



**AGENDA**  
**AIR QUALITY ADVISORY COMMITTEE\***  
**TUESDAY, January 30, 2018**  
10:00 a.m. – 12 noon  
East-West Gateway Board Room

- Chair**  
John Griesheimer  
Presiding Commissioner  
Franklin County
- Vice Chair**  
Mark A. Kern  
Chairman, St. Clair County Board
- 2nd Vice Chair**  
Steve Stenger  
County Executive  
St. Louis County
- Executive Committee**  
Steve Ehlmann  
County Executive  
St. Charles County  
Robert Elmore  
Chairman, Board of Commissioners  
Monroe County  
Lyda Krewson  
Mayor, City of St. Louis  
Kurt Prenzler  
Chairman, Madison County Board  
Ken Waller  
County Executive  
Jefferson County
- Members**  
Chuck Caverly  
St. Louis County Municipal League  
Jason Fulbright  
Jefferson County  
Emeka Jackson-Hicks  
Mayor, City of East St. Louis  
Reggie Jones  
St. Louis County  
Mark Kupsky  
Vice President,  
Southwestern Illinois  
Council of Mayors  
Roy Mosley  
St. Clair County  
Lewis Reed  
President, Board of Aldermen  
City of St. Louis  
Herbert Simmons  
President, Southwestern Illinois  
Metropolitan & Regional  
Planning Commission  
Tom Smith  
President, Southwestern Illinois  
Council of Mayors  
Michael Walters  
Madison County  
John White  
St. Charles County
- Regional Citizens**  
Barbara Geisman  
C. William Grogan  
Richard Kellett  
John A. Laker  
Kristen Poshard
- Non-voting Members**  
Erin Aleman  
Illinois Department of  
Transportation  
Erika Kennett  
Illinois Department of Commerce  
and Economic Opportunity  
Patrick McKenna  
Missouri Department of  
Transportation  
John Nations  
Bi-State Development  
**Executive Director**  
James M. Wild

- I. Call to Order**  
-Carol Lawrence, Chair, East-West Gateway Council of Governments  
A. Minutes of October 24, 2017 Meeting
- II. 2015 Ozone Standard Designations and Next Steps**  
- Lachala Kemp, U.S. Environmental Protection Agency Region 7
- III. Fourth National Climate Assessment**  
- John Posey, Ph.D., East-West Gateway Council of Governments
- IV. Missouri Volkswagen Settlement Activities**  
- Stacy Allen, Missouri Department of Natural Resources
- V. Electric Vehicle Shuttle**  
- Mark Mindon, Electric Cab North America
- VI. American Fuel Group Report**  
- St. Louis Regional Clean Cities Program
- VII. Update Activities of the States**  
- Illinois Environmental Protection Agency  
- Missouri Department of Natural Resources
- VIII. Other Business – Next Meeting Date March 27, 2018**
- IX. 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.

Gateway Tower  
One Memorial Drive, Suite 1600  
St. Louis, MO 63102-2451

314-421-4220  
618-274-2750  
Fax 314-231-6120

webmaster@ewgateway.org  
www.ewgateway.org

MINUTES  
AIR QUALITY ADVISORY COMMITTEE  
Tuesday, October 24, 2017  
East-West Gateway Board Room

Members Present:

Carol Lawrence, Chair - East-West Gateway Council of Governments  
David Bloomberg- Illinois Environmental Protection Agency (telephone)  
Stacy Allen - Missouri Department of Natural Resources  
Betsy Tracy- Federal Highway Administration Illinois  
Chris Schmidt – Illinois Department of Transportation  
Pat Kelly- Municipal League of Metro St. Louis

Others Present:

Jed Wolkins - U.S. Environmental Protection Agency Region 7 (telephone)  
Kevin Jemison – Illinois Department of Transportation, District 8  
Heather Hamilton – U.S. Environmental Protection Agency Region 7 (telephone)  
Kevin Herdler- St. Louis Regional Clean Cities Program  
Curtis Jones- Illinois Department of Transportation  
Steve Whitworth- Ameren  
Andy Knott- Sierra Club  
Andy Heaslet- Sierra Club  
Ajay Arora - Ameren  
Jay Turner- Washington University  
Bruce Morrison- Great Rivers Environmental Law

Staff:

Bonnie Harper Mary Grace Lewandowski Tamar Brown Helena Sykas John Posey

**I. Call to Order**

**- Carol Lawrence, Chair, East-West Gateway Council of Governments**

The meeting of the Air Quality Advisory Committee (AQAC) was called to order by Chair Carol Lawrence, East-West Gateway Council of Governments (EWG). The minutes of the September 26, 2017 AQAC meeting were approved as circulated.

