August/September 2017

Air Quality and Sustainable Transportation 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

FHWA Synthesis Report Details Approaches for Addressing Resilience in Project Development

The Federal Highway Administration (FHWA) recently published a new report, Synthesis of Approaches for Addressing Resilience in Project Development, which incorporates lessons learned and innovations from recent FHWA studies and pilot projects to help transportation agencies address resilience at the project level in engineering-informed adaptation studies. As part of this effort, FHWA and its partners conducted a series of additional Engineering Assessments to develop information for specific transportation asset types and disciplines.

FHWA Opens Call for Alternative Fuel Corridor (AFC) Nominations

The 2017 Alternative Fuels Corridor (AFC) request for designation nominations was released on September 22, 2017. The due date for all nominations is COB November 30, 2017. The request for nominations can be found on the AFC website. For questions or more information on the nomination process please contact Diane Turchetta at 202-493-0158 or diane.turchetta@dot.gov.

Oregon DOT Publishes New report on nature-based solutions for protecting the Oregon Coast Highway

The Oregon Department of Transportation released a final report, Green Infrastructure Techniques for Resilience of the Oregon Coast Highway, documenting the results of an FHWA sponsored pilot project. Oregon DOT developed conceptual designs for three locations along coastal highway US 101 vulnerable to storms and coastal bluff erosion. These designs include cobble beaches, artificial dunes, sand tubes, mechanically stabilized earth, rip rap, and planted terraces. Oregon DOT analyzed the coastal protection potential of these designs using wave runup analysis. Oregon DOT also engaged land use and permitting agencies on design options. The Oregon project was one of five green infrastructure pilots sponsored by FHWA to assess the potential for nature-based solutions to protect coastal roads and bridges from flooding.

FHWA Publishes Summary of Resilience and Transportation Planning and Project Development Peer Exchange

FHWA published a report summarizing the major themes discussed during a peer exchange on resilience in transportation planning and project development that FHWA and U.S. Environmental Protection Agency (EPA) Region 5 jointly organized and convened in Chicago, Illinois. The objective of the meeting was to foster a meaningful exchange of ideas among practitioners in EPA Region 5 States, focused on issues and approaches for addressing greenhouse gas (GHG) emissions analysis and resilience in transportation planning and the project development process. In general, peers agreed that a detailed GHG emissions analysis as part of the NEPA process may be useful for disclosure but likely would not add much value to decision making due to the relatively small differences in emissions between alternatives. The group also discussed the need to assess vulnerabilities and plan for resilience, including the potential increased consideration of climate change and extreme weather events in NEPA Purpose and Need statements. A complete summary is available on the FHWA website.

Photovoltaic Noise Barriers Report Summarizes the Opportunity and Potential for Energy-Producing Noise Barriers on Highways

A recent FHWA report summarizes current practices in photovoltaic noise barriers (PVNBs) globally and discusses the potential benefits of PVNBs in place of, or in addition to, existing noise barriers. PVNBs represent the combination of noise barrier systems and photovoltaic systems in order to mitigate traffic noise while simultaneously producing renewable energy using photovoltaic installations. First deployed in Switzerland in 1989, PVNBs are now found in several countries where transportation agencies have sought ways to find multiple uses of their infrastructure. The PVNB experience documented in literature and supplemented through a series of interviews provides evidence suggesting that noise barriers can be designed to produce renewable energy without compromising their abilities to reduce noise, and do so safely. Given the substantial extent of noise barriers in the country, the potential for solar energy production on American noise barriers is likely at least 400 Gigawatt hours annually, roughly equivalent to the annual electricity use of 37,000 homes, and perhaps much higher.

FHWA Hosts Renewable Energy in Highway Rights of Way Peer Exchange

FHWA hosted a peer exchange in July 2017 to bring together practitioners to discuss issues related to, and approaches for, accommodating renewable energy technologies in highway rights-of-way (ROWs). The peer exchange built upon the findings of the PVNB report described above as well as other FHWA work to provide information and technical assistance to State DOTs to support renewable energy generation in highway rights-of-way, such as a briefing book and a report on alternative uses of the ROW. A recent report summarizes the presentations and discussions at the peer exchange, including presentation topics, discussions, and the challenges and lessons learned from State DOT participants who have undertaken these projects.

