AGENDA
AIR QUALITY ADVISORY COMMITTEE*
TUESDAY April 23, 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 March 26, 2013 Meeting

II. **One STL: Many Communities. One Future - Regional Plan for Sustainable Development**
- David Wilson, East-West Gateway Council of Governments

III. **St. Louis University Ozone Garden Project**
- Jack Fishman, Ph.D., St. Louis University
- Kelly Belina, St. Louis University

IV. **St. Louis Regional Clean Air Partnership 2013 Activities**
Susannah Fuchs, American Lung Association

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

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

VII. **Other Business**

VIII. **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, March 26, 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
Kathrina Donegan - St. Louis County Air Pollution Control Program
Betsy Tracy - Federal Highway Administration, IL
Bruce Carmitchel - Illinois Department of Transportation
David Bloomberg - Illinois Environmental Protection Agency
Mike Right - AAA, Auto Club of Missouri

Others Present:
Jim Stack - Illinois Department of Transportation, District 8
Joe Gray - Illinois Department of Transportation, District
Mike Rogers - Illinois Environmental Protection Agency
Kevin Herdler - St. Louis Regional Clean Cities Program
Amy Funk - Metro East Community Air Project
Bob Klepper - Missouri Coalition for the Environment
Kathy Andria - American Bottom Conservancy
Rich Wiese - U.S. Steel
Stefanie Boehme - U.S. Steel
Christopher Schmidt - Illinois Department of Transportation

Staff:
David Wilson Carol Lawrence Gary Pondrom

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). Ms. Funk, Metro East Community Air Project (MECAP) provided clarification on passive monitors used in her study. Corrections to the minutes of the January 29, 2013 AQAC meeting were approved as circulated.

II. Research Findings of National Climate Assessment
- John Posey, East-West Gateway Council of Governments

In January 2013 the draft National Climate Assessment report was released and the public comment period began. Comments will be accepted until April 12, 2013. As part of the 1990 Global Change

Research Act, the National Climate Assessment is required to be produced every four years. The first was produced in 2000, the second in 2009 and the third should be delivered in December 2013. People are encouraged to go to the National Climate Assessment website at http://ncadac.globalchange.gov to review and comment on the draft document. Only on-line comments will be accepted.

The National Climate Assessment effort is overseen by the National Climate Assessment Development Advisory Committee (NCADAC). This is a federal advisory committee whose members were appointed by the Secretary of Commerce. Work began in January 2011.

The report has 30 chapters analyzing climate change impacts on a variety of different sectors and geographic regions. Sectors include: water resources; energy supply and use; transportation; agriculture; forestry; ecosystems and biodiversity; and human health. Mr. Posey served on the writing team for the transportation chapter. The U.S. was divided into eight geographic regions. For analysis purposes, ocean and marine resources and coastal areas were considered as two additional geographic regions. The committee also looked at some issues that cut across sectors. These included rural communities, Native American tribes and urban infrastructure.

A subcommittee reviewed all of the key findings from each chapter, identified those factors that kept emerging and distilled them into 11 draft report findings. The aim is to present these key findings and not debate or defend them. Right now, everything remains subject to revision. The first finding is that global climate is changing, and this apparent across the U.S. in a wide range of observations. The climate change of the last fifty years is due primarily to human activities, primarily the burning of fossil fuels. This was a finding of the previous assessment as well. Some extreme weather and climate events have increased in recent decades, and there is new and stronger evidence that many of these increases are related to human activities. Over the last fifty years different portions of the U.S. have seen an increase in extreme weather events like high temperatures, heavy downpours or more severe droughts. Human-induced climate change is projected to continue and accelerate significantly if emissions of heat-trapping gases (greenhouse gases) continue to increase. Impacts related to climate change are already evident in many sections and are expected to become increasingly challenging across the nation throughout this century and beyond. Climate change threatens human health and well being in may ways including impacts from increased extreme weather events, wildfire, decreased air quality, diseases transmitted by insects, food, and water and threats to mental health. Climate change interacts with socio-economic and other factors to create vulnerabilities. The Assessment identified several vulnerable populations including children, elderly, sick, low income and Native American tribes. Infrastructure across the U.S. is being adversely affected by phenomena associated with climate change, including sea level rise, storm surge, heavy downpours and extreme heat. For example, sea level rise, storm surges and extreme heat can affect roads, rail lines and runways. Reliability of water supplies is being reduced by climate change in a variety of ways that affect ecosystems and livelihoods in many regions, particularly the Southwest, the Great Plains, the Southeast and the islands of the Caribbean and the Pacific, including the state of Hawaii. In many regions climate change increases the likelihood of water shortages and competition for water for different uses and the risk of seasonal shortages. Adverse impacts to crops and livestock over the next 100 years are expected. Over the next 25 years

