

AGENDA
AIR QUALITY ADVISORY COMMITTEE*
TUESDAY September 24, 2013
10:00 a.m. - 12:00 noon
East-West Gateway Board Room

- I. Call to Order**
 - Michael Coulson, Chair, East-West Gateway Council of Governments
 - A. Minutes of July 30, 2013 Meeting

- II. OneSTL: Update on the Plan**
 - David Wilson, East-West Gateway Council of Governments

- III. Missouri Air Quality Planning Activities and Air Quality Issues of Interest**
 - Wendy Vit, Missouri Department of Natural Resources

- IV. American Fuel Group Report**
 - St. Louis Regional Clean Cities Program

- V. Update Activities of the States**
 - Illinois Environmental Protection Agency
 - Missouri Department of Natural Resources

- VI. Other Business** - Next meeting date October 29, 2013

- VII. Adjournment**

*Please note that this meeting will serve as a part of the Inter-Agency Consultation Process as detailed in the Missouri Transportation Conformity SIP.

MINUTES
AIR QUALITY ADVISORY COMMITTEE
Tuesday, July 30, 2013
East-West Gateway Board Room

Members Present:

Michael Coulson, Chair, East-West Gateway Council of Governments
Joe Winkelmann - Missouri Department of Natural Resources
Mike Henderson - Missouri Department of Transportation
Mike Zlatic - St. Louis County Health Department
Betsy Tracy - Federal Highway Administration, IL
Christopher Schmidt - Illinois Department of Transportation
Susannah Fuchs - American Lung Association
Jack Fishman - St. Louis University
Ryan Tilley - St. Charles County Health Department
David Bloomberg - Illinois Environmental Protection Agency (telephone)

Others Present:

Jim Stack - Illinois Department of Transportation, District 8
Joe Gray - Illinois Department of Transportation, District 8
Amy Funk - Metro East Community Air Project
Bob Klepper - Missouri Coalition for the Environment
Mark Leath - Missouri Department of Natural Resources
Mark Hildebrandt - Southern Illinois University Edwardsville
Crystal Converse - St. Louis Regional Clean Cities
Amy Bhesania - U.S. Environmental Protection Agency Region 7 (telephone)
Illinois Environmental Protection Agency (2 by telephone)

Staff:

David Wilson Carol Lawrence

- I. Call to Order
 - Michael Coulson, Chair, East-West Gateway Council of Governments

The meeting of the Air Quality Advisory Committee (AQAC) was called to order by Chair Michael Coulson, East-West Gateway Council of Governments (EWGCOG). The minutes of the June 25, 2013 AQAC meeting were approved as circulated. AQAC participants then introduced themselves.

The new U.S. Environmental Protection Agency (USEPA) Administrator, Gina McCarthy, is making her first policy address today at Harvard Law School. She had been in the USEPA Air Program. The speech will be web cast and archived. Ms. Bhesania, USEPA Region 7, said that the Administrator has a states background and understands the concerns of states and local agencies.

II. Boundary Designation for the 2012 Annual PM_{2.5} National Ambient Air Quality Standards - Mark Leath, Missouri Department of Natural Resources

PM_{2.5} consists of particles with aerodynamic diameter less than or equal to 2.5 micrometers. Dozens of different chemical species comprise PM_{2.5}. PM_{2.5} can be emitted directly (primary) or formed through chemical reactions in the atmosphere (secondary). Primary PM_{2.5} emissions have a localized impact on PM_{2.5} concentrations but as get further away from source concentration become dispersed and settle out of the air. Secondary PM_{2.5} is the result of photochemical reaction in atmosphere when precursor emissions like sulfur dioxide, nitrogen oxide and gaseous hydrocarbons react and form microscopic sulfate, nitrate and other organic particles.

In December 2012 USEPA revised the annual fine particle (PM_{2.5}) National Ambient Air Quality Standards (NAAQS) to 12 micrograms per cubic meter (ug/m³) down from 15 ug/m³. The first step in the implementation of this standard is to define the attainment/non-attainment areas in the state. A non-attainment area does not meet the standard based on monitor data for that area. If a surrounding area is determined to contribute to a violation it can be included in the non-attainment area. When the standard was promulgated in 2012 it set a one year time period for the states to assemble and submit their boundary recommendations to USEPA.

In April 2013 USEPA issued boundary designation guidelines. For this standard there is no presumptive boundary for a non-attainment area such as a Metropolitan Statistical Area (MSA) or a Core Based Statistical Area (CBSA). States can look at everything on a case-by-case basis. The guidance describes how to perform weight of evidence approach to define a non-attainment area. The following five criteria are to be considered: air quality (monitoring) data; emissions and emissions-related data; meteorology; geography/topography; and jurisdictional boundaries.