**II. Ameren Missouri Plan to Expand Use of Wind and Solar Generation and Carbon Reduction Goal**

**- Ajay Arora, Ameren**

Ameren is a fully rate-regulated electric and natural gas utility operating in Missouri and Illinois. Ameren Missouri runs: electric generation business; transmission and distribution business; and a natural gas distribution business. Ameren Missouri is regulated by the Missouri Public Service Commission (MOPSC). Ameren Illinois is regulated by the Illinois Commerce Commission and operates electric distribution and natural gas distribution businesses in the state. Ameren serves about 1.2 million electric and 0.1 million gas customers in Missouri and 1.2 million electric and 0.8 million gas customers in Illinois.

In order to provide cost-effective and sustainable energy for its customers, Ameren is investing in the energy grid and transitioning electric power generation. The energy grid is expected to be increasingly more important and valuable to Ameren's customers, the communities they serve and their shareholders. Ameren is investing in the modernization of its electric and gas transmission and distribution operations to make them safer, smarter and more resilient. They also plan to invest in smart meters and digital technologies to provide their customers with greater tools to manage energy usage. Based on Ameren's February 2017 Plan, electric and gas transmission and distribution investments are expected to comprise 74 percent of total rate base by the end of 2021. They continue to advance research and use of innovative technologies to increase operating efficiencies, strengthen the energy grid and create value-added energy solutions for their customers.

Ameren is transitioning the sources of electric power generation to a cleaner, more diverse portfolio. Investments in coal-fired generation expected to become only 13 percent of total rate base by the end of 2021 under February 2017 plan. Ameren also recently filed with the MOPSC a new 20-year Ameren Missouri Integrated Resource Plan (IRP) which expands use of renewable generation. The IRP is filed every three years, examines electric customers' projected long-term energy needs and describes Ameren Missouri's preferred approach to meeting those needs in a cost-effective fashion that maintains system reliability. Ameren is taking steps to increase the amount electric power from wind and solar generation. Ameren is planning to add at least 700 megawatts (MWs) of wind generation by 2020, which represents an investment of approximately \$1 billion. Over the next 10 years, 100 MWs of solar generation is to be added, with 50 MWs expected by 2025. The potential exists for additional renewable generation as a result of improving technology and economics. Ameren will be retiring over 50 percent (approximately 2,750 MWs) of its existing coal-fired power plants. The coal-fired Meramec Energy Center in south St. Louis county is scheduled to close in 2022 and the Sioux power plant in St Charles county is scheduled to close in 2033. In addition, energy efficiency programs will continue. The combined Missouri and Illinois electric energy efficiency spend over \$150 million annually. Ameren is targeting substantial reductions in carbon dioxide (CO<sub>2</sub>) emissions with a 35 percent reduction by 2030, 50 percent by 2040 and 80 percent reduction in emissions by 2050.

### **III. Air Quality and Health- Beyond the Lungs and Heart** **- Jay Turner, Ph.D., Washington University**

To evaluate and quantify environmental risk and health consequences/overall disease burden on a global basis, Disability Adjusted Life Year (DALY) is calculated. DALY takes into account average life expectancy and years of productivity lost due to ill health, disability or early death and is expressed as cumulative number of years lost. For example, in China the top five leading DALY risk factors include dietary risks, high blood pressure, smoking followed by ambient air pollution and household air pollution. The ambient and household air pollution risk factors impact cardio, circulatory and chronic respiratory diseases as well as cancer. To estimate the burden of disease globally, researchers examined 84 risk factors to estimate the burden of disease. The top five risk factors accounting for 44 percent of the total DALY burden include: malnutrition; dietary risk factors; high blood pressure; tobacco; and ambient and household air pollution combined. Air pollution accounted for seven percent of DALY burden. When the risk factors are stratified by socio-economic factors, find that air pollution is the number two risk factor for low income/poorer countries, sixth for middle income countries and tenth in higher income countries.

