

MASSACHUSETTS SIP STEERING COMMITTEE

Meeting Summary

April 29, 2008

In Attendance:

Rich Rothstein, Km Chng Environmental
Carl Spector, City of Boston
Richard Burkhart, EPA Region 1
Anna McGahan, Boston MPO
Paula Hamel, Dominion
Keith Beasley, Massport
Seth Pickering, ESS Group
Bill Palmer, EOTDW
Bob Machavere, RJ Associates
Shawn Konary, Mirant
John LeFebvre, Polaroid
Elli Reiser, STEP
John Quinn, MPC

Mass DEP Staff:

Eileen Hiney
Azin Kavian
Richard Fields
Patricio Silva
Kenneth Santlal
Steve Dennis
Aimee Powelka

Please note that all materials distributed or presented at the April 29, 2008 meeting are available at <http://www.mass.gov/dep/public/committee/daqcpu11.htm>.

New Ozone Standard (Rich Burkhart – slides)

On March 12, 2008, EPA significantly strengthened the National Ambient Air Quality Standard for ground-level ozone to reflect new scientific evidence about ozone and its effects on public health and the environment. Both the primary standard to protect public health and the secondary to protect public welfare and the environment were set at 0.075 parts per million (ppm). This standard is specified to the third decimal point and will retain the current design value format of the three-year average of the 4th highest 8-hour reading.

EPA will propose an implementation rule in fall 2008. Designation recommendations are due to EPA by March 12, 2009 and Massachusetts will likely be non-attainment statewide. Attainment SIPs will be due in 2013.

The number of exceedance days will increase with the lowered standard and exceedances may occur outside of the current April through September ozone-monitoring season.

Ozone Season Forecasting (Rich Fields – slides)

The Air Quality Index (AQI) has been updated to reflect the new ozone standard and MassDEP is already using the new standard and the updated AQI for its ozone forecasts. There will be an increase in the number of days that air quality will be in the “unhealthy for sensitive groups” (orange) and “unhealthy” (red) categories under the new standard; Rich illustrated this increase using 2007 ozone season data. Massachusetts has already had three days with exceedances of the new standard in April 2008.

Update on 8-hour Ozone and Transport SIPs

MassDEP held public hearings on the Ozone Attainment, RACT and Transport SIPs on January 18, 2008. EPA and four industry representatives commented on the RACT SIP. MassDEP concluded in the RACT SIP that no additional controls for the RACT category of Industrial, Commercial and Institutional (ICI) boilers are required. Industry supported this position. As anticipated, EPA commented that the OTC recommended tighter controls for this category.

EPA commented that while the Ozone Attainment SIP modeling demonstrates that Massachusetts will attain in 2009, because actual monitored readings in 2006 and 2007 were high, it is unlikely that Massachusetts will be able to demonstrate attainment based on 2006 – 2008 monitored readings. EPA submitted an unexpected comment regarding the attainment modeling requesting additional information concerning the assumptions used in the regional CMAQ modeling related to emissions from electric generating units.

MassDEP submitted the final Ozone Attainment and Transport SIPs and its Response to Comments to EPA on January 31, 2008. (These documents can be viewed at <http://www.mass.gov/dep/air/priorities/sip.htm>)

Mercury – Court Decision and MassDEP 7.29 Regulation (Eileen Hiney)

A federal court decision in March vacated EPA's Clean Air Mercury Rule (CAMR) and eliminated all related 40 CFR Part 75 mercury monitoring quality assurance and testing methods. MassDEP's power plant regulation, 310 CMR 7.29, requires that the regulated power plants use Part 75 quality assurance and testing methods to demonstrate compliance with 7.29 mercury emission limits. To insure continued compliance with 7.29, MassDEP intends to make these Part 75 Hg requirements part of the 7.29 regulatory scheme. It has hired a consultant to assist with drafting the amendments to existing state regulations to replace the vacated Part 75 Hg provisions.

Lead NAAQS Review (Aimee Powelka - slides)

On May 1, 2008, EPA will issue a Notice of Proposed Rulemaking proposing a new standard. The proposal is expected to also address monitoring and implementation issues. NESCAUM's Air Toxics and Public Health Committee met recently to review health and implementation issues related to the anticipated new standard.

