

Air Quality and Climate Change Highlights

*Prepared by the Office of Natural Environment
Federal Highway Administration*



U.S. Department of Transportation
Federal Highway Administration

Table of Contents

Announcements and Recent Events.....	1
Research	4
Reminders	5
Training Opportunities	7
Contacts	8

Announcements and Recent Events

Final Rule on the 2008 NAAQS for Ozone State Implementation Plan (SIP) Requirements

On February 13, 2015, the U.S. EPA issued a final rule that addresses implementation requirements for the 2008 National Ambient Air Quality Standards (NAAQS) for ground-level ozone. The rule was effective on April 6, 2015. Two issues this final rule addressed affect transportation conformity implementation: (1) The U.S. EPA revoked the 1997 ozone standard for all purposes, including transportation conformity. Therefore, transportation conformity for the 1997 ozone NAAQS no longer applies in 1997 nonattainment/maintenance areas after April 6, 2015; (2) Attainment dates for the 2008 ozone NAAQS were clarified for each classification. The attainment dates may affect transportation conformity analyses, especially for areas using budgets to determine conformity determinations. Areas should be aware that they must conduct a regional analysis for the appropriate attainment year for the 2008 ozone NAAQS. Besides addressing these two issues, the final rule also addressed other implementation issues for the standard, such as state implementation plan (SIP) submission due dates, and established anti-backsliding requirements for areas remaining nonattainment for the 1997 ozone NAAQS. Information on the final rule can be found at <http://www.epa.gov/glo/actions.html#impl>.

EPA Proposes New Rule for Implementing the NAAQS for PM_{2.5}

On March 10, 2015, the U.S. EPA proposed requirements for implementing the National Ambient Air Quality Standards (NAAQS) for fine particle pollution (PM_{2.5}) in areas that are designated nonattainment for these standards. These requirements would apply to current and future fine particle pollution standards. The proposed requirements would apply to state, local, and tribal air agencies developing plans that outline how nonattainment areas will meet and maintain fine particle standards, including the PM_{2.5} standards established in 2012. This proposal presents options for how air agencies could meet state implementation plan (SIP) requirements under the Clean Air Act's general and PM_{2.5}-specific nonattainment area planning provisions, such as attainment dates, emission inventories, control strategy requirements, demonstrating reasonable further progress, and criteria for reclassification. As part of this action, the U.S. EPA is proposing options for revoking the 1997 primary annual PM_{2.5} standard of 15 µg/m³, because the revised 2012 primary annual standard of 12 µg/m³ is more protective of public health. The proposed rule also would replace the U.S. EPA's 2007 PM_{2.5} Implementation Rule and parts of the

2008 PM_{2.5} New Source Review Rule, which were remanded to the U.S. EPA by the U.S. Court of Appeals for the D.C. Circuit in January 2013. The public comment period for the proposed rule has been extended to May 29, 2015. Additional information on the proposed rule can be found at <http://www.epa.gov/pm/actions.html>.

EPA Releases MOVES2014 Project-Level CO Analysis Guidance

New project-level carbon monoxide (CO) analysis guidance was released by the U.S. EPA in March 2015. It describes how to use the MOVES2014 emissions model to estimate CO emissions from transportation projects, including roadway intersections, highways, transit projects, parking lots, and intermodal terminals. The guidance can be applied when using MOVES2014 to complete any project-level quantitative CO analysis, including hot-spot analyses for transportation conformity determinations, modeling project-level emissions for SIP development, and completing NEPA analyses. The guidance applies in all states other than California, where the most recently approved version of the EMFAC model is used. The guidance can be found at www.epa.gov/otaq/stateresources/transconf/documents/420b15028.pdf.

Virtual Framework for Vulnerability Assessment

FHWA's *Climate Change and Extreme Weather Vulnerability Assessment Framework* is a guide for transportation agencies interested in assessing their vulnerability to climate change and extreme weather events. It gives an overview of key steps in conducting vulnerability assessments and uses in-practice examples to demonstrate a variety of ways to gather and process information. The framework is comprised of three key steps: defining study objectives and scope; assessing vulnerability; and incorporating results into decision making. The six modules in the framework are provided on the agency's Climate Change Adaptation website. Each module includes an overview, a summary of key steps, an introductory video, and links to case studies, tools, and other resources. Several of the modules include tools developed by the FHWA to help transportation agencies implement their assessments. The virtual framework can be found at:

http://www.fhwa.dot.gov/environment/climate_change/adaptation/adaptation_framework/. For more information, please contact Robert Hyman at Robert.Hyman@dot.gov or (202) 366-5843.

