DRAFT 7/25/08 - Workshop on Regional Emissions & Air Quality Modeling Studies

Date/time: Tuesday-Wednesday, July 29-30 (8 to 530 on Tuesday, 8 to 330 on Wednesday)

Location: Denver, CO – DoubleTree Hotel Denver (http://www.wrapair.org/cal/calendar.php?op=view&id=789)

Purpose:

1) Address plans for developing and updating regional emissions data and conducting modeling studies, and applying those data for the 2009-12 time frame;

   a. Identify strengths and weaknesses of existing WRAP and other emissions data collection support systems and processes;
   b. Determine key emissions sectors requiring further analysis;
   c. Discuss needs and capabilities for future regional modeling and analysis techniques (Eulerian, Lagrangian, receptor, inverse, others);
   d. Develop coordination with ongoing and planned State/Tribal/Local/Federal modeling activities;
   e. Discuss timing, effort, activities, and any needed changes in future projects by WRAP contractors; and
   f. Document results for work planning purposes & next steps

2) Identify opportunities for supporting state, tribal, local, and federal air quality planning needs;

   a. Tracking improvements in visibility/reductions in regional haze;
   b. Analyzing source-receptor relationships for nonattainment areas;
   c. Analyzing source receptor relationships for attainment and unclassifiable areas;
   d. Quantifying welfare/ecosystem impacts for remote/rural areas; and
   e. Analysis and development of regional emissions reduction strategies to complement state, tribal, local, and federal air quality planning efforts

3) Discuss needs, time frames, and costs for tracking and analysis.

Results: Report with key deliverables and projects needed in 2009-12 timeframe

Tuesday July 29th

800	Plenary - Welcome/Purpose/Introductions - overview of regional analysis approach of this workshop
830	• **Overview & WRAP Status Check: What are ongoing and emerging regional air quality issues?** – Tom Moore, WRAP staff o 2012 Regional Haze mid-course check/planning requirements o March 2008 Ozone NAAQS revision – designations/planning requirements/attainment plans ▪ *New Ozone Standard – Issues in the West white paper* o December 2006 $PM_{2.5}$ NAAQS revision – designations/planning requirements/attainment plans o Future actions by EPA to regulate Mercury o Review of/future revisions to the Primary & Secondary NAAQS o Completing foundational Regional Haze Plans o WRAP 2008-12 Strategic Plan - Future Regional Analysis Needs for Air Quality Planning o Summary of initiatives on regional air quality issues • Resource constraints • What questions to ask and answer at which scale(s)?
1000	Break
1015	**Emissions & Air Quality Modeling at the WRAP RMC - Status, Tools, & Process** - Zac Adelman, UNC Institute for the Environment
1100	**Estimating On-Road Mobile Source Emissions using CONCEPT** – Ralph Morris, ENVIRON

1145	Lunch break - on your own
100	**Biogenics, Ammonia, Dust, and Fire Emissions** • **Development of the MEGAN Biogenics Model** – Christine Wiedinmyer, ACD/TIIMES, NCAR o *Comparison of BEIS and MEGAN, Env. Sci. & Tech., 2008* • **Status & Lessons - Regional Ammonia & Windblown Dust Models** – Gerry Mansell, ENVIRON • **Fire Emissions Tracking System Development & Implementation** – Dave Randall, Air Sciences
230	Break
245	**Characterizing Emissions & Impacts from Oil & Gas Field Production Activities** • **IPAMS-WRAP Phase III Emissions Inventory Project** – Ralph Morris, ENVIRON • **Managing Current & Future Emissions from Oil & Gas Production** – Phil Schlagel, Anadarko • **Federal EIS Air Quality Analyses** – John Vimont, NPS • **Potential Future Regional Modeling Center Cumulative Analysis** – Ralph Morris, ENVIRON o *Cumulative Analysis Task white paper*
415	**Plenary – discussion, Q&A, WRAP-up, and plans for next day's session**s
530	Adjourn for the day

