

# Air Quality and Sustainability Highlights

Prepared by the Office of Natural  
Environment Federal Highway Administration



U.S. Department of Transportation  
Federal Highway Administration

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## Announcements and Recent Events

### Final Appendix W Rulemaking: Replacement of CALINE3

On December 20, 2016, the U.S. EPA signed a final rule that revises the Guideline on Air Quality Models. The Guideline provides EPA-recommended models and other techniques, as well as guidance for their use, for predicting ambient concentrations of air pollutants. The U.S. EPA is finalizing replacement of CALINE3 with AERMOD as the preferred Appendix A model for refined mobile source applications including fine particle pollution (PM<sub>2.5</sub>, PM<sub>10</sub>) and carbon monoxide (CO) hot-spot analyses. The transition period for the use of AERMOD for these refined modeling applications was extended to 3 years and the use of CAL3QHC for CO screening analyses was retained. The effective date is March 21, 2017. For more information, including a copy of the final rule, a fact sheet, a Technical Support Document (TSD), and EPA contact information, see [https://www3.epa.gov/ttn/scram/appendix\\_w-2016.htm](https://www3.epa.gov/ttn/scram/appendix_w-2016.htm).

### FHWA Sessions on Air Quality and Sustainability at the 2017 Transportation Research Board Annual Meeting

FHWA Office of Planning, Environment, and Realty (HEP) staff participated in several sessions related to air quality and sustainable transportation at the 96<sup>th</sup> Transportation Research Board Annual Meeting, which was held January 8-12, 2017, in Washington, DC.

- The *Innovations in Emission and Air Quality Modeling and Measurement* session presented new approaches in transportation air quality modeling and monitoring. These included new tools (e.g., Unmanned Aerial Vehicle), emerging technologies (e.g., Connected and Autonomous Vehicles), and new applications (e.g., using noise barriers to mitigate project-level air pollution).
- The *Sustainability in Geological and Geoenvironmental Engineering* session addressed the desire to initiate a “paradigm shift” in the way that transportation design engineers, planners, and other transportation professionals think about sustainability and how to incorporate it into their daily practices.
- *Advances in Emission and Air Quality Modeling* focused on modelling of light- and heavy-duty vehicle emissions at various scales with the objective of improving emission estimates through analysis of the effect speed inputs. Air quality effects of heavy-duty vehicle movements were also presented.

- *Tracking Progress in DOTs' Rapid Shift Areas* discussed the indicators needed or that are working for governments making the de-carbonization, health, access for all, electric vehicle, automated vehicle, and shared vehicle transitions. Starter sets of indicators were presented and distributed.
- The *Transportation Performance Management: The Final Rules for Pavement, Bridges and System Performance* session included a presentation and discussion on CMAQ performance measures.
- The *Planning for Climate Change: Adaptation, Resilience, and Mitigation* poster session showcased successful approaches to vulnerability assessments and adaptation evaluation from 2013-2015 FHWA climate resilience pilot program.
- The *Current Issues in Transportation and Air Quality* poster session highlighted cutting edge research in air quality modeling and analysis.
- The *Current Issues in Transportation-Related Noise and Vibration* poster session highlighted the latest research in transportation and noise issues.
- *Lessons Learned for Incorporating Climate Change into Transportation Engineering: Synthesis* presented a sample of FHWA-conducted case studies that demonstrate lessons learned for four disciplines: coastal engineering, inland hydrology, geotechnology, and pavement engineering. The session also briefly introduced the newest guidance that FHWA has released on this topic.
- The *Alternative Fuel and Advanced Technology Vehicles: Keeping Up with Rapidly Changing Technology Options* workshop discussed the use of advanced vehicle technologies and alternative fuel use in a rapidly changing environment. The technology to support these vehicles and fueling infrastructure has rapidly evolved over the last 5 years and will continue to do so in the future. The workshop provided an overview of some of the technology options available today and provided a preview of some of the newer innovations that could shape the transportation sector in the future.
- The *FHWA Office of Planning, Congestion Mitigation and Air Quality Improvement Program – CMAQ* booth highlighted the work of the Air Quality and Noise Abatement Team administering air quality and noise programs designed to lessen the impacts of transportation related noise and exhaust emissions.
- The *Sustainable Transportation and Resilience* booth showcased FHWA's sustainability self-assessment tool, INVEST, and FHWA tools to help state, regional, and local agencies reduce transportation greenhouse gas emissions and prepare the U.S. transportation system for the impacts of climate change.

