’s emissions source category impacts at Class I areas, from TSSA and CoHA projects, based on 2002 “interim” (not EDMS) EIs. (done)
	Tribal Data Development WG	<ul style="list-style-type: none"> ▪ Tribal monitoring data analysis from CoHA project for tribal Class I areas in AoH report. (done)
	Stationary Sources Forum	<ul style="list-style-type: none"> ▪ List of BART-eligible sources (done) ▪ Emission Inventory and Control Technology Technical Support project underway (scheduled work completed)
	Dust Emissions Forum	<ul style="list-style-type: none"> ▪ Phase 2 windblown dust emissions inventory model completed, evaluated, and EI included in subsequent modeling analyses. (done) ▪ Host dust control measures workshop (done)

2005 Q3	Emissions Forum	<ul style="list-style-type: none"> ▪ EDMS updated with 2018 base case EI for WRAP region. (inputs from EF/SSJF/TDDWG projects below – September) ▪ Onroad, off-road, and road dust 2002, 08, 13, and 18 EI updates complete (August-September). ▪ 2002 and 2018 offshore shipping, locomotives, and planes’ EIs complete (August- September). ▪ Complete second round of testing on EDMS performance (October).
	Fire Forum (Phase 3 EI project)	<ul style="list-style-type: none"> ▪ 2000-04 baseline period and 2018 fire EI scenarios for planning purposes. (starting in July)
	Monitoring Forum (CoHA project)	<ul style="list-style-type: none"> ▪ Continuing development of conceptual models and processing of additional IMPROVE data as inputs for the AoH Phase II project. (March)
	Modeling Forum (2002 base case modeling project)	<ul style="list-style-type: none"> ▪ Modeling performance evaluation using final actual 2002 emissions from SSJF/EF project, and compared to monitoring data, as inputs to AoH Phase II. (September)
	Attribution of Haze WG	<ul style="list-style-type: none"> • AoH Phase II/Technical Support System = update 2002 source attribution report. (July-November)
	Tribal Data Development WG	<ul style="list-style-type: none"> • Tribal monitoring needs draft report from CoHA project for tribal Class I areas. (August) ▪ Review, improve, project emissions inventories of point and oil/gas sources on tribal lands. (August)
	Stationary Sources Forum	<ul style="list-style-type: none"> ▪ Complete review and QA of the 2002 point and area source inventory. (August)
	Mobile Sources Forum	<ul style="list-style-type: none"> ▪ Continuing work on off-road retrofit program.
	Dust Emissions Forum	<ul style="list-style-type: none"> ▪ Establish a preliminary definition of dust and release for public review. ▪ Recommendations on appropriate size distribution of fine versus coarse dust emissions.
	In and Near Forum	<ul style="list-style-type: none"> • Summarize PM₁₀ SIPs for local sources and their transferability to Class I areas. (done)
2005 Q4	Emissions Forum	<ul style="list-style-type: none"> ▪ Prepare EIs for 2018 control strategy projections for WRAP region. (November-December) ▪ Complete continuing needed improvements to EDMS.
	Fire Emissions Forum (Phase 4 EI project)	<ul style="list-style-type: none"> ▪ 2018 projection year fire EIs consisting of 2 to 3 scenarios, wildfire constant 2002-18. (October)
	Monitoring Forum (CoHA)	<ul style="list-style-type: none"> ▪ PMF analyses and processing of additional data as inputs to AoH Phase II. (November) ▪ Publish preliminary IMPROVE monitoring data from 2000-04 for glide path. (October)
	Modeling Forum (2018 base case modeling project)	<ul style="list-style-type: none"> ▪ Modeling evaluation using 2018 base case emissions as inputs to AoH Phase II. (November)
	Stationary Sources Forum	<ul style="list-style-type: none"> ▪ Complete work on oil/gas and point source 2018 base case EI projection scenarios. (October) ▪ Prepare scenarios’ specifications and EIs for 2018 control strategy projections for WRAP region. (November-December)

