AGENDA
AIR QUALITY ADVISORY COMMITTEE*
TUESDAY September 29, 2015
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 28, 2015 Meeting

II. **Missouri Perspective on the Clean Power Plan and Sulfur Dioxide Designation Recommendations**
- Stacy Allen, Missouri Department of Natural Resources

III. **OneSTL Activities**
- Aaron Young, East-West Gateway Council of Governments

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

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

VI. **Other Business** – Next Meeting Date October 27, 2015

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 28, 2015
East-West Gateway Board Room

Members Present:
Michael Coulson, Chair, East-West Gateway Council of Governments
Mike Henderson - Missouri Department of Transportation
Susannah Fuchs - American Lung Association
Stacy Allen - Missouri Department of Natural Resources
Chris Schmidt – Illinois Department of Transportation
Jack Fishman – St. Louis University
Jeremy Rogus – St. Louis County Department of Public Health, Air Program
Brad McMahon – Federal Highway Administration, Missouri
Betsy Tracy - Federal Highway Administration, Illinois (telephone)

Others Present:
Rob Kaleel – Lake Michigan Air Directors Consortium
Wesley Stephen – Missouri Department of Transportation
David Shanks - Boeing
Curtis Jones - Illinois Department of Transportation, OP&P
Joe Gray – Illinois Department of Transportation, District 8
Segolene Rehaze - Sierra Club
Andy Knott - Sierra Club
Roger Walker - RegForm
Kevin Herdler – St. Louis Regional Clean Cities Program
Heather Hamilton - U.S. Environmental Protection Agency Region 7
Amy Bhesania - U.S. Environmental Protection Agency Region 7 (telephone)
Eric Casper – Madison County Transit/RideFinders (telephone)

Staff:
Mary Grace Lewandowski John Posey Lubna Shoiab Carol Lawrence
Michael Wohlstadter Rodney Halbert

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 (EWG). The minutes of the June 23, 2015 AQAC meeting were approved as circulated. Mr. Coulson, EWG, announced as Mr. Bloomberg, Illinois Environmental Protection Agency, was unable to attend as he is at a conference.

II. Regional Air Quality Issues in the Midwest
- Rob Kaleel, Lake Michigan Air Directors Consortium

The Lake Michigan Air Directors Consortium (LADCO) represents Illinois, Indiana, Michigan, Ohio, Wisconsin and Minnesota. For the last several years average ozone design value levels for all monitors in the LADCO states (same as U.S. Environmental Protection Agency (EPA) Region 5) have decreased markedly. Decreases were noted starting in 2003-2004 after the implementation of the oxide of nitrogen (NO_x) State Implementation Plan (SIP) call. Even with the bad weather year of 2012 which had a spike in ozone levels, the design value is much less than in previous years. Mr. Coulson, EWG, said that the first exceedance occurred here on July 24 at the Orchard Farm monitor (78 parts per billion or ppb).

Under the 2008 eight-hour ozone standard, most of the non-attainment areas in the eastern U.S. were designated as "marginal", including St. Louis. Marginal areas were supposed to attain the standard by the end of the 2014 ozone season. Using 2012-2014 design values, monitors in Chicago area, around Lake Michigan and St. Louis area are violating the 2008 ozone standard. States can petition EPA for a one-year extension of the attainment deadline to 2015. Assume that for St. Louis area, Missouri and Illinois have petitioned EPA for an extension. The Chicago area did not qualify for an extension. There will probably be a proposal by EPA to "bump-up" the Chicago area from marginal to moderate non-attainment.

LADCO has looked at when areas might attain the 2008 ozone standard and to try to understand what it will look like for next ozone standard. Composite national 2011 eight-hour ozone monitor design values were compared to projected 2018 monitoring data. Modeling indicates that in 2018 there is going to be improvement in air quality nationally as result of a number of emission reductions. Some monitors in Wisconsin, Cincinnati, Louisville, Texas and states in the northeast corridor will still be in violation. It is projected that the St. Louis area should be in attainment.