## **U.S. Environmental Protection Agency Proposes 2015 Ozone Standard Implementation Rule**

On November 17, 2016, the U.S. Environmental Protection Agency (U.S. EPA) posted the proposed rule [\*Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classifications and State Implementation Plan Requirements\*](#) in the Federal Register. The U.S. EPA is proposing nonattainment area classification thresholds and implementation requirements for the strengthened 2015 ozone national ambient air quality standards (NAAQS) that were promulgated on

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October 1, 2015. The proposal is largely an update to the implementing regulations previously promulgated for the 2008 ozone NAAQS, and the U.S. EPA proposes to retain without significant revision the majority of those provisions to implement the 2015 ozone NAAQS. The proposal addresses the timing of attainment dates for each nonattainment area classification and a range of nonattainment area state implementation plan (SIP) requirements for the 2015 ozone NAAQS. The proposed SIP requirements pertain to attainment demonstrations, reasonable further progress (RFP) and associated milestone demonstrations, reasonably available control technology (RACT), reasonably available control measures (RACM), major nonattainment new source review (NNSR), emission inventories, the timing of required SIP submissions, and compliance with emission control measures in the SIP. The proposed rule also addresses the revocation of the 2008 ozone NAAQS, anti-backsliding requirements that would apply when the 2008 ozone NAAQS are revoked, and reconsideration of the ozone NAAQS interprecursor trading (IPT) provisions. The U.S. EPA is proposing two alternative options for revocation of the 2008 ozone NAAQS: 1) revoke the 2008 ozone NAAQS for all areas and purposes one year after designations for the 2015 NAAQS are effective or 2) revoke the 2008 ozone NAAQS only in areas designated attainment for the 2008 NAAQS at time of its revocation, and later for areas upon re-designation to attainment for the 2008 or 2015 NAAQS. The comment period for the proposed rule closes on February 13, 2017. More information about the proposed rule can be found at <https://www.epa.gov/ozone-pollution/implementation-2015-national-ambient-air-quality-standards-naaqs-ozone-state>.

### **U.S. EPA Posts Update to MOVES2014a**

The U.S. EPA posted an [update to MOVES2014a](#) in November 2016. The update fixes issues with the MOVES Fuel Wizard and updates emission rates for dioxins and furans. The Fuel Wizard is a tool, accessible via the Fuels tab in the County and Project Data Managers, which allows users to create gasoline fuels that are not represented in the default on-road fuel supply. The U.S. EPA recommends that the Fuel Wizard be used whenever any of the following fuel properties of gasoline and gasoline-ethanol blends are changed in the Fuel Formulation. The Fuel Wizard updates other gasoline properties to account for the changes entered by the user. The U.S. EPA discovered an error in the Fuel Wizard that, in some cases, can result in incorrect adjustments to fuel formulations when users change the ethanol content of the fuel. The effects of these adjustments on emissions are small, but the U.S. EPA recommends that MOVES users who plan to use the Fuel Wizard install and use the update to MOVES2014a for all future work. In addition, emission rates for dioxins and furans from on-road and non-road vehicles are now reported in absolute mass, rather than in terms of toxic equivalency.

## **Meetings, Conferences, and Workshops**

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### **16th Transportation Research Board National Transportation Planning Applications Conference**

Planning is underway for the [16<sup>th</sup> TRB National Transportation Planning Applications Conference](#). It will be held in Raleigh, North Carolina, on May 14-18, 2017, at the Sheraton Hotel, Downtown Raleigh. The conference focuses on providing opportunities to showcase new transportation planning techniques and methods emphasizing practical, innovative, and timely technical and policy approaches to transportation planning. Presentations, workshops, discussion sessions, and tutorials are all expected to be a part of the 2017 program, continuing the focus on practical, innovative, and timely techniques for solving planning problems. Additional conference details and registration information will be forthcoming in early 2017.