2006 Q1	Emissions Forum	<ul style="list-style-type: none"> ▪ Complete continuing needed improvements to EDMS. ▪ Continuing emissions analyses for 2018 control strategy scenarios.
	Monitoring Forum (CoHA project)	<ul style="list-style-type: none"> ▪ Continue work on products for AoH Phase II report. ▪ Work on completing final regulatory dataset from IMPROVE 2000-04 monitoring data.
	Modeling Forum (2018 control strategy modeling project)	<ul style="list-style-type: none"> ▪ Start source apportionment of each state's 2018 major emissions source category impacts at Class I areas, associated with control strategy scenarios for second AoH report. (January)
	Attribution of Haze WG	<ul style="list-style-type: none"> ▪ AoH Phase II – present 2018 base case integrated “weight of evidence” source attribution for each Class I area. (January)
	Stationary Sources Forum	<ul style="list-style-type: none"> ▪ Continue work on control technology analysis and program development
	Dust Emissions Forum	<ul style="list-style-type: none"> ▪ Complete definition of dust
2006 Q2	Emissions Forum	<ul style="list-style-type: none"> ▪ Continuing emissions analyses for 2018 control strategy scenarios.
	Monitoring Forum (CoHA)	<ul style="list-style-type: none"> ▪ Work products to support AoH report.
	Modeling Forum (2018 control strategy modeling project)	<ul style="list-style-type: none"> ▪ Continuing source apportionment of each state's 2018 major emissions source category impacts at Class I areas, associated with control strategy scenarios. ▪ Source apportionment of each state's natural and manmade emissions at Class I areas.
	Attribution of Haze WG	<ul style="list-style-type: none"> ▪ Continue work on second AoH Phase II/TSS projects.
	Stationary Sources Forum	<ul style="list-style-type: none"> ▪ Continue work on control technology analysis and program development
	Dust Emissions Forum	<ul style="list-style-type: none"> ▪ Complete analysis of sources and control options in high-dust areas
2006 Q3	Emissions Forum	<ul style="list-style-type: none"> ▪ Continuing emissions analyses and tracking specifications for 2018 control strategy scenarios.
	Monitoring Forum (CoHA)	<ul style="list-style-type: none"> ▪ Complete work products to support AoH report.
	Modeling Forum (2018 control strategy modeling project)	<ul style="list-style-type: none"> ▪ Complete source apportionment of each state's 2018 major emissions source category impacts at Class I areas, associated with control strategy scenarios. ▪ Complete source apportionment of each state's natural and manmade emissions at Class I areas. (December)

	Attribution of Haze WG	<ul style="list-style-type: none"> ▪ Complete work on AoH Phase II/TSS projects, integrating work products from EF, MF, AMRF, SSJF, FEJF, TDDWG, and DEJF for IWG use. (September)
	Stationary Sources Forum	<ul style="list-style-type: none"> ▪ Complete work on control technology analysis and program development
	Dust Emissions Forum	<ul style="list-style-type: none"> ▪ Complete analysis of sources and control options in high-dust areas

C) Schedule and Technical Analyses of Control Strategies Supporting Regional Haze Planning

The overall schedule and the approach for technical analyses of control strategies supporting regional haze planning is summarized in the section below. Additional information is available in the 2005-07 WRAP Workplan and 2003-08 WRAP Strategic Plan at: <http://www.wrapair.org/WRAP/docs.html>.

The approach is intended to fulfill the following:

- Consistent, comparable, and reproducible regional analyses of technical data;
- Interstate consultation of the baseline and 2018 projection year emissions contributions of states and tribes to each Class I area; and
- Assessment of the visibility improvement from adopted and proposed control strategies at each Class I area within and downwind of the WRAP region.

The control strategies to be evaluated are defined as emissions inventories, described next. Regional dispersion modeling analyses of these inventories are planned. The BART rule and associated modeling requirements are being evaluated so that modeling work can efficiently cover needs of individual states and the SSJF to evaluate emissions reductions for individual sources and in regional programs. A first draft of this “consolidated” modeling protocol will be available in mid-August.

The Attribution of Haze Workgroup is responsible for integrated analyses of monitoring and emissions data, and air quality dispersion and receptor modeling results. The AoH WG is planning to jointly complete these analyses between August 2005 and September 2006, referred to as the AoH Phase II project, and simultaneously build and display these results into a Technical Support System website. All Forums, Workgroups, and Committees, but especially the IWG will have significant input into the design and functions of the TSS. The AoH Phase II/TSS project workplan will also be available in mid-August.

Updates on these projects and the technical approach will appear in subsequent technical status reports.

