

MASSACHUSETTS SIP STEERING COMMITTEE

Meeting Summary

July 16, 2009

In Attendance:

Rich Rothstein, Km Chng Environmental
Ian Cohen, EPA Region 1
Susan Lancey, EPA Region 1
Rich Burkhart, EPA Region 1
Shawn Konary, Mirant
Keith Beasley, Massport
Peter Romano, IOMA
Robert Ruddock, AIM
Scott Keys, American Lung Association
John LeFebvre, Gen Power
John Lienhard, MIT
Carl Spector, City of Boston

Bob Machaver, RJ Associates

MassDEP Staff:

Eileen Hiney
Lee Dillard Adams
Azin Kavian
Kenneth Santlal
Patricio Silva
Aimee Powelka

Please note that all materials distributed or presented at the July 16, 2009 meeting are available at <http://www.mass.gov/dep/public/committee/daqcpu11.htm>.

National Air Toxics Assessment (*Susan Lancey - presentation*)

The 2002 National Air Toxics Assessment (NATA) was released by EPA on June 24, 2009. NATA is a nation-wide assessment, with a census tract resolution, of the public health risks associated with inhalation of toxics in the ambient air. It helps EPA and the states identify pollutants and source categories of greatest concern, set priorities for the collection of emissions inventory data, and improve understanding of the risk from air toxics (also called hazardous air pollutants or HAPs). The 2002 NATA estimates the cancer and noncancer risks for 124 of the 180 HAPs, plus diesel particulate matter. NATA evaluates inhalation risks only from outdoor air sources; no indoor air exposures are considered. Additionally, the results apply to broad geographic regions, not specific locations. NATA uses modeling to approximate ambient air concentrations, human exposure, and health risk estimation. The modeled HAP concentrations, based upon emissions inventories, correlate better with the monitored concentrations of some HAPs than others.

The 2002 NATA indicates that the average U.S. lifetime cancer risk from air toxics is 36 per million; in Massachusetts, it is 40 per million. Benzene is the highest risk carcinogen; mobile sources are the largest emitters of benzene. The highest non-cancer risk in Massachusetts is the respiratory risk from acrolein, which is emitted by combustion sources including power plants, wood stoves, fireplaces, and mobile sources. The air toxics of greatest concern in New England and Massachusetts are:

- acetaldehyde, acrolein, benzene, 1,3-butadiene, and diesel particulate matter emitted by mobile sources,
- carbon tetrachloride from background sources (transport), and
- acetaldehyde, acrolein, arsenic compounds, chromium compounds, naphthalene, and polycyclic organic matter (POM) emitted by stationary point and area combustion sources, including power plants (EGUs), industrial boilers, municipal waste incinerators, and residential wood stoves and fireplaces.

EPA Region 1 has compiled information regarding these top ten air toxics, including maps of the ambient air concentrations, maps of cancer or noncancer risks, 2002 emission inventory data, and source category.

Additionally, Region 1 has graphed the actual monitored concentrations of several of these air toxics. This information can be found at: <http://www.epa.gov/region01/eco/airtox/>

Proposed Revised NO₂ NAAQS (*Ian Cohen - presentation*)

On June 26, 2009 EPA proposed to strengthen the primary NAAQS for NO₂ to increase protection of public health. The existing NO₂ standard is an annual average of 53 parts per billion (ppb). EPA is proposing to: 1) add a **1-hour** NO₂ standard at a level between 80-100 ppb; and 2) retain an **annual** average NO₂ standard at a level of 53 ppb. EPA is also proposing the form of the new 1-hour NO₂ standard be a 3-year average of either the 4th highest daily maximum 1-hour average concentration in a year, or the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations.

Current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with an array of adverse respiratory effects including increased asthma symptoms, worsened control of asthma, and an increase in respiratory illnesses and symptoms, as well as increased visits to emergency departments and hospital admissions for respiratory illnesses.

NO₂ concentrations in vehicles and on or near major roads are appreciably higher than those measured at monitors in the current network. EPA is also therefore proposing changes to the NO₂ air quality monitoring network to include monitors to measure peak, short-term concentrations to support the proposed 1-hour standard - typically near major roads in urban areas, and the highest concentrations of NO₂ that occur over wider areas. For Massachusetts, the proposed new monitoring requirements would require 2 near-road and 1 community-wide monitor in the Boston area, 1 near-road monitor in the Springfield area, and 1 near-road monitor in the Worcester area. Monitored NO₂ concentrations from existing, community-wide monitors indicate that Massachusetts is likely to be in attainment of the proposed 1-hour NO₂ standard; however Massachusetts does not have data to evaluate near-road NO₂ concentrations.