The first step in developing boundary recommendations is to look at ambient air monitoring data. Based on 2010-2012 data, all five ambient PM_{2.5} monitors located in Missouri portion of St. Louis MSA are complying with the 2012 standard. However, two of the four Illinois monitors, Granite City and East St. Louis, in the Illinois portion of the St. Louis MSA have design values exceeding the 2012 PM_{2.5} standard and are violating the standard. Missouri will need to determine if there are nearby sources in Missouri which are contributing to a violation at those monitors. Background annual average PM_{2.5} concentrations across Missouri and in St. Louis range from 9.5 - 10.5 ug/m³. It does not take much of a contribution from urban activities to have a monitoring reading above 12 ug/m³. Once the 2013 data is factored into the design value calculations, it is possible that the East St. Louis monitor could be in attainment. In 2000 the annual PM_{2.5} average concentration was 16 ug/m³. Over time different federal control programs have been put in place and by 2012 the annual average concentration was around 11.5 ug/m³.

It is important to know the different chemical species comprising PM_{2.5} in St. Louis. USEPA has developed a speciation data analysis process in which speciated data is assembled into five categories: sulfate; nitrate; organic carbon; elemental carbon; and crustal. Speciation data is available for the Blair Street (St. Louis), Granite City Medical (IL) and Mingo National Wildlife Refuge (background level) monitors. The sulfate contribution is about the same at all monitors. Sulfates are

a significant category but are not likely to be from local sources. They tend to occur because of long range transportation from upwind states. There is more of an urban contribution for nitrate. Nitrates form a little more readily from sources in urban areas, especially in cooler months. Organic carbon can have primary (combustion-related activities) and secondary species (photochemical reaction). Primary particles can have an immediate local impact on air quality but may not be observed at a long distance from its source. Organic carbon level at the Granite City site is much higher than Blair Street and Mingo. When levels from Blair Street and Mingo are compared, Blair Street does have some urban contribution. Elemental carbon is uncombusted carbon from diesel exhaust or burning of fossil fuels and is not that significant. The crustal category includes other direct PM_{2.5} categories including oxides of metal, wind blown soil or other materials. Crustal concentration at Granite City (iron) is the highest with Mingo (silicon from agricultural activities) second.

Another step in the air quality monitoring data analysis is to select 15-20 days of high daily PM_{2.5} concentrations from the Granite City and East St. Louis monitors and compare concentrations at Blair Street monitor. Blair Street site is within three to four miles of them. The daily concentration at Blair Street monitor was found to be considerably lower than the two Illinois sites. MoDNR is also taking into consideration the readings from the Granite City monitor before and after the temporary shutdown of US Steel Granite City Works in 2009.

Another criteria to consider is emissions. In the 16 county St. Louis MSA, the majority of emissions is from St. Louis area. However, because emission sources are here is not enough to say definitely that they are causing the elevated emission levels. It is important to consider the location of sources but not enough to define a non-attainment area. The location of major point sources (more than 100 tons per year of indirect precursor emissions or direct PM_{2.5} emissions) has been identified. Location of sources and meteorological data can be used to estimate where emissions are coming from on high concentration and low concentration days. For the Granite City monitor, two major sources (US Steel and Gateway Energy Coke plant) are within one mile of it. There are several PM_{2.5} sources to the southeast and southwest of the East St. Louis monitor.

Analysis of meteorological data will focus on selected high episode and low episode days at the two violating monitors in Illinois. Wind rose data (speed and direction) from the St. Louis Downtown Airport in Cahokia will be analyzed. On high episode days, wind speed are relatively calm, holding emissions in the area. On low episode days there are higher wind speeds. On high episode days at Granite City, primary wind direction is from southeast, not from Missouri.