or so, agriculture sector is projected to be relatively resilient, even though there will be increasing disruptions from extreme heat, drought and heavy downpours. U.S. food security and farm incomes will also depend on how agricultural systems adapt to climate changes in other regions of the world. Natural ecosystems are being directly affected by climate change, including changes in biodiversity and location of species. As a result, the capacity of ecosystems to moderate the consequences of disturbances such as droughts, floods, and severe storms is being diminished. Life in the oceans is changing as ocean waters become warmer and more acidic. Oceans have become 30 percent more acidic as they absorb larger amounts of carbon dioxide from the atmosphere. Planning for adaptation (to address and prepare for impacts) and mitigation (to reduce emissions) activities is increasing, but progress with implementation is limited. It is Mr. Posey's view that anything we can do to make us more resilient, whether directly for climate change or not, has benefit now and in the future.

At the end of the public comment period, NCADAC will spend the next eight to nine months reviewing and responding to comments received. In addition, the National Academy of Science will be coordinating a peer review of the document. The final National Climate Assessment report is to be delivered to the President in December 2013. It is hoped that the Administration will adopt it as the National Climate Assessment early in 2014.

Ms. Andria, American Bottom Conservancy (ABC), asked if the outcome of the National Climate Assessment would be legislation or changes to policies of agencies. Mr. Posey, EWG, said that it is a research project and hope that it will inform the adaption activities at government agencies.

Mr. Wilson, EWG, said that the theme of the March 19 Earth Day Symposium was "Climate Trends: Impacts and Adaptions". Dr. Fishman, professor of meteorology at St. Louis University gave a presentation on climate change at the global and national perspective and Mr. Posey described climate trends in the Midwest. One takeaway was that we can expect drier, hotter summers and wetter winters and rain events will probably be more severe and heavier over a shorter period of time.

III. Attainment Plan for the Herculaneum Lead Area under the 2008 Lead National Ambient Air Quality Standard (NAAQS)
- Joe Winkelmann, Missouri Department of Natural Resources

Purpose of Attainment Demonstration plan is to satisfy the Clean Air Act requirements for the Herculaneum lead non-attainment area under the revised (in 2008) National Ambient Air Quality Standard (NAAQS) for lead. The country's last remaining primary lead smelter is located in Herculaneum in Jefferson County. The smelter processes lead ore concentrate and is now owned and operated by the Doe Run Company. The primary lead smelter has been in operation for 120 years under different ownerships. Lead is both a criteria pollutant and an air toxic. When lead was in gasoline, it was a pollutant of regional concern but now it is more typified by a single source. Missouri is going to demonstrate attainment with the new (2008) standard. This plan was presented

at a public hearing at the February 5, 2013 Missouri Air Conservation Commission (MACC) meeting and is to be adopted at the March 28 MACC meeting.

In October 2008 the lead NAAQS was strengthened from 1.5 micrograms per meter cubed (ug/m^3) to 0.15 ug/m^3. One ug/m^3 is the equivalent of about 20 drops of water in a vessel the size of Busch Stadium. The form of the standard was changed from quarterly (four values in a year) to three month rolling average (12 values in a year).

Missouri has had an extensive role in the mining and smelting of lead. About 80 percent of the country's lead comes through Missouri by either mining, primary smelting or secondary (post consumer recycling) smelting. In addition to the primary smelter in Herculaneum there are two secondary smelters in Missouri which process used car batteries. The Doe Run secondary smelter in Buick is the country's largest lead recycling smelter. The 40 mile long Viburnum Trend (Den, Iron and Reynolds Counties) is the largest lead mine in the world. Due to historic role in lead regulation, the Air Pollution Control Program of the Missouri Department of Natural Resources (MoDNR) has deployed and maintained an extensive air quality monitoring network around theses areas of high lead activity. Monitoring data was used in 2009 to recommend that the area within the Herculaneum city limits and the area around the Buick smelter and the Viburnum Trend be designated as non-attainment. In 2010 these areas were designated as non-attainment and a State Implementation Plan (SIP) is to be prepared for both areas.