2008 Ozone NAAQS

- **Ozone Season Update** (*Eileen Hiney - presentation*)

The cool, rainy spring and summer has resulted in very low ozone concentrations so far this year. The 2009 ozone season is a crucial one for purposes of determining attainment of the 1997 ozone standard. In the Massachusetts Ozone Attainment SIP, MassDEP projected that by 2009, Eastern MA would attain the standard based on the 3-year average of the 4th highest monitored ozone concentration. Western MA was not expected to attain by 2009. Eastern MA monitored readings for the 2006-2008 periods met the standard and readings for the 2007-2009 periods are likely to meet the standard. Western MA did not attain for the 2006-2008 period, but given the low readings so far this summer, Western MA may attain for the 2007-2009 period.

- **OTC Regional Attainment Planning Update** (*Eileen Hiney*)

The Ozone Transport Commission met on June 10, 2009 to discuss the regional ozone attainment planning process with the member states and stakeholders. Through various OTC subcommittees, the states continue to wrestle with various issues related to emissions inventories, modeling, and potential control strategies related to the 2008 ozone attainment SIPs, which the states must submit to EPA in 2013.

- **High Energy Demand Days** (*Patricio Silva - presentation*)

The OTC Modeling Committee workgroup is developing regional modeling to more accurately reflect EGU NO_x emissions on high electric demand days (HEDD), which tend to correspond with high-ozone days. Massachusetts is participating in the identification, modeling, and benefits assessments for emissions controls for HEDD units. HEDD units include both major EGUs and distributed generation units. Peaking units (that only operate during periods of peak electricity demand) and load-following boilers (which adjust their power

output as demand for electricity fluctuates throughout the day) contribute significantly to total NO_x HEDD emissions, with higher NO_x mass contributions from HEDD load-following EGUs than baseload EGUs. Infrequently operated HEDD units typically have higher hourly NO_x emission rates. Both the source of peak day NO_x emissions and the fuel used by a majority of HEDD units vary across the Ozone Transport Region.

MA Global Warming Solutions Act (Lee Dillard Adams – handout)

In 2008, the Massachusetts legislature passed the Global Warming Solutions Act (GWSA). This act required: 1) the mandatory reporting of greenhouse gas (GHG) emissions, 2) a statewide inventory and tracking of GHG emissions, 3) development of a 1990 GHG baseline and 2020 business as usual projection, and 4) development of plans to set and achieve GHG reduction targets for 2020, 2030, and 2040 to meet the commitment of 80% reduction by 2050. It also formed two advisory committees: the Climate Protection and Green Economy (CPGE) Advisory Committee and the Climate Change Adaptation Advisory Committee.

MassDEP recently promulgated regulations to establish mandatory GHG reporting and established a 1990 baseline and 2020 business as usual projection. The following deadlines apply to the development of GHG reduction targets and plans: a final 2020 plan by 1/1/2011 with related regulations final by 1/1/2012 and effective as of 1/1/2013. Development of the 2020 GHG Reduction plan is under way, with twelve workgroups and representatives from many Massachusetts state agencies, including DEP, DPU, DOER, DOT, and HED. The workgroups include:

- Development patterns and travel behavior
- Materials and waste management
- Transportation vehicle efficiency
- Buildings energy efficiency
- Industrial energy efficiency
- Low-carbon fuel supply
- Energy sector GHG sequestration
- Industrial process emissions (non-energy)
- Agricultural emissions
- Forests and land-use change
- Economy-wide price of carbon
- Modeling/analytic support

General public meetings to support these workgroups will occur in fall of 2009; public meetings to support the proposed 2020 reduction targets and plan will occur in spring/summer of 2010.

Meetings of the advisory committees will occur as follows:

CPGE Advisory Committee: Sep. 16, 2009, Dec. 9, 2009, March 24, 2010

Adaptation Advisory Committee: Sep. 9, 2009, Oct. 20, 2009

Please confirm via the DEP website before attending.

Next SIP Steering Committee Meeting: Thursday, October 28, 2009 at 10:00 a.m.