Gulf Coast Study Phase 2 Tools Developed

The U.S. DOT conducted a comprehensive, multi-phase study of the Central Gulf Coast region to better understand climate change impacts on transportation infrastructure and identify potential adaptation strategies. For Phase 2 of the study, the U.S. DOT sought to develop methods for evaluating vulnerability and adaptation measures that could be used by other transportation agencies and then pilot tested them on the transportation system in Mobile, Alabama. Several tools and resources were developed from this effort and are now available to transportation practitioners.

The *Sensitivity Matrix* is an MS Excel spreadsheet tool that documents the sensitivity of roads, bridges, airports, ports, pipelines, and rail to 11 climate impacts. The *Guide to Assessing Criticality in Transportation Adaptation Planning* discusses common challenges associated with assessing criticality, options for defining criticality and identifying scope, and the process of applying criteria and ranking assets. A criticality assessment provides a structured way to focus on assets that are most important for the functioning of the transportation system. The climate model outputs from the World Climate Research

Programme's Coupled Model Intercomparison Project (CMIP) CMIP3 and CMIP5 databases are used to create the *CMIP3 Climate Data Processing Tool* and the *CMIP5 Climate Data Processing Tool*. The purpose of the tools is to process readily available downscaled climate data at the local level into relevant statistics for transportation planners. The *Vulnerability Assessment Scoring Tool* guides the user through conducting a quantitative, indicator-based vulnerability screen. This involves collecting information about indicators of each vulnerability component and operationalizing that information into relative vulnerability scores. More information on the tools, along with the overall study, can be found at: http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study/index.cfm#11. Further questions and comments can be directed to Robert Hyman at Robert.Hyman@dot.gov or (202) 366-5843.

FHWA Announces Advancing a Sustainable Highway System Webinar Series

FHWA will host webinars in May, June, and July as part of a new webinar series based on [Advancing a Sustainable Highway System: Highlights of FHWA Sustainability Activities](#). The aforementioned report illustrates how sustainability has been incorporated into a wide variety of FHWA programs, projects, policies, processes, and partnerships. Each webinar will highlight a particular section of the report and will feature specific FHWA activities that advance sustainability. The first three webinars will focus on Access and Affordability, Linking Planning and Asset Management, and Sustainable Pavements, respectively. This series will serve as a resource to the public, transportation professionals, and those working within FHWA to help them better understand the various sustainability activities and initiatives moving forward within the Agency. Registration is not required, but the webinar room is limited to 100 participants and is first come, first served. For more information on the webinar series go to https://www.sustainablehighways.dot.gov/FHWA_Sustainability_Activities_Webinars.aspx or contact Connie Hill at Connie.Hill@dot.gov.

March 2015 Installation Package of MOVES2014 Installer

The March 2015 installation package of the MOVES2014 October Release Installer automates configuration of MOVES for Java 8, as needed, and includes updated non-road and on-road post-processing scripts. The previous October 2014 release of MOVES fixed an error in the new non-road portion of MOVES2014, addressed a number of minor issues with the on-road portion, improved the installation process, included small performance improvements, and fixed an error in the spreadsheet to estimate evaporative emissions from vehicles meeting California Zero Emission Vehicle (ZEV) standards. The updated code and database are available on the MOVES website: <http://www.epa.gov/otaq/models/moves/>. The new ZEV spreadsheet is available at <http://www.epa.gov/otaq/models/moves/tools.htm>.

EPA Revises Initial Area Designations for PM_{2.5} NAAQS

On March 31, 2015, the U.S. EPA issued additional or revised initial area designations for several areas and a technical amendment to correct an inadvertent error in the initial area designation for one area for the 2012 annual National Ambient Air Quality Standard (NAAQS) for fine particulate matter (PM_{2.5}). The annual fine particle standard was strengthened to 12 micrograms per cubic meter (µg/m³) in 2012. After working closely with the states, the U.S. EPA is taking additional steps toward completing the routine Clean Air Act process to determine whether areas across the country meet the air quality standard. The additional final designations and technical amendment were published in the *Federal Register*

(<http://www.gpo.gov/fdsys/pkg/FR-2015-04-07/pdf/2015-07948.pdf>) on April 7, 2015. Nonattainment designations are effective April 15, 2015. In areas that are designated nonattainment under the 2012 PM_{2.5} standard, transportation conformity requirements will apply for that standard one year after the designation effective date for metropolitan transportation plans, TIPS, and projects. For more information, please visit: <http://www.epa.gov/pmdesignations/2012standards/regs.htm>.