Evaluation of 2018 Regional Haze Control Strategies

<p>September through December 2005</p>	<p><u>2018 Base Case Definition</u></p> <ul style="list-style-type: none"> • Known control programs, i.e., what emissions will be in 2018 if no additional controls are adopted • Projected from 2002 emissions (2000-04 in the case of fire emissions) 	<p>2018 Base Case Control Programs</p> <ul style="list-style-type: none"> • Federal on-road and non-road mobile emissions • §309 SIPs (5-state SO₂ Annex) • Controllable fire emissions (use 2000-04 baseline for 2018) • Point and area sources: <ol style="list-style-type: none"> 1) Statutes and rules “on the books” as of 12/2004 to be implemented before 2018 2) Sources to be operational before 2018 (permitted and under construction as of 12/2004) 3) Includes quantified SIP measures, NEAPs, EACs, MACT, etc. 4) Accounts for economic and demographic factors
<p>August 2005 through September 2006</p>	<p>2018 Regional Control Options</p> <ul style="list-style-type: none"> ✓ California PM_{2.5} and ozone SIP measures ✓ BART- individual eligible sources added up for regional analysis ✓ Point Source backstop cap and trade for BART + other point sources, options for: <ul style="list-style-type: none"> • Regional NO_x • Regional SO₂ • Nested §309 SO₂ • Others? ✚ Fire - greater application of Emissions Reduction Techniques for fire emissions to meet definition of regionally consistent enhanced smoke management programs – sensitivity evaluation ✚ Dust - greater control levels and/or spatial extent of existing Dust Control programs – sensitivity evaluation 	
<p>Not for regional analysis</p>	<ul style="list-style-type: none"> ➤ Area sources in general ➤ Dust sources in general 	

WRAP Emissions Inventories for Regional Haze Planning (August 2005 update)

	2002 – represents 2000-04 baseline period	2018 Base Case	2018 Control Scenarios
Point	<ul style="list-style-type: none"> a. Start with EDMS as reported using 2002 NEI CERR submittals by states/tribes [www.wrappedms.org] b. 2002 CA NEI data in EDMS as reported c. Improvement project by ERG/ENVIRON, focused on QA of reported data, oil/gas production/distribution, and data on existing controls d. Deliverables – August 2005 	<ul style="list-style-type: none"> a. Based on 2002 EDMS EI as improved by ERG/ENVIRON b. “On-the-books” controls as of 12/2004, use forecast models to project 2018 base case with no additional controls c. Obtain/report CA data for 2018 base with documentation, need to coordinate on format d. Deliverables – October 2005 e. Will be loaded in EDMS 	<ul style="list-style-type: none"> a. 3 to 5 scenarios, derived from 2018 base case EI as projected by ERG/ENVIRON, based on applying SO_x and NO_x control technology options b. Regional emissions management options addressing source categories, not source-specific c. Obtain/report CA data for 2018 new controls with documentation, need to coordinate on format d. Deliverables start after October 2005 e. Will be loaded in EDMS
Area	<ul style="list-style-type: none"> a. Start with EDMS as reported by states/tribes, gap-filled as needed using NEI methods b. 2002 CA NEI data in EDMS as reported c. Improvement project by ERG/ENVIRON, focused on QA of reported data, oil/gas prod./dist., and data on existing controls d. Deliverables – August 2005 	<ul style="list-style-type: none"> a. Based on 2002 EDMS EI as improved by ERG/ENVIRON b. “On-the-books” controls as of 12/2004, use forecast models to project 2018 base case with no additional controls c. Obtain/report CA data for 2018 base with documentation, need to coordinate on format d. Deliverables – October 2005 e. Will be loaded in EDMS 	<ul style="list-style-type: none"> a. Need for control scenarios unknown b. If needed, part of point source regional emissions management options addressing source categories? c. Obtain/report CA data for 2018 new controls with documentation, need to coordinate on format d. Deliverables start after October 2005 e. Will be loaded in EDMS