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## 2017 International Conference on Ecology and Transportation Livability

The Transportation Research Board is co-sponsoring the [2017 International Conference on Ecology and Transportation](#) on May 14-18, 2017, in Salt Lake City, Utah. The conference is designed to explore the broad range of ecological issues related to transportation systems in the areas of development, policy, and administration as a means to help enhance project development processes and the ecological sustainability of transportation systems.

## 2017 Southern Transportation and Air Quality Summit (STAQS)

The 2017 Southern Transportation and Air Quality Summit (STAQS) will be held at the North Central Texas Council of Governments (NCTCOG) in Arlington, Texas on August 29-30, 2017. Registration information and conference details will be made available soon.

## Reminders

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### Congestion Mitigation and Air Quality Improvement Program Emission Reductions Calculator Updated

The FHWA Office of Natural Environment has developed a series of tools to provide technical support and resources for the implementation of the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. CMAQ project justifications, as well as annual reporting, require the development of reliable air quality benefit estimates. Realizing that every potential project sponsor may not have the capacity for developing independent air quality benefit estimates, the FHWA has undertaken the initiative of developing a series of spreadsheet-based tools to facilitate the calculation of representative air quality benefit data. This CMAQ Emission Reductions Calculator is offered only as an additional resource to assist DOTs, MPOs, and project sponsors in the project justification process. Agencies and individuals using an existing methodology to generate emissions benefit information are welcome to continue their current practice. The first module, focused on traffic flow improvements, is available on the [FHWA CMAQ Emissions Calculator Toolkit](#) webpage and was updated in December 2016. The second module, Advanced Diesel Truck/Engine Technologies, was posted in January 2017. For more information, please contact Mark Glaze at [Mark.Glaze@dot.gov](mailto:Mark.Glaze@dot.gov) or (202) 366-4053.

### FHWA Updated Interim Guidance on Mobile Source Air Toxics Analysis in NEPA Documents

The Federal Highway Administration (FHWA) released the [Updated Interim Guidance for Mobile Source Air Toxic \(MSAT\) Analysis in National Environmental Policy Act \(NEPA\) Documents](#). Beginning October 7, 2016, project sponsors should use MOVES2014 to conduct emissions analysis for NEPA purposes. The guidance provides a tiered approach for analyzing MSAT in NEPA documents. For more information, please contact Victoria Martinez at [Victoria.Martinez@dot.gov](mailto:Victoria.Martinez@dot.gov) or (787) 771-2524.

### FHWA Designates Alternative Fuel Corridors

On November 3, the FHWA [announced](#) 55 routes as alternative fuel corridors. The fuel designations include electric, hydrogen, propane, and natural gas, as directed in the FAST Act. Corridors were designated as either “signage-ready” (there are sufficient facilities to warrant signage along the corridor) or “signage-pending” (currently there are insufficient facilities available to warrant signage). The designations follow a [July 22 Federal Register Notice](#) seeking corridor nominations and will serve as the

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basis for a national network that can grow in the future. More information is available on FHWA's [Alternative Fuel Corridor website](#).

### **FHWA Releases Updated Greenhouse Gas Emissions Reduction Policy Analysis Tool**

The FHWA recently released an updated version of EERPAT, the Energy and Emissions Reduction Policy Analysis Tool. EERPAT is an integrated, state-level modeling system designed specifically to evaluate strategies for reducing surface transportation greenhouse gas emissions. The new version of the tool (v3.0) has an improved graphical user interface that provides a simplified method for interacting with the tool for those users who are not proficient in the R software language. The redesigned EERPAT website now includes example applications of the tool from three state DOTs: Maryland, Vermont, and Washington. The tool is available at the FHWA [EERPAT website](#).