Over the years there have been several SIP revisions to bring the Herculaneum area into compliance with the NAAQS. The last previous revision was in 2007. Monitoring data showed that the area had gone below the standard and then went up so the U.S. Environmental Protection Agency (USEPA) issued a SIP call requesting Missouri revise their Herculaneum lead SIP to bring area into compliance. Since 2008, Herculaneum has been in attainment of the 1978 standard. For the three-month rolling average for the 2008 standard ending in November 2010, the maximum monitored concentration was 0.73 ug/m^3. The Clean Air Act requires a SIP be done for a non-attainment area. Section 191 requires a state to submit a non-attainment area SIP and Section 172 sets out the elements a SIP must address. State is to demonstrate that it has: ambient air monitoring and air quality data; conducted an emissions inventory; control strategies and attainment demonstrations (showing emission reduction to be achieved through strategies and technology); analyzed Reasonably Available Control Measures (RACM) and Reasonably Available Control Technology (RACT) control strategies; Reasonable Further Progress will be achieved over the time frame of the SIP; and included contingency measures in case the delineated control measures do not result in attainment of the standard. An air dispersion model (AERMOD) is used to develop the best available estimate of future ambient air concentrations of lead. A base case example using meteorological data is run in order to compare emission estimates to actual monitoring data.

Current operations at the Doe Run smelter in Herculaneum have a lead production limit of 130,000 tons per year. The facility contains a sinter plant where lead ore concentrate (lead sulfide) is converted to lead sinter at high temperatures. Sinter and coke is fed into the blast furnace to yield molten lead and slag. The molten lead is fed into kettles and delivered to the refinery to be placed in molds for further processing. At the strip mill the lead alloy is cast into long strips based on

customer specifications. As part of a 2011 Federal Consent Judgement decree affecting several Doe Run facilities, Doe Run has agreed to shut down the Herculaneum smelting operations at the sinter plant by December 31, 2013. The blast furnace is to be shut down by April 30, 2014.

In addition to the Consent Judgement Decree shut down, for several years Doe Run had invested in research and development of a water/acid based electrolysis project to refine lead ore. Doe Run is a part owner of the technology and ran a pilot plant in Boss MO for several years. Since this process would not be fire based, it would have near zero emissions and none of the by-products of smelting. However, in June 2012 for independent business reasons, Doe Run made the decision to not go ahead and build this new technology facility at the Herculaneum site. After April 2014, there will not be a primary lead smelter in the U.S. and the only source of domestic lead will be from recycling operations. Lead will have to be sent out of the country for processing.

The U.S. Department of Energy (DOE) has identified lead as a strategic metal and as the cheapest way to store energy for wind turbine technology and large solar technology. Lead is 40 times cheaper than lithium. Lithium works in small applications. For practical purposes lithium is not recyclable and there is little production in the U.S. The lead industry is looking for DOE grants to develop the fourth generation of lead storage technology to reduce the weight of batteries.

Mr. Wilson, EWG, observed that China does not have stringent air quality regulations but we require U.S. industries to deal with it. We need a global trade agreement, to protect the global environment. Mr. Winkelmann, MoDNR, said that the U.S. lead industry is concerned that if go ahead with this costly new technology that China would start up small scale primary smelters and flood the market with cheap processed lead. Then the lead industry would not be able to recoup their investment. There is a primary smelter in New Brunswick Canada. The Canadian lead standard is 30 ug/m^3 which is 200 times higher than the U.S. standard. Ms. Andria, ABC, asked how lead from recycled batteries is controlled. Mr. Winkelmann, MoDNR, said that lead from recycling is regulated under MACT and newly revised air toxic standard.

A lead SIP has also been developed for the secondary smelter at Buick. Strategies include the complete enclosure of the facility and using negative air pressure to keep lead emissions inside before they become fugitive. Doe Run is also going to do process changes and install dry scrubber before the baghouse. It will filter out lead than sulfur dioxide (SO_2) emissions.