	2002 – represents 2000-04 baseline period	2018 Base Case	2018 Control Scenarios
On-Road	<ul style="list-style-type: none"> a. ENVIRON project - WRAP region survey of state/tribal/MPO/local agencies to verify Mobile6 data inputs b. Run EPA Mobile6 with specific inputs, generate 2002 emissions estimates c. Obtain/report CA data for 2002 with documentation, need to coordinate on format d. Deliverables – August 2005 e. Will be loaded in EDMS 	<ul style="list-style-type: none"> a. ENVIRON to project 2008, 2013, and 2018 emissions from 2002, using Mobile6 b. Obtain/report CA data for same years with documentation, need to coordinate on format c. Deliverables – September 2005 d. Will be loaded in EDMS 	No additional emissions control EIs are planned
Non-Road	<ul style="list-style-type: none"> a. ENVIRON project - WRAP region survey of state/tribal/MPO/local agencies to verify NONROAD2004 data inputs b. Run NONROAD2004 with specific inputs, generate 2002 emissions estimates c. Additional work on planes, trains, commercial marine, and offshore shipping d. Obtain/report CA data for 2002 with documentation, need to coordinate on format e. Deliverables – June-August 2005 f. Will be loaded in EDMS 	<ul style="list-style-type: none"> a. ENVIRON to project 2008, 2013, and 2018 emissions from 2002, using NONROAD2004 b. Obtain/report CA data for same years with documentation, need to coordinate on format c. Hold planes, trains, commercial marine, and offshore shipping constant, except for “on-the-books” controls as of 12/2004 d. Deliverables – September 2005 e. Will be loaded in EDMS 	No additional emissions control EIs are planned
Road Dust	<ul style="list-style-type: none"> a. ENVIRON preparing updated 2002 road dust emissions in regionally “consistent” manner, for method see: http://www.wrapair.org/forums/ef/inventories/mobile/040209Final_MSEI.pdf b. Uses VMT inputs from mobile EI project c. Coordinate with CARB. d. Deliverables – updated 2002 EI using new VMT data – August 2005 e. Will be loaded in EDMS 	<ul style="list-style-type: none"> a. ENVIRON preparing updated 2018 road dust emissions in regionally “consistent” manner, for method see: http://www.wrapair.org/forums/ef/inventories/mobile/040209Final_MSEI.pdf b. Uses VMT inputs from mobile EI project c. Coordinate with CARB. d. Deliverables – updated 2018 EI using new VMT projections data – September 2005 e. Will be loaded in EDMS 	No emissions control EIs are planned

	2002 – represents 2000-04 baseline period	2018 Base Case	2018 Control Scenarios
Fire	<p>a. <u>2002 Actual Emissions</u></p> <ol style="list-style-type: none"> 1) Air Sciences project - WRAP region EI of actual 2002 emissions for all types of fire, developed in 2 phases 2) Based on records of federal/ state/tribal agencies, verified using survey notebooks of activity data 3) Already coordinated w/ N. Sotolongo of ARB 4) Deliverables – July 2005 5) Will be loaded in EDMS <p>b. <u>2000-04 Baseline Planning Emissions</u></p> <ol style="list-style-type: none"> 1) Air Sciences project - WRAP region planning EI “representative” of actual 2000-04 emissions for all types of fire [2-part project, see 2018 fire EI] 2) Built by comparing and compositing fire activity from longer period of record with 2002 Actual Emissions EI, using records of federal/state/tribal agencies 3) <i>Obtain/report CA data for same years with documentation, coordinate on format and use</i> 4) Deliverables – October 2005 5) Will be loaded in EDMS 	<p>a. <u>2018 Projection Planning Emissions</u></p> <ol style="list-style-type: none"> b. Air Sciences project - WRAP region planning EI “representative” of range of 2018 emissions for all types of fire [completes 2-part project, see 2000-04 fire EI] c. Based on 2000-04 fire EIs, each fire category assessed for likely range of fire activity and the associated variance in potential emissions across the WRAP region, emissions to be categorized as anthropogenic or natural, and controllable versus uncontrollable emissions for anthropogenic fire projected for each type of fire EI d. Wildfire in 2018 for modeling applications to be held constant, same as 2000-04 wildfire EI e. With support from the contractor, state and tribal regulatory smoke managers will coordinate with their burners to determine the likely 2018 range of each fire activity type in their jurisdiction f. Obtain/report CA data for 2018 with documentation, coordinate on format and use g. Deliverables – November 2005 h. Will be loaded in EDMS 	
WB Dust	<ol style="list-style-type: none"> a. WRAP Regional Modeling Center product b. 36/12km data from 2002 MM5 winds c. Deliverables – Summer 2005 d. Annual summary will be loaded in EDMS 		Hold constant
Biogenics	<ol style="list-style-type: none"> a. WRAP Regional Modeling Center product b. 36/12km data from 2002 MM5 met. data c. Deliverables – Summer 2005 d. Annual summary will be loaded in EDMS 		Hold constant
Fugitive NH₃ by Landuse Category	<ol style="list-style-type: none"> a. WRAP Regional Modeling Center product b. 36/12km data from 2002 MM5 met. data c. Deliverables – Summer 2005 d. Can be loaded in EDMS 		Hold constant
Model Boundary Conditions	<ol style="list-style-type: none"> a. Generated by Harvard/University of Houston for WRAP Regional Modeling Center 36km grid using GEOS-Chem model b. Deliverables – 2002 data complete January 2005 		Hold constant (Given Asian emissions increases – what about 2018 base case?)