Last week EPA released a Notice of Data Availability which contains a number of data tables. EPA is getting ready to issue a new transport rule to mitigate the effects of transport of air pollutants. It will be a follow-up to the Cross State Air Pollution Rule (CSAPR). EPA is likely to suggest that a contribution from a state that is greater than one percent of the ozone standard (75 ppb) would be considered a significant contribution. LADCO has used Ozone Sources Apportionment Tool (OSAT) to estimate the 2017 contribution of states and sources to monitors in and around the LADCO states. The model domain covered the continental U.S. Global climate model output was used to develop boundary condition estimates which reflect the emissions contribution coming in at the edges of the model domain. For the west domain boundary at the Pacific Ocean, this represents contributions from Asia, Europe and even contributions from North America going around the globe.

For the West Alton monitor, the state with the greatest contribution is Missouri then Illinois and after that Texas, Arkansas, Louisiana and Oklahoma. LADCO modeling shows that the largest contribution to potential ozone problems at the West Alton monitor would come from the on-road and off-road mobile emission source categories. Electric generating units (EGUs) have been the focus of control programs for many years. This 2017 projection assumes that EGUs are

complying with the clean air transport rules. EGU emissions are down, but more work can be done. One of the issues observed is that there are other sources contributing to ozone problems besides man-made. At West Alton, emissions from global boundary/background condition are estimated to make up 43 percent of the total emissions from all sources. Another big contributor is biogenics (plants and trees). Looking at the next ozone standard, there are no easier to implement control measures any more. It is going to be difficult to lower ozone levels any more than already have.

To further examine the long range transport issue, LADCO combined output from OAST for the continental U.S. and the global boundary condition model and took out all man-made emissions and left in emissions attributed to biogenics and boundary/background conditions. Over the Midwest, there are ozone values at 35 to 45 ppb (seasonal average). In the Rocky Mountains things look much worse with ozone values close to the level of the current ozone standard.

Mr. Coulson, EWG, asked how the global sources from Asia/international transport worked and is this ozone at the stratospheric level but still impacting the lower atmosphere. Mr. Kaleel, LADCO, replied that man-made ozone is probably not up as high as stratosphere but it is at the upper boundary of the troposphere and not at the surface. In the Rocky Mountains there is downward mixing because of turbulence of mountains which will pull down transported tropospheric ozone. In some circumstances this turbulence can pull down stratospheric ozone.

For the Alton monitor, OAST output shows there will be more contribution from Illinois and then Missouri. Whatever sources are closest to the monitor will impact that monitor more. The monitor in Sheboygan, Wisconsin has big contributions from Illinois (Chicago area) and Milwaukee and the Great Lakes. Approximately 34 percent of the man-made contribution to the Sheboygan ozone monitor is from off-road marine sources. This reflects the emissions from the big commercial vessels operating on the Great Lakes. To gain a better understanding about the commercial marine vessels and their emission contributions, LADCO is researching commercial marine vessel operations on inland waterways. They are talking with the Coast Guard, Great Lake Carriers Association and Environment Canada. Model runs were done to look at ozone contributions from commercial marine vessels operating on the Great Lakes over a three to four day period. There is an area in southern Lake Michigan with higher ozone levels.

LADCO also ran OAST for the Harford, Maryland monitor to see how much the Midwest is contributing to monitors in the northeast. Harford, near Baltimore, was the only moderate ozone non-attainment area for the 2008 ozone standard and is obligated to prepare an Attainment Demonstration. According to Mr. Kaleel, it is typical of states in the northeast, like Maryland, to believe that their problem is coming from somewhere else, like the Midwest. These states are looking for help from EPA in terms of transport rule. LADCO found that the biggest contributors to this monitor are sources in Delaware and Maryland. Other contributors include Pennsylvania, Virginia and then Midwestern states (Ohio and Indiana).

In October 2015 EPA is going to release the revised ozone standard which will be set in the range of 65 to 70 ppb. Using 2012-2014 ozone design values, LADCO prepared a preview of impact of revised standard if it was set at 70 ppb or 65 ppb. At 70 ppb, additional monitors would show violation in Indiana and Ohio. If the standard is set at 65 ppb, most monitors in the Midwest

would be violating. Areas which previously have been classified as non-attainment understand the process, potential control strategies and attainment schedule. But for areas new to non-attainment, it will be challenging.

To finalize designation under the revised ozone standard, EPA probably will be using 2013-2015 monitor design values. Mr. Coulson, EWG, pointed out that there will probably be a two to three year period to roll out the revised standard. Mr. Kaleel, LADCO, said that EPA is to finalize the revised standard in October 2015. In 2016 states have to submit designation recommendations (attainment, non-attainment) to EPA using 2013-2015 data. Designations will be made by EPA in 2017 using the most recent three years of data.