### **Recording Available: FHWA Webinar on CEQ Climate Change Guidance**

The FHWA posted a recording of the agency's October 4, 2016, webinar on the White House Council on Environmental Quality (CEQ)'s *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. The webinar provided an overview of the CEQ's climate change guidance and presented suggestions for approaches to address the guidance during NEPA reviews. To view the recording, go to the FHWA [Climate Adaptation Webinars](#) webpage.

### **FHWA Publishes Nonattainment Area Maps for PM<sub>2.5</sub> 2012 Standard**

On September 20, 2016, the FHWA posted maps of areas designated nonattainment for the 2012 NAAQS for PM<sub>2.5</sub>. These maps are available for review and download at [https://www.fhwa.dot.gov/environment/air\\_quality/conformity/maps/pm25\\_2012/](https://www.fhwa.dot.gov/environment/air_quality/conformity/maps/pm25_2012/).

### **MOVES Model Review Work Group**

The U.S. EPA initiated a Federal Advisory Committee Act MOVES Model Review Work Group to provide input on the development of the next official version of MOVES, expected to be released in 2018 at the earliest. Presentations and meeting summaries are available on the Work Group website: <https://www.epa.gov/moves/federal-advisory-committee-act-faca-moves-model-review-work-group>.

### **U.S. EPA Guidance on Revocation of 1997 PM<sub>2.5</sub> NAAQS**

In October 2016, the U.S. EPA published guidance on revocation of the 1997 NAAQS for PM<sub>2.5</sub>. The guidance describes how the revocation of the 1997 primary annual PM<sub>2.5</sub> NAAQS will be implemented and when transportation conformity stops applying for this NAAQS. It fulfills a commitment the EPA made in November 2015 to provide additional information once the EPA finalized the PM<sub>2.5</sub> state implementation plan (SIP) requirements rule. An FHWA FAQ on revocation of the standard will be forthcoming. The U.S. EPA guidance is available at <https://www.epa.gov/sites/production/files/2016-10/documents/420b16072.pdf>.

### **U.S. EPA Publishes Revisions to Exceptional Events Guidelines**

On October 3, 2016, the U.S. EPA published revisions to its "exceptional events" guidelines in the *Federal Register*, giving potential challengers 60 days to appeal to the U.S. Court of Appeals for the

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District of Columbia Circuit. The rules are intended to spell out the conditions under which states can effectively get a pass for air pollution violations stemming from wildfires, stratospheric ozone intrusions, and other forces outside their control. The final Exceptional Events Rule contains procedural requirements, requirements for air agency demonstrations, criteria for EPA's approval of the exclusion of event-influenced air quality data, and requirements for air agencies to take appropriate and reasonable actions to protect public health from exceedances or violations of the NAAQS. States had complained that the current application process, dating to 2007, is costly and cumbersome. To review the guidelines, please visit <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0229-0135>.

### **Revision to the Near-Road NO<sub>2</sub> Minimum Monitoring Requirements NPRM**

On May 16, 2016, the U.S. EPA proposed revisions to the minimum monitoring requirements for near-road nitrogen dioxide (NO<sub>2</sub>) monitoring by removing the existing requirements for near-road NO<sub>2</sub> monitoring stations in Core Based Statistical Areas (CBSAs) having populations between 500,000 and 1,000,000 persons, that were due by January 1, 2017. Current near-road NO<sub>2</sub> monitoring data indicate air quality levels in the near-road environment are well below the NAAQS for the oxides of nitrogen. In light of this information, and due to the relationship between population, traffic, and expected NO<sub>2</sub> concentrations in the near-road environment, it is anticipated that measured near-road NO<sub>2</sub> concentrations in the relatively smaller CBSAs would exhibit similar, and more likely, lower concentrations, than what is being measured in larger urban areas. For more information, see <https://www.gpo.gov/fdsys/pkg/FR-2016-05-16/pdf/2016-11507.pdf>.

## **Training Opportunities**

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### **National Transit Institute (NTI) Introduction to Transportation Conformity Course Scheduled**

The [NTI's Introduction to Transportation Conformity course](#) is scheduled for January 31-February 2, 2017, in Houston and March 28-30, 2017, in Salt Lake City. The 2.5-day course will present basic information about transportation conformity requirements and the relationship of the transportation and air quality planning processes. Registration can be made via NTI's website.