EPA issued the current lead NAAQS of 1.5 $\mu\text{g}/\text{m}^3$ averaged over a calendar quarter in 1978. Levels of lead in the ambient air have dropped significantly since then, largely due to the ban on lead in gasoline. Because significant health effects can result from exposure to even low levels of lead, both the EPA Staff Paper and the Clean Air Scientific Advisory Committee (CASAC) support the view that the current standard is not adequate to protect public health. The analysis of health impacts has been focused on the impacts of lead exposure on IQ levels and the public health impacts of a population-wide small decrease in IQ levels. CASAC recommended that the standard be set at not more than 0.2 $\mu\text{g}/\text{m}^3$ with monthly averaging to ensure that 95% or more of U.S. children do not experience decreased IQ from exposure to ambient concentrations of recent airborne lead.

The monitoring network for lead is inadequate and EPA's proposal will likely include new monitoring requirements. The only lead monitor in the Region 1 states is in Boston; it has recorded a monthly maximum lead concentration of 0.03 $\mu\text{g}/\text{m}^3$ for the last 5 years. NESCAUM will develop comments on the proposed rule.

PM_{2.5} Significant Impact Levels for Permitting (Steve Dennis – slides)

MassDEP regulations require that when issuing an air quality plan approval (permit) for a proposed new facility, or a proposed modification to an existing facility, MassDEP must insure that a facility's emissions will not result in air quality exceeding a NAAQS. The EPA has not yet released modeling guidance for permitting sources with PM_{2.5} emissions. PM_{2.5} issues which MassDEP needs to address when reviewing a permit application include whether to require inclusion of condensable particles (in addition to filterable particles) in the assessment, Significant Impact Levels (a SIL is a de minimus pollutant concentration - if modeled emissions are at or below a SIL, the facility has demonstrated NAAQS compliance), and how to model emissions.

In the absence of EPA guidance, in July 2007 MassDEP issued guidance for facilities to use in assessing their PM_{2.5} emissions. Since then, a number of issues have arisen as plan applications have been reviewed and MassDEP expects to revise that guidance. While the revisions have not been finalized, at present MassDEP is considering revised guidance that will:

- propose to include direct filterable and condensable limits for PM_{2.5}, (but not secondary PM_{2.5} emissions);
- propose to use the NESCAUM Modeling Committee December 2006 recommended 24-hour SIL of 2.0 ug/m³ and an annual average SIL of 0.3 ug/m³, until EPA adopts SILs for PM_{2.5};
- propose modeling guidance for selecting nearby sources as part of background air quality levels.

Asphalt Paving Regulation May 1 Stakeholder Meeting (Eileen Hiney - slides)

The Ozone Transport Commission (OTC) through its regional 8-hour ozone attainment planning effort, identified asphalt paving as a category where further VOC emission reductions could be achieved. The OTC developed a model rule that prohibits the use of cutback asphalt during the ozone season and limits the VOC content of emulsified asphalts used during the ozone season. In its ozone attainment and RACT SIPs, MassDEP included a commitment to propose amendments to MassDEP's asphalt paving regulation, 310 CMR 7.18(9)

Asphalt paving is grouped into three general categories: hotmix, cutback, and emulsified. Hot-mix asphalt, the most commonly used paving asphalt, produces minimal VOC emissions. Cutback asphalt is prepared by blending asphalt cement with a diluent, typically from 25 to 45 percent by volume of petroleum distillates. Emulsified asphalt is a lower emitting alternative to cutback asphalt; emulsified asphalts use a blend of asphalt cement, water and an emulsifying agent, such as soap. Some emulsified asphalts may contain virtually no VOCs; others may contain up to 12% VOC by volume.

MassDEP's existing regulation bans the use of cutback asphalt during the ozone season, but with a number of exceptions. It does not address emulsified asphalt. MassDEP will propose to eliminate all exceptions to the ozone-season ban on use of cutback. It will also propose to limit the VOC content of emulsified asphalt to the level proposed in the OTC model rule, or to such other level as is determined to be feasible in Massachusetts. A stakeholders meeting will be held on May 1, 2008 at 2 pm in Worcester to discuss anticipated revisions to the existing regulation.

Next SIP SC Meeting: Thursday, July 31, 2008 at 10:00 a.m.