Other items to be considered include: geography/topography; jurisdictional boundaries; and emissions-related data such as vehicle miles traveled and population. Missouri has no authority to control Illinois sources and vice versa. MoDNR will evaluate existing and additional future (if designated as non-attainment) controls in the Missouri portion of the St. Louis MSA. Phase II of the Clean Air Interstate Rule (CAIR) begins in 2015 and will result in major reductions. CAIR is required for every Maximum Available Control Technology (MACT) rule established by USEPA. Federal Utility Mercury and Air Toxics standards (MATS) are designed to control air toxics emissions from power plants. In the Missouri portion of the St. Louis MSA, four electric generating units (EGUs) are subject to both CAIR II and the Utility MATS. They are: Ameren Meramec;

Ameren Sioux; Ameren Labadie; and Ameren Rush Island. These EGUs account for 63 percent, 57 percent and 76 percent of all Illinois/Missouri point source emissions for nitrogen oxide, PM_{2.5} and sulfur dioxide respectively. The compliance date for the federal Boiler MACT is January 2016. Boiler MACT is designed to control air toxics but there is also direct PM_{2.5} and volatile organic compounds benefits. There are 23 facilities in the Missouri portion of the St. Louis MSA with 155 emission units subject to this rule. Mobile source emission controls in place continue to lower emissions. Controls include: reformulated gasoline program; inspection and maintenance program; Stage I refueling requirements at service stations; Federal Emission Standards for on-road and off-road engines; and continued phase out/retirement of older, higher polluting engines/vehicles.

The weight of evidence analysis must take all data into consideration to determine appropriate non-attainment area boundaries. Missouri will be coordinating and sharing information with the Illinois Environmental Protection Agency (Illinois EPA) and USEPA while data analysis continues. Public involvement is encouraged throughout this process. MoDNR will post proposed recommendations on their web site for 30 day public comment on September 30. MoDNR will then present the proposed recommendations at a Missouri Air Conservation Commission (MACC) public hearing in October. The MACC is to adopt the recommendations in December. The state's boundary recommendations will then be submitted to USEPA. USEPA has the final say on non-attainment designations. USEPA will review the recommendations and in August 2014 issue a letter informing each state whether USEPA agrees with or is proposing changes to the boundary recommendations. The state then has 120 days (until October 2014) to provide additional information supporting their December 2013 recommendations. USEPA will then consider the additional information and promulgate the designations by December 12, 2014. Non-attainment area State Implementation Plans (SIPs) with reasonable further progress and attainment demonstration components will be due to USEPA in June 2015.

Ms. Funk, Metro East Community Air Project (MECAP), asked about the Illinois designation schedule. Mr. Bloomberg, Illinois EPA, said that they will be doing outreach and asking for public comment probably starting some time in October.

Mr. Klepper, Missouri Coalition for the Environment, observed that the discussion about PM_{2.5} sources on the MoDNR web site identifies dust as a major source but the speciation data shown today did not. Mr. Leath, MoDNR, said that dust is associated with paved and unpaved roads and agricultural tilling. Dust falls out of the atmosphere and settles a short distance away from its sources. Urban areas like St. Louis are not going to be affected by those type of sources.

Mr. Coulson, EWG, said that if the whole area is designated non-attainment and have to prepare SIP, it seems that with all the controls have in place the area would still be on the way to making attainment. Mr. Leath, MoDNR, said that when the standard was finalized, USEPA said that they are assuming that because of the federal controls, every area, except for some in California, is expected to attain the standard. A consideration for Missouri is does it make sense to recommend non-attainment and perform an attainment modeling demonstration, costing a quarter to half million dollars photochemical modeling effort. This discussion will be included in the recommendation document to USEPA.

Mr. Tilley, St. Charles County, asked if the scrubbers installed at the four Ameren plant are expected to help reduce PM_{2.5}. Mr. Leath, MoDNR, said that the scrubber installed at the end of 2010 at the Sioux plant in St. Charles County has reduced SO₂ emissions between 35,000-40,000 tons per year. Other controls are being installed across the nation and long range transport/background levels are going down. Sulfates are a major component of PM_{2.5} so anytime reduce sulfate levels it is important.

Mr. Wilson, EWG, asked what is the best way to describe the condition of the St. Louis region relating to PM_{2.5} at this time. Mr. Leath, MoDNR, said that the trend is downward but that anytime monitors are not in compliance with the standard there is the risk of public health disbenefit. Area is still designated as non-attainment for the 1997 PM_{2.5} standard but has received a clean data determination from USEPA based on monitoring data. Ms. Bhesania, USEPA Region 7, said that USEPA made final determination in 2012 and the annual PM_{2.5} standard has been lowered. She added that it could be said that the St. Louis area is violating the 2012 standard but is in compliance with the level set in the 1997 standard. Mr. Wilson, EWG, observed how difficult this is to explain this to the general public.