FHWA Announces 2015 Environmental Excellence Awards

The biennial awards for Environmental Excellence recognize partners, projects, and processes that use FHWA funding sources to go beyond traditional transportation projects and encourage environmental stewardship and partnerships to achieve a truly multi-faceted, environmentally sensitive transportation solution. This year, the Oregon Department of Transportation was the winner in the Excellence in Air Quality Improvement and Climate Change category for its Strategic Assessment of Land Use and Transportation Plans for the Corvallis Area. The Vermont Agency of Transportation won the Excellence in Climate Change Adaptation and Resilience category for its River Science Climate Resiliency Strategy. The Excellence in Environmental Research award went to the New Mexico Department of Transportation for its innovative research project *Right-of-Way (ROW) Carbon Sequestration*. For a complete list of awardees, please visit: http://www.fhwa.dot.gov/environmental_excellence_awards/eea_2015/.

Research

FHWA Webinar Series: Building a Climate Resilient Transportation System – Recordings available

The *Building a Climate Resilient Transportation System* webinar series allowed practitioners to share information, results, and lessons learned through recent work by FHWA/U.S. DOT and State and MPO partners to make the transportation system more resilient to climate change and extreme weather events. The full series is available for viewing on FHWA's website at the link below. There are two tracks in the series. The first track focuses on the processes used in the Gulf Coast Study, Phase 2 (Mobile, Alabama) and transferable methods developed for other agencies to assess the vulnerability of transportation infrastructure. The second track focuses on FHWA's recently completed Climate Resilience Pilot program, which supported 19 pilot projects around the country to assess vulnerabilities and develop strategies to make transportation infrastructure and operations more resilient to climate change and extreme weather events. Recordings are available online at http://www.fhwa.dot.gov/environment/climate_change/adaptation/webinars/.

Infrastructure Voluntary Evaluation Sustainability Tool Case Studies Posted

INVEST (Infrastructure Voluntary Evaluation Sustainability Tool) was developed by the FHWA as a practical, web-based, collection of voluntary best practices, called criteria, designed to help transportation agencies integrate sustainability into their programs (policies, processes, procedures, and practices) and projects. While the use of INVEST is voluntary, it can be used by transportation agencies, such as DOTs, MPOs, Council of Governments, public works departments, and their consultants and partners, to evaluate and aid the integration of sustainability into their programs and projects. Practitioners can now read about how Delaware DOT used INVEST to improve its pavement and rehabilitation program, how Utah DOT implemented sustainability recommendations from their INVEST evaluation to provide significant cost savings to the agency, and how Cape Cod Commission used INVEST to improve their

transportation plan. These case studies can be found at <https://www.sustainablehighways.org/779/case-studies.html>.

FHWA Staff Members Participate in TRB's Annual Meeting

FHWA Office of Natural Environment (HEPN) staff members moderated sessions and made several presentations at the February 2015 TRB annual meeting. This year's theme, "Corridors to the Future - Transportation and Technology," featured over 5,000 presentations, in more than 750 workshops, covering thousands of topics and research trends. Climate resilience was one of the leading topics during the meeting, including a session titled "Climate Resilience: Results and Lessons Learned from FHWA Climate Resilience Pilot Projects." The three-hour workshop featured results from several FHWA-sponsored climate resilience pilot projects conducted by State DOTs and MPOs from 2013 through 2015. The meeting also included a workshop on greenhouse gas emissions mitigation, "Tools for Evaluating Greenhouse Gas Reduction Strategies," which included presentations on FHWA's Infrastructure Carbon Estimator (ICE) Tool and Energy Emissions Reduction Policy Analysis Tool (EERPAT). The "Tools to Support Health and Transportation Planning and Analysis" workshop was conducted, which focused on an ongoing research effort that is developing a framework to better incorporate public health outcomes into the corridor planning process. The action-oriented design provides a step-by-step process for planners to identify stakeholders, needs, resources, data, tools, and transportation solutions that promote healthy outcomes. To access papers or workshop proceedings from the TRB meeting, please visit <http://amonline.trb.org/>.