Wednesday July 30th

800	Plenary – agenda review, goals for the day
815	**Source-Receptor Studies for Primary & Secondary National Ambient Air Quality Standards** • **WRAP 36km 2002 Ozone Model Performance & 2018 Projections** – Gail Tonnesen, UCR o *Ozone Performance & Projections white paper* • **2010 CARB/NOAA/CEC Air Quality & Climate Change Field Study** – David Parrish, NOAA o *2010 CalNexus Study white paper* • **Modeling Studies of Air Quality in the 4 Corners Region** – Marco Rodriguez, CSU/CIRA • **$PM_{2.5}$ Air Quality along the Wasatch Front/Southern ID** – Patrick Barickman, UT DEQ
1000	Break
1015	**Source-Receptor Studies for Primary & Secondary NAAQS, continued** • **RoMANs Nitrogen Source Sensitivity Analysis** – Mike Barna, National Park Service • **Northwest AIRQUEST/AIRPACT Regional Modeling Studies** – Joseph Vaughan, WSU • **Fire Emissions & Modeling Studies** – Shawn Urbanski, USFS Research Division • **Wildland Fire Impacts on Ozone Concentrations** – Ned Nikoloff, USFS Research Contractor o *Impacts of Wildland & Prescribed Fire on Ozone Concentrations (report for USFS)*
1145	Lunch break - on your own
100	**Synthesis & Integration** • **Hybrid Modeling** – Bret Schichtel, NPS • **Reconciling CAMx-EOF Results at Rocky Mountain National Park** – Bill Malm, NPS
200	**Next Generation of WRAP Regional Modeling & Analysis Center** – Tom Moore
215	**Plenary - discussion and Q&A**
315	Next steps on 2008 WRAP technical and planning workshops and developing a 2009 workplan
330	Adjourn

2008 Technical Workshops Plan

January 2008
Monitoring & Data Analysis Workshop final agenda update of May 9, 2008 below
Update July 25, 2008

Background

The WRAP 2008-12 Strategic Plan calls for regional analysis efforts to move beyond and build upon existing regional haze analysis and planning efforts to a one-atmosphere approach which includes haze implementation, Ozone/PM NAAQS, mercury, and nitrogen deposition. This effort includes assessing and integrating policy changes related to energy development/production and climate change mitigation/adaptation occurring outside the air quality control and management arena. As requested by WRAP members, the fundamental goals are:

- As defined by WRAP members, broaden and deepen regional analysis and planning support capabilities to assist WRAP members;
- Adapt and refine the organization and process used to involve and encourage collaboration among organizations with interests in these air quality issues; and
- Develop data, information, and strategies needed by WRAP members to reduce air pollution and its impacts.

There are limited funds and staff time in 2008 to begin new technical and policy work, as regional haze plans are completed, sent to EPA, and review and approval of those plans begins. This document outlines technical and planning workshops to better identify and define existing and emerging air quality issues in the West, and assess existing regional data and analysis tools. These workshops would scope out the activities, people, and schedule beginning in 2009, to:

- Track, report, and conduct needed analyses of progress for regional haze;
- Determine regional contributions to Ozone and PM health and welfare standards' nonattainment issues at various scales;
- Understanding and analyzing the nature and causes of mercury, acid deposition, and critical loads in the West;
- Assess air quality changes from emissions management strategies and programs; and
- In concert with emerging efforts to manage and adapt to climate change, fully integrate data for both energy supply and use as well as greenhouse gas emissions into air quality analyses.