III. NASA's Studies of Emissions and Atmospheric Composition, Clouds and Climate Coupling by Regional Surveys: The St. Louis Connection
Jack Fishman, Ph.D., St. Louis University

NASA had planned to conduct in 2013 a Studies of Emission and Atmospheric Composition, Clouds and Climate Coupling by Regional Surveys (SEAC⁴RS) project in Thailand. Such a mission, using satellites and aircraft equipped with sophisticated data collection equipment, can take four to five years to plan out. Information from daily flights of NASA aircraft will be coordinated with data obtained from passes of six NASA satellites to achieve the mission's science objectives. However, in 2012 the State Department determined that SEAC⁴RS in Thailand could not go forward because it might appear that the U.S. was using the guise of NASA to spy on North Korea or China. Over the last year NASA assembled new objectives for a study area in the central U.S. SEAC⁴RS is being coordinated with other NASA projects underway in the U.S.

In support of SEAC⁴RS, during August-September St. Louis University (SLU) and five other ozone stations will launch ozonesondes to provide a synoptic 3-D picture of what the atmosphere looks like on the SEAC⁴RS flight days. The aim is to understand what the satellite sees in coordination with what is observed at the surface. An ozonesonde is a balloon with a three to four pound instrument package (ozone sensor and meteorological instruments) that transmits information in real time during the balloon's ascent up to 31 kilometers and descent (after the balloon pops). The ozonesondes will be launched from Forest Park near the McDonnell Planetarium. Each package has mailing instructions and a label. There is a \$30 reward for mailing the equipment package back to SLU. SLU and the Science Center are preparing a news release and a letter but need assistance in contacting local law enforcement.

Mr. Coulson, EWG, suggested that the St. Louis Regional Response System (STARRS) at EWG may be able to help. Ms. Fuchs, American Lung Association (ALA), said that she would contact the

KMOV meteorologist who works with the St. Louis Regional Clean Air Partnership (SLRCAP) about the ozonesondes.

IV. Current Activities of Metro East Community Air Project
- Amy Funk, Metro East Community Air Project

The Metro East Community Air Project (MECAP) is part of the Action Illinois Program through the University of Illinois. Funding for MECAP was the result of a settlement between Holcim and the environmental community. MECAP aims to promote community-based efforts to address air pollution and health through community engagement, education programs and air monitoring research.

MECAP participates in community events, gives presentations to a wide range of groups and students, coordinates outreach campaigns, distributes information and maintains a website. Recently, MECAP partnered with RideFinders and Madison County Transit on a bookmark contest for school children. Over 300 entries were received. The contest is a way to engage students and discuss impact of air pollution on health and how to improve air quality. The winner of the Madison County bookmark contest was announced at the yearly Madison County Earth Flag meeting for students, teachers and administrators. At this meeting awards are presented for recycling and other sustainable activities at schools. As part of the St. Clair County Health Department's We Chose Health program, MECAP partnered with the Health Department on a bookmark contest for students in St. Clair County with 1,300 entries. When MECAP and the Health Department went to the winner's elementary school to present the award, they found that the whole school had assembled to see the presentation and learn about air quality and public health.

MECAP and the St. Louis Regional Clean Air Partnership (SLRCAP) are working with Belleville East High School students and elementary school students on a campaign to bring attention to no-idling at their schools. They are giving out larger bookmarks with tips and information on no-idling. These bookmarks can be distributed to students, parents and staff and pledge forms. Ms. Fuchs, ALA, said that SLRCAP is doing a similar program in Missouri and that the bookmarks can be customized with the name of a specific school. In addition, free no-idling signs are available. Sustainability Madison County and MECAP are working on a greenhouse gas inventory. MECAP also provides air quality information to the Southwestern Illinois Asthma Coalition.

This Fall, MECAP and a student from the George Warren Brown School of Social Work at Washington University will be carrying out a project selected for the USEPA Toxic Release Inventory (TRI) University Challenge. The project will analyze and map TRI data alongside locally relevant health and demographic information. The aim is to use TRI information to increase community awareness of air quality in the St. Louis metropolitan area. MECAP and Southern Illinois University Edwardsville (SIUE) are working on an ozone monitoring project. MECAP is assisting SLU in establishing an ozone garden at the Belleville campus of Southwestern Illinois College. MECAP and USEPA Region 5 are also participating in a joint USEPA project evaluating different monitoring technologies.

The third Metro East Air and Health Forum will be on October 18 at the Caseyville IL Community Center. The focus will be on asthma as a community health issue. The keynote speaker will be Dr. William Kincaid of St. Louis University. Air pollution today is better than it was 20-30 years ago but there has been an increase in asthma sensitive populations. Mr. Zlatic, St. Louis County, said that he has worked with Dr. Kincaid on the County's Healthy Homes program. He observed that indoor air is much more polluted than outdoor air and this is where people spend more time and that may be driving the asthma issue. Ms. Funk, MECAP, agreed that can not have a discussion on asthma without addressing indoor air quality.