Ms. Andria, ABC, asked if there were any lead monitors located between Herculaneum and the City of St. Louis. Mr. Winkelmann, MoDNR, replied that the monitor was sited in St. Louis based on population. Now that there is no lead in gasoline, lead levels in St. Louis are at the minimum detectable level and is just a fraction of the 0.15 ug/m^3 standard. The extent of lead influence is about 2.5 miles from the stack. Ms. Andria, ABC, then asked if there were any Illinois residences in that 2.5 mile area. Mr. Winkelmann, MoDNR, said that the Illinois side is typified by flood plain and agriculture. The prevailing wind direction is to the northwest which does not indicate that there would be much transport to that area.

Even though Doe Run is going to shut down the primary smelter operation at Herculaneum, the company wants the flexibility to operate the strip mill and to operate the refinery building as a re-melter (re-melt, casting ingots into other forms and alloy mixing). In March 2012 Doe Run entered into negotiations with a developer/environmental service company to sell much of its Herculaneum property for redevelopment. Currently, no decisions have been made on future land use/redevelopment.

All of the provisions from previous Consent Judgement decrees and SIPs still remain in force. The strip mill production limit now will be 3,750 tons of cast lead per three-month rolling average. Doe Run is currently producing 130,000 tons of pure lead. For the re-melter operation, Baghouses 8 and 9 will each be limited to 3.5 pounds of emissions per day. With the elimination of the smelter, Baghouse 7 will be eliminated. In the plan, the current fence line of the Herculaneum facility was modeled with model receptors set every 50 meters. Output from the air dispersion model showed low lead levels at the current fence line. To see the effect of the shutdown, more refined modeling was performed by locating receptors, at ten meter spacing, in areas inside the fence line which are currently non-ambient. In this way, can determine extent of ambient/non-ambient footprint (or attainment/non-attainment zone). This will give Doe Run the flexibility to move in the fence line as a result of the shut down and allow for potential redevelopment of area (after clean-up concluded). Doe Run has to notify MoDNR of any fence line change.

This SIP is made legally enforceable through a 2013 Consent Judgement to be lodged in Jefferson County. Consensus has been reached between MoDNR, Doe Run and the Attorney General's office. Permanent and enforceable actions include: new control measures and products; production and emission limits; required practices and procedures; contingency measures; penalty provisions; and dispute resolution provisions.

Mr. Klepper, Missouri Coalition for the Environment, asked how much of a role the legislative and the environmental community has had in developing this SIP. Mr. Winkelmann, MoDNR, said that as project manager, he has had limited contact with elected officials. During the development of designation recommendations, Jefferson County wanted to make sure that MoDNR defined the non-attainment area as appropriately as possible. The environmental community is on board with this lead SIP. They have had an active role in past SIP revisions and consent decrees. Their input is welcome. The environmental community did not present comments at the February public hearing.

Ms. Andria, ABC, asked if there had been any negative comments from Herculaneum residents with children. Mr. Winkelmann, MoDNR, said there were no comments. He observed that Herculaneum has been involved in smelting and mining of lead since its inception. There are new subdivisions with children west of I-55 which are out of the area of impact. The old town part of Herculaneum does not have that many young children. This may be result of the voluntary buy-back program from five to seven years ago.

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

At the January 2013 St. Louis Auto Show, the Eco City display of alternative fuel vehicles took up the majority of floor space in the Edward Jones Dome at America's Center. Approximately 3,000 people participated in the ride and drive program.

In February Clean Cities moved into a new office in Kirkwood. Clean Cities has received a grant to model how alternative fueled vehicles can help to reduce emissions and improve air quality. EWG will have a role in this project. Last year, activities in the St. Louis (MO-IL) area and new alternative technologies help to displace more than 10 million gallons of gasoline/diesel fuel. This is equivalent to 125,000 tons of greenhouse gas emissions. This 2012 report will be submitted to DOE. In October 2013 Clean Cities will participate in the NAPA Car Show at Gateway International Speedway in Illinois.

On April 15, Mr. Herdler will be in Jefferson City to talk with the House Republican Study Group. Legislation has been proposed to raise the motor fuel tag (sticker) tax for alternative fuel vehicles (from cars to large trucks). The tag is supposed to cover the motor fuel tax ($0.17 gallon) that would be paid if a vehicle would be run on conventional fuel. For a big truck the sticker costs $1,000. This amount is equivalent to 5,780 gallons of diesel fuel used/purchased in a year. It has been proposed to increase the tag tax for all alternative fuel vehicles. It is proposed to raise the large truck tag tax to $1,880. The problem with this proposal is that $1,880 is the equivalent is 10,000 gallons of diesel fuel. An operation like Allied Waste might burn that amount in a year operating trash trucks but for a city truck or very small fleet, they might never reach 10,000 gallons. In Mr. Herdler's view, this proposed increase would act as a disincentive, for the purchase of alternative fuel vehicles.