Ambient air pollution is associated with numerous adverse health impacts. Previous assessments of global attributable disease burden have been limited to urban areas or by coarse spatial resolution of concentration estimates. Recent developments in remote sensing, global chemical-transport models, and improvements in coverage of surface measurements have facilitated a virtually complete spatially-resolved global air pollutant concentration estimates. Much of health impact analysis of air pollution has focused on acute and chronic respiratory and cardiovascular impacts. There is also impact day-to-day and short term impact can vary. In 2005, 89 percent of the world's population lived in areas where the World Health Organization (WHO) fine particle matter (PM<sub>2.5</sub>) annual average Air Quality Guideline of 10 micrograms/cubic meter ( $\mu\text{g}/\text{m}^3$ ) was exceeded. Most fine particulate matter (PM) comes from fuel combustion, both from mobile sources such as vehicles and from stationary sources such as power plants, industry, households or biomass burning. Globally, 32 percent of the population lived in areas exceeding the WHO Level 1 Interim Target of  $35 \mu\text{g}/\text{m}^3$ , driven by high proportions in East (76 percent) and South (26 percent) Asia. The highest seasonal ozone levels were found in North and Latin America, Europe, South and East Asia, and parts of Africa.

PM is associated with a broad spectrum of acute and chronic illness, such as lung cancer, chronic obstructive pulmonary disease (COPD) and cardiovascular diseases. Worldwide, PM pollution is an environmental health problem estimated to cause about 25 percent of lung cancer deaths, eight percent of COPD deaths, and about 15 percent of ischemic heart disease and stroke. Low- and middle-income countries disproportionately experience this burden. Numerous epidemiological studies found a strong exposure-response relationship between PM for acute, short-term effects (premature mortality, hospital admissions), and long-term (chronic) or cumulative health effects (morbidity, lung cancer, cardiovascular and cardiopulmonary diseases). Current research on airborne particle-induced health effects is investigating the critical characteristics of PM that determine their biological effects. Several independent groups of investigators have shown that the size of the airborne particles and their surface area determine the potential to elicit inflammatory injury, oxidative damage, and other biological effects. These effects are stronger for fine and ultrafine particles because they can penetrate deeper into the airways of the respiratory tract.

Given that PM<sub>2.5</sub> is a mixture of multiple components, it has been of high interest to identify its specific health-relevant physical and/or chemical features. A time-series study was conducted of PM<sub>2.5</sub> levels and cardiorespiratory emergency department (ED) visits in the St. Louis, Missouri–Illinois metropolitan area, using two years of daily PM<sub>2.5</sub> and PM<sub>2.5</sub> component measurements (including ions, carbon, particle-phase organic compounds, and elements) from the St. Louis–Midwest Supersite in East St. Louis. Modeling was performed to assess short-term associations between daily cardiorespiratory ED visit counts and daily levels of 24 selected pollutants. The results found a robust association between respiratory-associated ED visits with ozone. For asthma/wheeze, associations were strongest with ozone and nitrogen dioxide; observed associations of asthma/wheeze with PM<sub>2.5</sub> and its components were attenuated in two-pollutant models with these gases. Combustion-related components of the pollutant mix showed particularly strong associations with cardiorespiratory ED visit outcomes.

Epidemiology studies looking at the relationship between air pollution and neurodegenerative effects such as dementia (including Alzheimer's dementia) have been conducted. These studies examine how particulate matter can reach the brain via circulation (bypassing blood-brain barrier) or by inhalation (nasal passages to the brain). Cardiovascular and cerebrovascular disease appear

to promote cognitive decline and dementia. A 10- $\mu\text{g}/\text{m}^3$  increment in long-term PM exposure is cognitively equivalent to aging by approximately 2 years. Pro-inflammatory responses, e.g. plasma fibrinogen formation and reactive oxidant species (ROS) causing oxidative stress and the body's response is inflammation. Acute inflammation could result in blood clots while chronic inflammation could lead to hardening of the arteries.

Washington University is participating in a National Institute of Health (NIH) funded study of cognitive and motor impacts of workers and residents resulting from exposure to airborne manganese. Parkinson's disease is one potential effect of high exposure. Research area is downwind of the largest manganese mine and smelter in South Africa.