V. American Fuel Group Report
- Crystal Converse, St. Louis Regional Clean Cities Program

The St. Louis Regional Clean Cities program (SLCC) is part of the four state Mid-America Collaborative for Alternative Fuel Implementation. One project is to develop a modeling methodology to evaluate the air quality impact of alternative fuel vehicles under different scenarios. This methodology could be made available to planning and air agencies. The Collaborative is in the process of evaluating the proposals received to carry out this effort. SLCC has submitted two \$500,000 research proposals to the Maritime Administration of the U.S. Department of Transportation. These studies would evaluate the benefits of the use of methane gas from landfills and coal beds in powering two Mississippi River tug boats already been converted to use LNG or CNG. Purpose is show how cleaner burning methane could be used as a maritime fuel in other inland ports and waterways of the U.S. At the last AQAC concerns were expressed about the use of coal bed methane as a fuel. This is already occurring. On October 24, SLCC will hold an Alternative Fuel Expo at Gateway Motorsports Park in Madison IL. There will be a panel of experts and the opportunity for ride and drive with a wide selection of alternative fuel vehicles.

VI Update Activities of the States
- Joe Winkelmann - Missouri Department of Natural Resources

MoDNR's Air Pollution Control Program is preparing comments on USEPA's proposed ozone implementation rule for the 2008 eight-hour ozone standard. USEPA released the proposed rule in June. The deadline for comments has been extended to early September. MoDNR would like to see some specificity from USEPA on how to address the unique nature of the St. Louis region, especially the Missouri side. The St. Louis non-attainment area is composed of two states. Illinois has an approved Maintenance Plan for the 1997 eight-hour ozone standard. and was designated to attainment. Missouri had a clean data finding for the 1997 standard but then had a bad year in 2012 due to extreme meteorology.

Earlier this year the MACC adopted an Early Progress Plan for 2008 eight-hour ozone standard containing MOVES-established 2015 motor vehicle emissions budgets. This plan shows that with federal vehicle technology controls in place the area is expected to attain the standard by 2015. MoDNR plans to submit this document to USEPA shortly.

Several rules were up for public hearing at the July 24 MACC meeting. Comment period is open until July 31. There is a proposed amendment to 10 CSR 10-6.130 (controlling emissions during episodes of high air pollution potential) updating the Air Quality Index (AQI) table in this rule for consistency with all the recent NAAQS changes. Another set of proposed rules incorporates by reference federal updates to state rules for new source performance standard, maximum available control technology (MACT) and national emission standards for hazardous air pollutants. At the MACC meeting on August 29 there will be public hearing on proposed rescission to 10 CSR 10-3.010 rule concerning auto exhaust emission controls from 1972. This rule is now outdated as the standards for manufactured vehicle emissions equipment has advanced beyond the requirements established in this rule. At the September MACC meeting there will be public hearings on a proposed commercial-industrial solid waste incinerator rule, maintenance updates to air pollution definitions and incorporation by reference of federal regulatory requirements for Section 111 E of Clean Air Act State Implementation Plan revisions.

Mr. Leath, MoDNR, said that since 2008 Missouri has received a small percentage of the federal Diesel Emissions Reduction Act (DERA) program funding. Funds are to be used to reduce diesel emissions in specific areas of Missouri. In 2013 the smallest amount of DERA funding (\$100,00) was allocated to each state. MoDNR has decided to open up these funds statewide and focus on early school bus replacements. The state will pay 25 percent of the cost for a new school bus. All bus owners with public or private school buses operating in Missouri are eligible. An owner will have to disable an older (1992-2003 model year), high polluting school bus. Applications are being accepted and selection will be by random drawing. The state DERA funding has to be spent by October 1, 2013.

VII. Other Business

Mr. Coulson, EWG, announced that on July 18 there were four exceedances of the eight-hour ozone standard. At this time in 2012, there had been 27 ozone days and 102 exceedances.

Mr. Schmidt, Illinois Department of Transportation (IDOT), announced that the call for projects for Illinois Transportation Enhancement closes on August 20, 2013. More information is available at www.dot.il.gov. Mr. Stack, IDOT, said that Bruce Carmitchel, a senior metropolitan planning manager at IDOT commented at the EWG Executive Advisory Committee on how well the EWG staff produced the Conformity Determination, Transportation Improvement Program and Congestion Management Process documents. Mr. Stack, also, noted that EWG staff always does a great job to get these documents done and approved in a timely manner.

There being no other business, the meeting of the Air Quality Advisory Committee was adjourned.