V. Update Activities of the States
- Joe Winkelmann, Missouri Department of Natural Resources
- David Bloomberg, Mike Rogers, Illinois Environmental Protection Agency

Mr. Winkelmann, MoDNR, announced that RegForm will hold an Air Compliance Seminar on March 27 in Columbia, MO.

At the March 28 MACC meeting the Herculaneum and Buick lead State Implementation Plans (SIPs) are to be adopted. There will be a public hearing on the proposed revision to the SO_2 boundary recommendations. Green County (Springfield) was recently certified to have clean air quality data for 2010-2012. MoDNR is recommending that Green County not be included in non-attainment area. The second hearing will be on the proposed nitrogen dioxide (NO_2) infrastructure SIP.

Mr. Bloomberg, Illinois EPA, announced that the ownership of several coal-fired power plants had changed in Illinois. Ameren has sold their five coal-fired power plants to Dynegy and Dominion sold several of their plants to a private energy fund. Concerning proposed SO_2 non-attainment areas, Ameren has made comments concerning their status in one of the two areas in northern Illinois.

Illinois EPA is moving forward with rule making for the Granite City lead non-attainment area. Draft rules should be presented to the Illinois Pollution Control Board (IPCB) in the next few months. The rule making has been complicated in that the rule is to appear as general applicability but with special geographic area of interest (not identifying specific facility). When Illinois EPA prepares the SO_2 rule, the affected facilities will be named.

Mr. Rogers, Illinois EPA, said that the proposed Stage II Vapor Recovery program requirements for the Chicago area have been accepted by the IPCB. No schedule for public hearings has yet been established. With this rule, effective January 1, 2014, Illinois EPA would stop the requirement for the installation of Stage II equipment at service stations and allow certain stations to start decommissioning at that point in time. Service stations still have to operate their Stage II systems until decommissioning occurs. Meeting the January 2014 deadline depends on action by the IPCB.

Mr. Winkelmann, MoDNR, said that USEPA had verified Missouri's technical support document justifying the removal of Stage II Vapor Recovery program controls. However, there have been some changes and additional documentation will be needed and presented to USEPA. These changes were discussed at the March 22 stakeholders meeting. Changes to the program are moving forward based on the USEPA agreement on the technical support document. Ms. Donegan, St. Louis County Department of Health, said that service stations began decommissioning their systems on March 15. In order to keep their permits up to date with the State and/or St. Louis County, the stations have to be retested to show that Stage I requirements are being satisfied. This testing is time consuming.

VI. Other Business

Ms. Andria, ABC, announced that USEPA is proposing to issue a Title V operating permit for the Veolia hazardous waste incinerator in Sauget IL. Veolia is proposing to install continuous emissions monitoring system (CEMS) on one unit for one year. In the past, Veolia has had a number of violations including not accurately characterizing waste to be incinerated. USEPA is accepting comments until April 1, 2013. The ABC recommended that CEMS be installed on all three units at the facility. If a system is put on one unit, there is potential that other units without the continuous emissions monitoring system could be used to incinerate hazardous waste. A while ago ABC petitioned USEPA with objections to the Title V operating permit for Granite City Works US Steel issued by Illinois EPA. USEPA accepted the objections and directed Illinois EPA to make changes and re-submit. Illinois EPA has issued a revised permit and ABC has filed comments. The outcome is pending. Ms. Andria, ABC, announced that USEPA has published a proposed rule to amend regulations concerning excessive emissions during periods of start up, shut down or malfunction at a facility. According to Ms. Andria, Illinois companies consider this rule a "get out of jail free card" when there are problems at their facilities. Last week Maxine Lipeles of Washington University Environmental Law Clinic presented comments on behalf of ABC at a public hearing in Washington, D.C. The comment period is still open.

The next meeting of the AQAC was scheduled for Tuesday, April 26, 2013. There being no other business, the meeting of the Air Quality Advisory Committee was adjourned.