Reminders

EPA Proposes New Primary and Secondary Ozone Standards

Based on its review of the air quality criteria for ozone (O₃) and related photochemical oxidants and national ambient air quality standards (NAAQS) for O₃, the U.S. EPA proposes to make revisions to the primary and secondary NAAQS for ozone to provide requisite protection of public health and welfare, respectively. The U.S. EPA is proposing to revise the primary standard to a level within the range of 0.065 to 0.070 parts per million (ppm). The secondary standard would be revised to within the range of 0.065 to 0.070 ppm in terms of 3-year average W126 index values, at or below a range of 13–17 ppm-hours. Information on the proposed new rule can be found at <http://www.gpo.gov/fdsys/pkg/FR-2014-12-17/pdf/2014-28674.pdf>. The agency will issue a final rule by October 1, 2015. For more information, please visit http://www.epa.gov/ttn/naqs/standards/ozone/s_o3_index.html.

MOVES2014 Technical Guidance Now Available

On January 9, 2015, the U.S. EPA Office of Transportation and Air Quality posted "MOVES2014 Technical Guidance: Using MOVES to Prepare Emission Inventories in State Implementation Plans and Transportation Conformity" on the EPA website. This version of the MOVES Technical Guidance has been updated for MOVES2014 and provides guidance when using MOVES2014 for SIP and transportation conformity purposes. The document can be found at www.epa.gov/otaq/models/moves/documents/420b15007.pdf.

FHWA Publishes MAP-21 CMAQ Assessment Report

The FHWA-sponsored *Air Quality and Congestion Mitigation Measure Outcomes Assessment Study* has been completed, and the summary of findings and final technical report were posted on the FHWA website http://www.fhwa.dot.gov/environment/air_quality/cmaq/research/outcomes_assessment/ on February 13, 2015. The study was mandated in Section 1113 (c) of Moving Ahead for Progress in the 21st Century Act (MAP-21) directing the examination of the outcomes of actions funded under the Congestion Mitigation and Air Quality (CMAQ) Improvement program since the enactment of the Safe, Accountable, Flexible, Efficient Transportation Efficiency Act: A Legacy for Users (SAFETEA-LU). The study focused on the following three goals: (1) assess and document the emission reduction, air quality, and human health impacts of federally-supported surface transportation actions intended to reduce emissions or lessen traffic congestion and expand on the base of empirical evidence on those impacts; (2) increase the knowledge of other information to more accurately understand the validity of current estimation and modeling routines and ways to improve those routines; and (3) increase the knowledge of factors determining the human health changes associated with these types of transportation actions. For more information, please contact Karen Perritt at Karen.Perritt@dot.gov or (202) 366-9066.

White House Issues New Draft NEPA Guidance

The White House Council on Environmental Quality released a new draft of guidance on December 18, 2014, spelling out how federal environmental reviews should take climate change into account. The proposed new guidance addresses how federal agencies should consider greenhouse gas emissions and the impacts of climate change when conducting reviews under the National Environmental Policy Act (NEPA). More information on the draft guidance can be found at <https://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance>.

New Tools Available for Generating MOVES Inputs

The U.S. EPA has created a series of tools to help generate inputs for MOVES analyses. These tools include MOVES2014 default age distributions, Age Distribution Projection Tool for MOVES2014, and an AADVMT converter for MOVES2014. The tools may be downloaded from the MOVES Tools website: <http://www.epa.gov/otaq/models/moves/tools.htm>. Users should consult the latest version of the MOVES technical guidance for additional information on when to use these tools. For more information about MOVES 2014, please visit <http://www.epa.gov/otaq/models/moves/>.

End of Maintenance Period and Conformity

In October 2014, the U.S. EPA released guidance confirming that transportation conformity no longer applies 20 years after the effective date of the area being re-designated maintenance for a national ambient air quality standard (NAAQS) and EPA approval of the first 10-year maintenance plan (CAA § 175(a)), and the approved maintenance plan did not extend the maintenance period beyond 20 years from designation. In other words, conformity requirements no longer apply to metropolitan transportation plans, TIPs, and FHWA/FTA projects after that date for that particular NAAQS. However, conformity requirements will continue to apply for other transportation-related pollutants for which the area is nonattainment or maintenance. The guidance is available on EPA's website at <http://www.epa.gov/otaq/stateresources/documents/420b14093.pdf>. For questions related to the applicability of conformity at the end of the 20-year maintenance period, please contact Karen Perritt at Karen.Perritt@dot.gov or (202) 366-9066, or Cecilia Ho at Cecilia.Ho@dot.gov or (202) 366-9862.