2008 Workshops' Overview

The 2008 workshops will provide opportunities to discuss regional analysis efforts in order to develop a detailed 2009 technical workplan, anticipating renewed WRAP funding in 2009. The workshops will:

- Assess the implementation status and future schedule (2009-12) of efforts on regional technical data collection and emission management strategies related to the regional haze SIPs/FIPs;
- For emerging Ozone and PM NAAQS issues, assess member needs for the:
  - next generation of the WRAP RMC - to provide photochemical and meteorological modeling studies;
  - priority for recommended EI improvement projects;
  - activities related to monitoring data collection and analysis;
  - development of additions and changes to TSS data displays;
  - coordination with state/sub-regional projects;
  - milestones and associated schedule to comply; and
  - necessary coordination and process steps to complete this work during 2009-12.
- For mercury and deposition issues, begin lower level-of-effort coordination and assessment efforts in conjunction with Ozone and PM efforts.

The 2008 workshop series will involve members of WRAP Committees, Forums, and Workgroups, as well as members of additional organizations not currently active in the regional haze effort to:

- Identify strengths and weaknesses of existing data and analysis tools;

- Determine uses and limitations of those data and tools;
- Develop coordination efforts needed with ongoing and planned State/Tribal/Federal projects;
- Discuss timing, effort, activities, and any needed changes in future projects by WRAP contractors
- Document results for work planning purposes & next steps

Three (3) workshops are proposed in 2008, to be scheduled to minimize time conflicts for WRAP members:

- Monitoring data analysis
- Emissions & Modeling
- Technical Data Needs for Air Quality Planning

Workshop on Monitoring & Data for Regional Analysis

This 2-day workshop, *completed May 15-16, 2008* will address monitoring methods, network operations, and data analysis activities for:

- Ozone, PM, haze, mercury, and deposition data
    - State/Tribal/Federal/ data availability
    - Methods – current and in development
    - Networks and operations
    - Analyses of impacts and sources
    - Results and trends
    - Collecting and analyzing monitoring data for regional analyses

Workshop on Regional Emissions & Air Quality Modeling Studies

This 2-day workshop, scheduled for *July 29-30, 2008* will address emissions and modeling studies related to:

- Ozone, PM, haze, mercury, and deposition
    - State/Tribal/Federal/private sector work
    - Data sources and completeness/comparability
    - Analyses of impacts and sources
    - Performance and applying results for air quality management and planning
    - Defining the next generation of photochemical and meteorological modeling analyses and services through a re-competed WRAP RMC to support State/Tribal/Federal needs

Workshop on Regional Support for Air Quality Planning in the West

This 2-day workshop, scheduled for *September 30 - October 1, 2008* will bring forward technical data and analysis capabilities from the earlier workshops to address 2009-12 air quality control and management planning needs for:

- Haze plan implementation – how/what to do
- Defining data, studies, and results needed for air quality planning - ozone, PM, mercury, and deposition
    - State/Tribal/Federal activities
    - Energy development and changing energy supply
    - Integrating climate change scenarios as inputs to assessing future air quality management
    - Types and levels of questions that can be answered from a regional point of view
    - Need to develop regional control programs/strategies
    - Timeline for air quality management and planning
    - Define data support systems' (VIEWS, EDMS, FETS, RMC) and decision support (TSS) services to support State/Tribal/Federal needs

Workshop on Monitoring & Data for Regional Analysis

Date/time: Thursday-Friday, May 15-16 (8-5 on Th, 8-2 on F) – *completed*
Material posted at: http://wrapair.org/forums/toc/meetings/080515m/

Location: Chandler, AZ – Crowne Plaza San Marcos Hotel

Purpose:

1) Address plans for conducting monitoring and applying those data for the 2009-12 time frame - monitoring methods, network operations, and data analysis activities;

2) Review completeness and gaps in ozone, PM, haze, mercury, and nitrogen deposition data

3) Identify opportunities for integrated applications of monitoring data:

   a. Tracking improvements in visibility/reductions in regional haze;
   b. Attainment status - analyses of source regions and areas violating health standards;
   c. Quantifying welfare/ecosystem impacts for remote/rural areas; and
   d. Needed analyses of impacts and sources.