LADCO has been reviewing the continuous emission monitor data which all coal-fired power plants (electric generating units or EGUs) are required to submit to EPA. LADCO has been doing modeling to see if there is any air quality benefit from tightening up this program. The main regulations driving down NO_x emissions are the NO_x SIP call and federal trading rules like the Clean Air Interstate Rule (CAIR) and CSAPR. Companies can comply with these trading regulations by turning in NO_x allowances at the end of each year and do not necessarily have to run their emission controls. Data indicates that starting around 2011, utilities which have very good emission controls, like Selective Catalytic Reduction (SCR), had figured out that it is cheaper to turn in allowances and not run their scrubbers. LADCO examined emissions levels for EGUs with SCR technology. These facilities should be able to get NOx reduction of .075 pounds per million BTU (lb/mmBTU) or lower. Found that there were some utilities in the Ohio River valley and in Pennsylvania which were not running their controls in 2011. Two EGUs in Missouri, in Monticello and New Madrid, were not running their controls. LADCO modeled 2011-2014 emissions for different states for EGUs with SCRs. Use of SCRs should be able to get daily NOx rates emissions below .075 lb/mmBTU average for entire state. In one state utilities are running their controls. Plus, this particular state has consent orders covering most of the coal-fired EGUs so it has its own regulatory mechanism not just trading program. Another state is not doing as well. In 2011, its average statewide NOx emissions from EGUs were .12 lb/mmBTU and there were much higher levels in 2012, 2013 and 2014. Mr. Kaleel pointed out that there could be a 70 percent emission reduction just from using the on switch.

For the 2012 $PM_{2.5}$ standard, there were some data issues for Illinois which also affected the Missouri portion of the St. Louis area and northwestern Indiana. Until valid monitoring data is available, these areas have been identified by EPA as “unclassifiable”. LADCO is providing modeling assistance to Ohio and Indiana as they prepare Attainment Demonstration SIPs for their non-attainment areas. These SIPs are due in 2016. On a positive note, over the last 15 years PM2.5 design value levels have been dropping substantially.

Mr. Fishman, St. Louis University (SLU), observed that decreasing ozone levels are a testament to fact that EPA is doing its job really well in terms of control strategies implemented by the states. 2012 was the worst possible year meteorologically for St. Louis area and the 2012 ozone design value was not as high as it was in 1990. It is his view that EPA needs to rethink how they are going to set the standards because long range transport of emissions is not being taken into account. It is not a state problem anymore, it is a global problem. Mr. Kaleel, LADCO, said that even though the three-year form of the ozone standard was designed to moderate the

effects of bad/or particularly good meteorology, clearly still see blips as result of one year of meteorology. Maybe EPA should consider if a three-year construct of standard is appropriate.

Mr. Walker, REGFORM, asked how much latitude does EPA have to change the form of the standard and to consider global impacts. Mr. Kaleel, LADCO, said it was his opinion that it is within the purview of EPA to change the form of the standard. He added that there are some things EPA could look at such as power plants running their controls as there are a lot of power plants operating without these controls. Mr. Walker, REGFORM, asked if there an interest in making SCR equipment technology mandatory. Mr. Kaleel, LADCO, said that it might be addressed in the transport rule to be released by EPA later this year. CAIR was a free-flow trading rule where could trade emission decrease in Missouri for emission increase in New Jersey. CSAPR tried to tighten up on that. Maybe in the next rule there could be less free movement of allowances, trying to keep reductions closer to power source. Mr. Fishman, SLU, said that being pessimistic, EGU controls are not going to affect overall emission levels much, will just offset increases from boundary/background conditions. Mr. Kaleel, LADCO, said that there is less and less for states to do. Regulating emissions from off-road marine sources, area sources and biogenics falls outside the purview of the states. It has to be done at the federal level.