### **U.S. DOT Every Place Counts: Leadership Academy Releases Transportation Toolkit**

The U.S. Department of Transportation launched the *Every Place Counts: Leadership Academy* to help demystify the transportation process for planners, community leaders, and the public at large. Several new Leadership Academy resources, including a Transportation Toolkit, Quick Guide, and Facilitator Guide, are now available for download. These resources are meant to provide interested individuals with the resources to host Leadership Academies in their own communities. The resources are available at <https://www.transportation.gov/leadershipacademy>.

### **Transportation Research Board Straight to Recording for All: Climate Resilient and Sustainable Transportation - Strategic Economic and Financial Management Challenges and Opportunities with FAST Act**

The TRB recorded a series of videos in September 2016 that illustrate how transportation agencies can comply with new requirements under the FAST Act. Specifically, these videos discuss how highway and transit projects can adjust to extreme weather events with regards to economic and management

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decisions. The videos are available on-demand at no cost at <http://www.trb.org/Environment/Blurbs/175113.aspx>.

### **CMAQ 101 Training**

The FHWA posted a 27-minute YouTube video on the CMAQ program. The video provides a basic introduction to the program, how CMAQ funds are distributed to states, and the types of projects eligible for the CMAQ program. The training is available at <https://www.youtube.com/watch?v=XKXcs0WtNHA&feature=youtu.be>. For more information about the CMAQ program, please contact Mark Glaze at [mark.glaze@dot.gov](mailto:mark.glaze@dot.gov) or (202) 366-4053.

### **Air Quality Planning Web Course Available at No Cost**

The National Highway Institute (NHI) Air Quality Planning web-based training series is designed for transportation practitioners. It includes four modules: Clean Air Act Overview (FHWA-NHI-142068), State Implementation Plan (SIP) and Transportation Control Measure (TCM) Requirements and Policies (FHWA-NHI-142069), SIP Development Process (FHWA-NHI-142070), and Transportation Conformity (FHWA-NHI-142071). All courses are free. For more information, visit <http://www.nhi.fhwa.dot.gov/> and search Air Quality Planning or look for the specific course number. Please contact Karen Perritt at (202) 366-9066, or [Karen.Perritt@dot.gov](mailto:Karen.Perritt@dot.gov) with any questions or comments.

### **MOVES2014a Training Materials**

The U.S. EPA posted updated training materials and schedule for the MOVES2014a two-day hands-on training course at <https://www.epa.gov/moves/moves-training-sessions>. On the same webpage, the U.S. EPA also posted an abbreviated version of the MOVES2014a course materials used as a one-day training course. MOVES users who did not attend a previous hands-on training session can use the “MOVES2014 Training Materials” as a self-taught course.

### **MySQL Training for MOVES Model Users**

Two training opportunities are available for MOVES model users. A three-hour webinar provides an introduction to MySQL Query Browser and MOVES interface. A six-hour training over two days will enable users to do MySQL programming and to write their own MySQL scripts and to manipulate MySQL databases including MOVES input and outputs. For more information or to schedule training, please contact Paul Heishman at [Paul.Heishman@dot.gov](mailto:Paul.Heishman@dot.gov).

### **FHWA Resource Center Training Activities**

FHWA’s Resource Center Air Quality Technical Services Team is available to offer MOVES training, and information is available at the [Resource Center website](#).

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## Contacts

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### **[FHWA Resource Center Air Quality Team](#)**

Past issues of the *Air Quality and Sustainability Highlights* are available on FHWA's website: [https://www.fhwa.dot.gov/environment/air\\_quality/conformity/highlights/](https://www.fhwa.dot.gov/environment/air_quality/conformity/highlights/). Past issues of the *Air Quality and Sustainability Newsletter* are available on FHWA's website: <https://www.fhwa.dot.gov/environment/sustainability/newsletter/>.

Please e-mail [Victoria.Martinez@dot.gov](mailto:Victoria.Martinez@dot.gov) with any suggestions for future issues.