Dr. Turner's lab is participating in a research project in Louisville, Kentucky that involves the interface between air quality and urban planning. In a neighborhood located next to an active roadway, a vegetated buffer is being designed and installed. The Federal Highway Administration and The Nature Conservancy have contributed funding to this \$8 million project in order to evaluate the efficacy of such a barrier in removing air pollutants. Project will also examine psycho-social impacts also, stress and noise levels. Dr. Turner's lab will be performing measurements before and after construction.

#### **IV. 2017 Ozone Season** **-Carl Lawrence, East-West Gateway Council of Governments**

The 2017 ozone season runs from March 1 through October 31. East-West Gateway acts as a clearinghouse for one-hour ozone (from 9 a.m. to 9 p.m.) and eight-hour ozone concentrations provided by Missouri Department of Natural Resources (MoDNR) and the Illinois Environmental Protection Agency (Illinois EPA). EWG performs initial quality assurance screening, tracks exceedances of the eight-hour ozone standard and prepares weekly and monthly reports. This information is submitted to our partner agencies and EPA Region 7 and posted on-line. Ozone data comes from a network of ten ozone monitors in the St. Louis non-attainment area (six in Missouri and four in Illinois). Information is also collected from five transport/tracking monitors located north and south of the region. In 2015 the eight-hour ozone standard was strengthened to 70 parts per billion (ppb). An exceedance of the 2015 standard at a monitor occurs when an eight-hour average is greater than 70 ppb. For 2017 there were 10 days with 21 exceedances. The transport/tracking area had five days with seven exceedances. Staff tracked the number of exceedances of 2015 standard by year for 1999-2017 and calculated a five-year running average of exceedances. The five-year average continues to decrease. The number of active monitors in the region has gone from 16 to 10.

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

Clean Cities is finishing up a grant application and are waiting to hear about the next round of DERA grants. There is one more shuttle bus to be delivered. Clean Cities is getting ready for the VW stakeholders meetings Missouri will hold. There will not be an Eco City display at 2018 car show as funding from the Metropolitan St. Louis Sewer District (MSD) is not available for this effort. Clean Cities and others have begun to work to have CNG training here.

## **VI. Update Activities of the States**

- **Missouri Department of Natural Resources**
- **Illinois Environmental Protection Agency**

The Missouri Air Conservation Commission (MACC) is meeting on Thursday October 26, 2017 in Springfield. On the agenda is the adoption for re-designation of portion of Jefferson County to attainment of the sulfur dioxide (SO<sub>2</sub>) standard. The next meeting is scheduled for December 7, 2017 in Jefferson City.

The ozone re-designation and Maintenance Plan request for 2008 standard for the St. Louis area is under review by EPA. For the 2015 ozone standard, Missouri submitted to EPA boundary recommendations in 2016. It has been decided to revisit these recommendations and include 2017 ozone season data. It is anticipated that Missouri's boundary recommendations will be revised but the schedule for submission is not certain. In August, Missouri received a letter from EPA identifying what their proposed boundary designations for the 2010 sulfur dioxide (SO<sub>2</sub>) standard would be based on the Data Requirements rule. After that, Missouri has the opportunity to provide additional information to EPA. On October 23, MoDNR staff submitted additional information to EPA concerning EPA's classification of Greene County as unclassifiable.

The final trust document for the Volkswagen/EPA settlement was filed October 2, 2017. In Missouri, the Air Pollution Control Program (APCP) at MoDNR is the lead. There is going to be a kick-off meeting for stakeholders on October 30 in Jefferson City. MoDNR has a dedicated web page with links and examples of potential projects. The next step is to develop a plan outlining how the initial allocation of \$41 million is to be spent. It is anticipated that the plan will be completed in spring 2018.

In Illinois, the request for re-designation of the Metro East counties to attainment for the 2008 ozone standard is moving forward at EPA in signature. The request for re-designation of Granite City and Chicago non-attainment areas to attainment for lead standard was published in the Federal Register as a direct final rule and should be completed by EPA shortly.

Illinois EPA is working on attainment designation for the SO<sub>2</sub> non-attainment area surrounding Alton Steel in Madison County.

## **VII. Other Business**

The East-West Gateway Annual Meeting is on November 17. OneSTL has a survey out until November 17 concerning the goals which came out of the Sustainability Summit and workshops from earlier this year and how to achieve them.

## **VIII. Adjournment**

The next AQAC meeting date is set for January 30, 2018. There being no other business the meeting of the Air Quality Advisory Committee was adjourned.