Mr. Coulson, EWG, observed that it seems that if EPA lowers the ozone standard to 65 ppb, there might not be individual non-attainment areas and all of the U.S. could be in non-attainment. Mr. Kaleel, LADCO, said that folks in the northeast states have suggested that non-attainment areas need to be a lot bigger but unsure if that will go anywhere. Ms. Fuchs, American Lung Association (ALA), asked if in terms protecting health, wouldn't it make more sense for controls to be across the board. The air does not pay attention to state borders. Mr. Kaleel, LADCO, pointed out there is good, ancillary benefits/local improvements to local or state level ozone controls as a lot of the VOCs want to regulate are toxic compounds. The 1990 Clean Air Act Amendments has the construct that ozone was a local problem which could be solved within an urban area. At that time, did not have an understanding or recognition of long range transport. With lower level of ozone standard, there are less easier-to-do controls available. Mr. Fishman, SLU, pointed out that standards are set by health effects. Between health officials, the real world and the lawyers, it is a complicated process. Ms. Fuchs, ALA, said that it is important for everyone to remember that focus of standards is on health.

Mr. Coulson, EWG, asked if LADCO had a projection or inventory on conversion of coal-fired power plants to natural gas. Mr. Kaleel, LADCO, said that LADCO and others have developed a model to look at power plants and have spent a lot of time to track shut downs, fuel switches, fuel costs and regulatory program. Fuel conversions are tracked but are difficult to project.

Mr. Walker, REGFORM, asked if the contribution from boundary/background conditions observed here is reflective of other places across the country. Mr. Kaleel, LADCO, said that boundary/background condition levels are the same. It really is global. Mr. Coulson, EWG, observed that Dr. Fishman has been saying that the bad air is getting better and the good air is getting worse. Mr. Kaleel, LADCO, said that what is new in the modeling realm is the use of the global climate models for seeding the regional models boundary/background conditions. Before, for Pacific Ocean boundary condition, it was assumed that the air was clean and a fixed

constant number for ozone levels was used. Now, having seen the results of these global climate models, realize that boundary/background conditions are big and getting bigger.

III. State Carbon Rule/Plan
- Stacy Allen, Missouri Department of Natural Resources

EPA has been phasing the roll out of greenhouse gas regulations for power plants. First released were regulations for new power plants and then regulations for modifications to existing power plants. In June 2014 EPA proposed the Clean Power Plan for existing power plants. EPA continues to review and analyze comments. The final rule will be released in later summer or early fall. It will probably be different from the proposed rule. In the final rule, a federal plan will be proposed. Each state can then decide whether it will be satisfactory to accept the federal plan or prepare one of their own. However, if a state submits a plan and EPA finds it is not complete because it does not meet all the requirements, then that state could be subject to the federal plan. At this time, Missouri has been doing modeling based on the proposed rule and evaluating options for compliance but has not made a decision about which approach to use. MoDNR is talking with the Department of Economic Development, Public Service Commission and Energy Center. When the final Clean Power Plan comes out, it will be evaluated by staff and stakeholders meetings will be held in the Fall.

Missouri, Michigan, Utah and Pennsylvania are participating in the Policy Academy of the National Governors Association (NGA) in a one year program. Missouri is working with a consultant, Resources for the Future, to model and evaluate different Clean Power Plan compliance scenarios/options based on the proposed rule. Participating in this NGA project will expand the internal capacity of MoDNR. MoDNR is also working with the Mid Continental States Environment and Energy Regulators group on modeling techniques, specifically trading programs. This is one way utilities could comply with the Clean Power Plan.

Mr. Coulson, EWG, asked if there was one person or group at MoDNR that will be working on the Clean Power Plan. Ms. Allen, MoDNR, said that Mark Leath is the technical lead on the NGA project and there will be a group working on the technical aspects and SIP implementation of the Clean Power Plan.

IV. Federal Highway Administration Technical Assistance Project for Mobile Source Greenhouse Gas Emissions Inventory
- John Posey, Ph.D., East-West Gateway Council of Governments

Starting in January 2015, EWG is receiving technical assistance from FHWA and EPA. EWG received funding from FHWA to develop EWG's capacity to model greenhouse gas emissions using the MOtor Vehicle Emission Simulation (MOVES) model. EWG runs the MOVES model to estimate on-road mobile source emissions as part of the transportation air quality Conformity Determination. The MOVES model also can estimate mobile source greenhouse gas emissions but EWG staff has not had time to learn how to use that feature. Dr. Fishman of SLU and a doctoral student, Jason Welsh, are working on this project for EWG. The project has four steps. First, the inputs for the MOVES model were analyzed and did not find much to improve. Next, MOVES was run and output and post-processing activities were examined. It

was decided to try to develop a set of software tools that any jurisdiction could use and which could be customized to any geography. Mr. Wohlstadter of EWG is working with Mr. Welsh to compare modeled greenhouse gas emission estimates and to try to resolve any discrepancies. In the next couple of months will begin to work on how the results should be visualized. The last step will be to prepare a final report and to share information with interested parties.