Training Opportunities

National Transit Institute Offers Two Upcoming Courses

The National Transit Institute (NTI) has scheduled upcoming training courses related to air quality, sustainability, and environmental issues. The first course is on Transit-Oriented Development (TOD) and is scheduled for May 5-6, 2015, in San Antonio, Texas, and September 30-October 1, 2015, in Las Vegas, Nevada. The goal of this course is to help transportation and land use professionals effectively participate in the planning, funding, and implementation of transit-oriented projects that improve the environment, create a sense of community, and boost transit ridership. This course is an intermediate course. Although not required, participants should have a working knowledge of basic transportation, land use planning, transit planning, and operational concepts. The second NTI training opportunity is an Introduction to Transportation Conformity on June 9-11, 2015, in Houston, Texas. The course will present basic information about conformity requirements and the relationship of the transportation and air quality planning processes in order to prepare new or inexperienced agency staff (federal, state, and local) to participate in interagency consultation and work effectively in resolving conformity issues. For course information and registration, please visit <http://www.ntionline.com/>.

EPA Posts MOVES2014 Training Course Material

The U.S. EPA has posted updated training materials for the MOVES2014 two-day hands-on training course at www.epa.gov/otaq/models/moves/training.htm#2. These new training materials were used at the April 2015 MOVES2014 courses in Austin, Texas, and Rocky Hill, Connecticut. On the same webpage, the U.S. EPA has posted an abbreviated version of the MOVES2014 course materials used in the one-day training course offered at the 2015 International Emission Inventory Conference in San Diego, California. MOVES users who are not attending any of these upcoming training sessions 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 his/her own MySQL scripts and to manipulate MySQL databases including MOVES input and outputs. For more information or to schedule training, please contact John Byun at Joon.Byun@dot.gov or Paul Heishman at Paul.Heishman@dot.gov.

Web-based Training Courses Available

A variety of web-based training opportunities are accessible via the FHWA Conformity Website, at http://www.fhwa.dot.gov/environment/air_quality/conformity/training/. Training includes Air Quality Planning, Transportation Conformity, and others. Please contact Karen Perritt at Karen.Perritt@dot.gov or (202) 366-9066 with any questions or comments.

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](#).

Contacts

FHWA Headquarters Air Quality and Transportation Conformity Team

- Cecilia Ho, Cecilia.Ho@dot.gov (202) 366-9862, Team Leader
- Emily Biondi, Emily.Biondi@dot.gov (202) 366-9482
- Mark Glaze, Mark.Glaze@dot.gov (202) 366-4053
- Victoria Martinez, Victoria.Martinez@dot.gov (787) 771-2524
- Karen Perritt, Karen.Perritt@dot.gov (202) 366-9066

FHWA Headquarters Sustainable Transport and Climate Change Team

- Mike Culp, Michael.Culp@dot.gov, (202) 366-9229, Team Leader
- John Davies, JohnG.Davies@dot.gov, (202) 366-6039
- Connie Hill Galloway, Connie.Hill@dot.gov, (804) 775-3378
- Tina Hodges, Tina.Hodges@dot.gov, (202) 366-4287
- Heather Holsinger, Heather.Holsinger@dot.gov, (202) 366-6263
- Rob Hyman, Robert.Hyman@dot.gov, (202) 366-5843
- Rob Kafalenos, Robert.Kafalenos@dot.gov, (202) 366-2079
- Becky Lupes, Rebecca.Lupes@dot.gov, (202) 366-7808
- Diane Turchetta, Diane.Turchetta@dot.gov, (202) 493-0158

[FHWA Resource Center Air Quality Team](#)

Past issues of the *Air Quality and Transportation Conformity Highlights* are available on FHWA's website: http://www.fhwa.dot.gov/environment/air_quality/conformity/highlights/. Past issues of the *Transportation and Climate Change Newsletter* are available on FHWA's website: http://www.fhwa.dot.gov/environment/climate_change/newsletter/.

Please e-mail Victoria.Martinez@dot.gov with any suggestions for future issues.