D) Highlights of selected specific analyses and projects related to regional haze planning

IMPROVE Regional Haze 2000-04 Baseline Monitoring Data

IMPROVE will be releasing preliminary 2000-04 baseline period monitoring data by October 2005, for use in preparing default glide paths for each Class I area. QA and finalization of these data for regional haze SIP purposes will be completed by early Summer 2006. Final data are not expected to be very different from the preliminary data. The exact final values for regional haze planning will be affected by the QA review, any EPA decisions about using a revised light extinction equation to be recommended by the IMPROVE Steering Committee over the next few months, and any EPA decisions about using revised natural conditions estimates as discussed next.

The Ambient Monitoring & Reporting Forum held a Regional Haze Data Analysis workshop was held June 8, 2005. There were presentations and discussion of the Natural Haze Levels Sensitivity Analysis project, and the IMPROVE Steering Committee's review of their light extinction equation. See: <http://wrapair.org/forums/aamrf/meetings/050608den/index.html>.

The AMRF is considering holding another workshop in early Summer 2006 to review the final baseline period data and decisions about the equation and natural conditions.

Please contact Tom Moore or Marc Pitchford (marcp@dri.edu) for next steps or more information.

RMC Emissions Modeling Status

Through emissions modeling conference calls, the RMC determined how to group the emissions sectors for the Base 2002 simulation. We will model the following 20 sectors as separate sources that will be merged to create the final emissions for the Base 2002 simulation:

- WRAP fires (combined ag, rx, wf, etc)
- non-WRAP point fires
- CENRAP area fires
- stationary point (non WRAP)
- stationary point (WRAP, including CA offshore)
- stationary area (all U.S. and VISTA fires)
- non-WRAP on-road mobile
- WRAP on-road mobile
- non-road mobile (all U.S., including west coast port/near port shipping)
- west coast shipping lanes (25-300 km offshore)
- offshore point (Gulf)
- offshore area (Gulf)
- anthropogenic dust (agricultural, construction, mining, road)
- windblown dust
- biogenic
- anthropogenic NH₃ (WRAP and CENRAP only, other RPO's in stationary area)
- all Mexico (area like)
- Mexico point
- all Canada (area like, including fires)
- Canada point

A remaining decision is which of these categories will need to have source apportionment modeling analyses done for them. Source apportionment modeling of emissions sector requires data processing prior to running the emissions processor and air quality models.

Technical Report on Ambient Particulate Matter - Characterization of Ambient PM10 and PM2.5 in California - <http://www.arb.ca.gov/pm/pmmeasures/pmch05/pmch05.htm>

Reducing particulate matter (PM) air pollution is one of the California Air Resources Board's (ARB or Board) highest public health priorities. Exposure to particulate pollution is linked to increased frequency and severity of asthma attacks, pneumonia and bronchitis, and even premature death in people with preexisting cardiac or respiratory disease. Those most sensitive to particle pollution include infants and children, the elderly, and persons with heart and lung disease. Particulate matter pollution consists of very small liquid and solid particles suspended in the air and includes particles smaller than 10 microns in size (PM10), as well as the subset of fine particles smaller than 2.5 microns in size (PM2.5). Particles with a size between 2.5 and 10 microns are often referred to as coarse particles.

In 2003, the Legislature enacted Senate Bill 656, to reduce public exposure to PM10 and PM2.5. The legislation requires the ARB, in consultation with air pollution control and air quality management districts (air districts), to adopt a list of the most readily available, feasible, and cost-effective control measures that can be implemented by air districts to reduce PM10 and PM2.5.

The legislation establishes a process for achieving near-term reductions in PM throughout California, especially in those areas that have not had federal planning requirements. This will ensure continuing focus on PM and progress towards attaining California's health protective air quality standards. The ARB approved the list of control measures on November 18, 2004, which can be found at the following web site: <http://www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm>

Over 100 possible measures covering a broad spectrum of sources are included on the list. Air districts must now develop implementation schedules by July 31, 2005. The implementation schedules will identify a subset of measures from the list that are appropriate to the severity and nature of the PM problem in each area.

The purpose of this report is to assist air districts in evaluating the nature of their PM problem. The report describes the characteristics of PM10 and PM2.5 in each of California's air districts within each air basin including: ambient concentrations; spatial, seasonal, and hourly variations; and indication of broad source categories leading to the observed ambient particle concentrations.