EPA is providing technical assistance to EWG in the form of a sketch-modeling tool to look at three different policy scenarios. It will allow EWG to identify impact on vehicle miles traveled (VMT) and VOC emissions. EWG has provided EPA with transportation, population and employment data to build the scenarios. The first scenario is transit full build where all proposed transit projects are built. The second scenario focuses on transit oriented development (TOD) at six selected MetroLink stations. The third scenario is to examine what a better home-work balance would do by simulating what if population lived closer to where they worked. Scenarios have been sent to EPA. A consultant, ICF International, will run the sketch-modeling tool and prepare a report. Between these two projects, by the end of the year, EWG's capacity to analyze greenhouse gas emissions will be enhanced.

V American Fuel Group Report
- Kevin Herdler, St. Louis Regional Clean Cities Program

In June, Mr. Herdler attended a public hearing on EPA's proposed Renewable Fuel Standards at EPA Region 7 offices. Approximately 300 people attended. The majority of the ethanol commenters were in favor of the proposal, but there were some comments on potential for engine damage. He was there to support biodiesel having a larger place in the Renewable Fuel Standards. He also attended the 21st Century Truck Partnership meeting in July at the National Renewable Energy Center in Colorado.

Clean Cities is finishing the re-powering of a tug boat through a MoDNR clean diesel grant. Clean Cities is applying for the next round of federal clean diesel funding to repower another boat and replace several school buses. MoDNR has a grant proposal request out for school bus replacements. To date, Clean Cities has done nine re-powering of tug boats, replacing old diesel engines with Tier 3 engines. Clean Cities is working with two companies which are interested in using liquefied natural gas to power their boats.

VI. Update Activities of the States
- Stacy Allen, Missouri Department of Natural Resources

Three Missouri Cross State Air Pollution Rules are on public comment until August 10. They address: 2017 annual NO_x trading allowance allocations; 2017 ozone season NO_x trading allowance allocations; and 2017 annual sulfur dioxide (SO_2) trading allowance allocations. Also on the MoDNR website is the agency's response to comments received concerning the proposed statewide sulfur rule (10 CSR 10-6.261 – Control of Sulfur Dioxide Emissions) which sets limits on specific sources in Jackson and Jefferson Counties. It is a continuation of the existing sulfur rule 10 CSR 10-6.260. It will be presented to the Missouri Air Conservation Commission (MACC) at their August 3 meeting with a recommendation for adoption. The August 3 meeting starts at 1:30 p.m. at the Elm Street Conference Center in Jefferson City.

MoDNR has held a number of stakeholder meetings and received feedback on their asbestos fee and permit fee structures. The asbestos fee rule-making is proposed to be published on August 17 and the comment period after that. The aim is to have the fees cover the cost of permit renewals and applications. The revised permit fee structure will be presented at the August 3 MACC meeting. If MACC agrees, MoDNR can then move forward with rule-making. MoDNR expects to file a proposed rule in August with comment period ending in September.

At the August 27 MACC meeting in Jefferson City, there will be two public hearings. One will cover the Infrastructure State Implementation Plan (SIP) for the 2012 $PM_{2.5}$ standard which shows that the state has all the needed rules in place and the authority to enforce them. The other will be on the proposed SO_2 boundary designation recommendations for those sources identified in the March 2015 EPA consent decree. Missouri sites included: Kansas City Power and Light Sibley Generation Station; Sikeston Power Station; Ameren Labadie Power Plant in Franklin County; and Iron County around the Doe Run secondary lead smelter in Buick. The recommendations will then be submitted to EPA. EPA has to make non-attainment decisions by July 2016. The on-line comment period is open now and the public hearing(s) comment period ends on September 3.

The September MACC meeting will be on September 24 at the MoDNR St. Louis Regional Office on S. Lindbergh.

VII. Other Business

Ms. Hamilton, EPA Region 7, announced that Josh Tapp, Branch Chief of the Air Program for 25 years at Region 7, is now going to be the Deputy Director of the Environmental Services Division.

The next meeting of the AQAC was scheduled for September 29, 2015. There being no other business, the meeting of the Air Quality Advisory Committee was adjourned.