A Handout from Wig Zamore

Figures 5 and 6 below from Cook 2008 JAWMA Resolving local scale emissions for modeling air quality near roadways show annual average concentrations of two pollutants for New Haven, on a 200 meter grid, derived in part from analysis of roadway link-based data in the regional Travel Demand Model (CDOT). Benzene is representative of air toxics and carbon monoxide is representative of criteria pollutants. Both are influenced by mobile sources. Downtown is the small single spike in the middle. The highest spike is the port. The very high peaks all arranged in several lines are? ... You guessed it ... regional highways!

Cook et al.

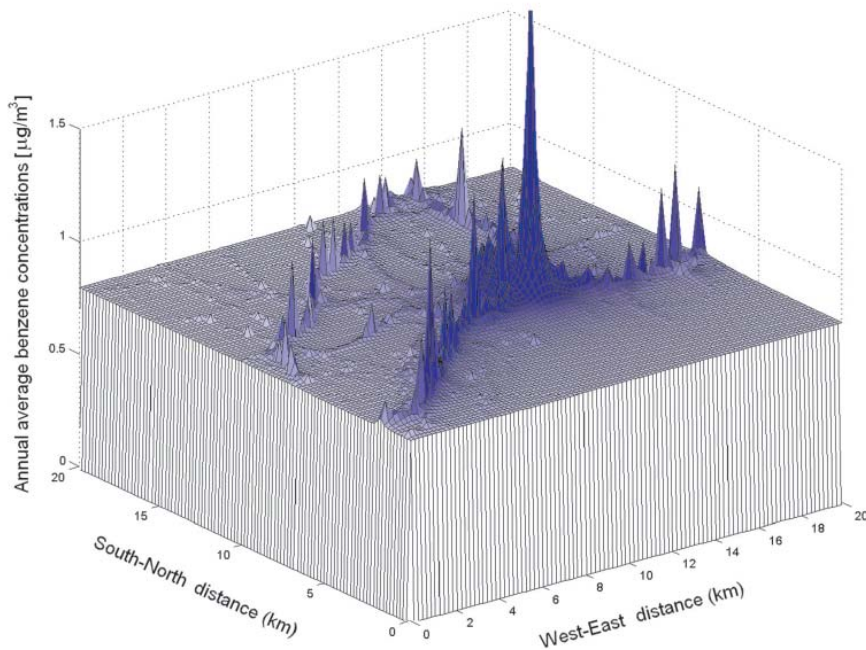


Figure 5. Spatial distribution of modeled annual average benzene concentrations in New Haven, CT.

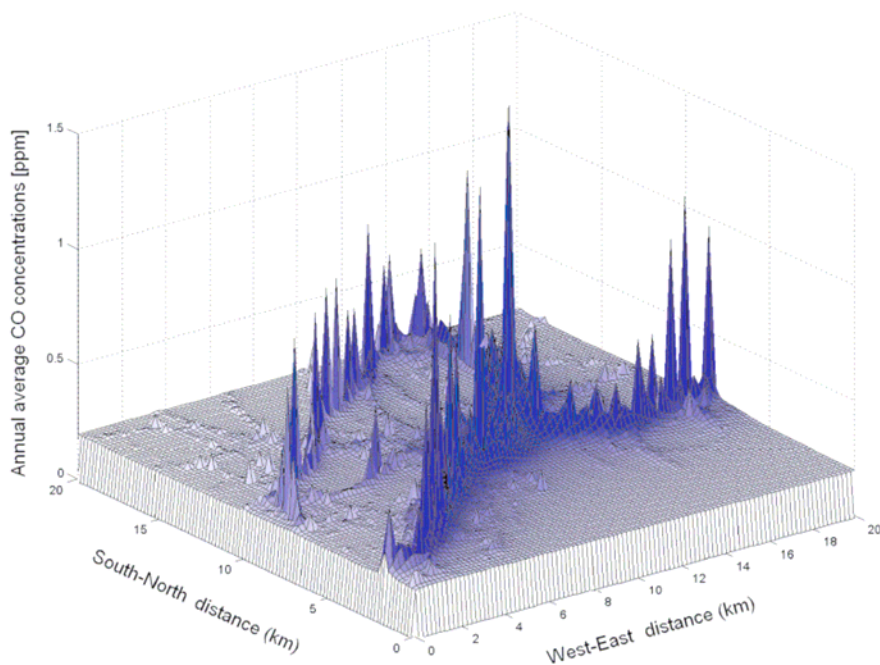


Figure 6. Spatial distribution of modeled annual average CO concentrations in New Haven, CT.