4) Discuss needs, time frames, and costs for tracking and trends

5) Determine monitoring and analysis needs to support regional analyses

Results: Report with key deliverables and projects needed in 2009-12 timeframe – preparation and workshop support from WRAP staff and TSS project team

Thursday May 15th

800	Plenary - Welcome/Purpose/Introductions - overview of one-atmosphere approach of this workshop
830	**Monitoring in the West overview** – Bill Malm, National Park Service • What do we measure well? • What do we think we measure well and really do not? • What are not measuring, and what are important indicators to measure for air quality planning? • What are the opportunities for more coordinated monitoring efforts to address gaps/limitations?
1000	Break
1015	**Current Monitoring Activities & Networks in the Western United States** • Marc Pitchford, NOAA & IMPROVE Steering Committee chair • Bruce Louks, Idaho DEQ & WESTAR Monitoring Committee chair • Lewis McLeod, NTEC & WRAP Co-Director - Monitoring of air quality indicators - Ozone, PM, haze, mercury and nitrogen deposition, CO_2 - Meteorological monitoring – all sources - Aloft monitoring - Ozonesondes, satellites, other routine efforts - Reference document: Perspectives on Measurement Systems, Rich Scheffe, EPA OAQPS
1145	Lunch break - on your own

100	**Examples of data analysis work** • **IMPROVE Monitoring Data Representativeness Analysis for Tribal Lands** o **Phase I** - Mark Green, Desert Research Institute o **Phase II** – Dave DuBois, Desert Research Institute • **Ammonia Monitoring & Analysis in the Upper Green River Basin** – John Molenar, Air Resource Specialists • **Ozone Transport/Formation Analyses for Las Vegas & Boise** - Mark Green and Dave DuBois - Joint or single analysis of air quality indicators from one or more monitors - Ozone, PM, haze, mercury, and nitrogen deposition - Integration of air quality analysis with meteorological and climatological data - Integration of aloft monitoring data into analyses of ground-based station data - Source apportionment for determining air pollution controls
245	Break
300	**Using monitoring & data analysis methods to assess the NAAQS & Regional Haze in the West** • **Assessing Ozone NAAQS Attainment** – Tom Moore, WRAP • **Examples of Multi-Pollutant Visualization & Analysis in the VIEWS/TSS System** – Joe Adlhoch, ARS • **Characterizing PM and Urban Haze in the Phoenix Metropolitan Area** – AZ DEQ staff - Joint or single analysis of air quality indicators from one or more monitors - Ozone, PM, haze - Air quality analysis with meteorological, climatological, and aloft monitoring data into analyses of ground-based station pollution monitoring data
430	Plenary – WRAP-up and plans for next day's sessions
500	Adjourn for the day

Friday May 16th

800	Plenary – agenda review, goals for the day		
815	Breakout sessions #1 – discussion leaders in bold		
	Lewis McLeod *- integrating state, tribal, and federal monitoring needs with monitoring requirements – collection, sites, operations, reporting*	***Steve Arnold*** *- defining needed analyses of monitoring data to support regional air quality analysis and management efforts*	***Bob Palzer*** *- identifying applications of available regional monitoring data and analyses for other air pollution concerns*
930	Plenary – breakout session reports by discussion leaders		
1000	Break		
1015	Breakout sessions #2 – discussion leaders in bold		
	Marc Pitchford – defining the regional level of effort and projects are needed for ozone and PM NAAQS monitoring and data analysis 2009-12	***John Vimont*** – defining the regional level of effort and projects are needed for regional haze and critical loads monitoring and data analysis 2009-12	***Julie Simpson*** – defining the regional level of effort and projects are needed for monitoring and data analysis of fugitive sources and smoke impacts 2009-12
1115	Plenary – breakout session reports by discussion leaders		
1145	Lunch break - on your own		
100	Plenary – overall review findings of breakout sessions		
215	Next steps on 2008 WRAP technical and planning workshops and developing a 2009 workplan		
300	Adjourn		