Delaware Department of Transportation Considers Context Sensitive Solutions Approach to Incorporate Resilience Practices in the Agency

The Delaware Department of Transportation (DelDOT) hosted a technical assistance meeting in November 2016 to: apply a Context Sensitive Solutions (CSS) framework to the process of integrating resiliency strategies into the operations of a State DOT; examine DelDOT's current procedures considering recent State studies on climate change impacts; and identify opportunities to integrate key climate strategies into planning, development, and delivery using a CSS approach. CSS is a method used by FHWA to inform decisions and strategies that fully integrate the context and concerns of all stakeholders relative to the project at hand. This exercise with DelDOT offered an opportunity to gain new insight into how CSS can support development of more effective climate and resiliency state and local strategies. The meeting was sponsored by FHWA. For more information see the meeting summary report.

Texas Resilience Workshop Report Published

A new report summarizes an FHWA workshop that was held on June 21, 2017 at the Texas Department of Transportation (TxDOT) in Austin, Texas. The purpose of the workshop was to identify opportunities for metropolitan planning organizations (MPOs) and other transportation agencies in Texas to assess and address their vulnerabilities to climate change and extreme weather, and incorporate resilience into the transportation planning process. Presentations and discussions at the workshop focused on actions that MPOs and other transportation agencies in Texas can take to meet new requirements in the Fixing America's Surface Transportation (FAST) Act and increase their resilience to climate change and extreme weather.

FHWA Holding Resilience Webinar Series

FHWA is holding a webinar series this fall to present the results of recent climate resilience related research. Registration for the webinars is available on FHWA's Resilience Webinars Page.

September 28:	Synthesis of Approaches for Addressing Resilience 1
October 5:	Synthesis of Approaches for Addressing Resilience 2
October 12:	Synthesis of Approaches for Addressing Resilience 3
October 26:	Hurricane Sandy Follow-up Vulnerability Assessment and Adaptation Analysis
November 2:	Green Infrastructure Techniques for Coastal Highway Resilience Pilot Results 1
November 9:	Green infrastructure Techniques for Coastal Highway Resilience Pilot Results 2
November 16:	FHWA Climate Resilience Framework, 2017 Update

U.S. EPA Publishes 2017 Trends Report "Our Nation's Air"

The latest annual trends report from the US EPA is now available. The report summarizes trends in air quality for six National Ambient Air Quality Standard (NAAQS) pollutants, for visibility, and for emissions of 187 hazardous pollutants. Between 1970 and 2016, the combined emissions of the six common pollutants (PM2.5 and PM10, SO2, NOx, VOCs, CO and Pb) dropped by 73 percent. This progress occurred while the U.S economy continued to grow, Americans drove more miles and population and energy use increased. In addition, since 2000, the number of unhealthy air quality days in 35 major metropolitan areas dropped by 66%. Interactive graphics, web-based maps with location-

enabled search, direct links to data sources, and a summary brochure are all available on the report website.

The Ongoing Transformation of the Global Transportation System

The U.S. DOT Volpe Center's upcoming speaker series—The Ongoing Transformation of the Global Transportation System—will explore challenges and opportunities affecting the advancement of transportation systems. Transforming Transportation continues the U.S. DOT Volpe Center's long history of convening thought leaders, decision makers, and stakeholders from across the global transportation enterprise to anticipate future transportation issues, generate fresh approaches to emerging issues, anticipate transportation trends, and inform decision making. The series will start with a talk by Jeffrey Schnapp of Harvard University on September 21, 2017.

Meetings, Conferences, and Workshops

11th University Transportation Center (UTC) Spotlight Conference: Rebuilding and Retrofitting the Transportation Infrastructure

TRB is sponsoring the 11th University Transportation Center (UTC) Spotlight Conference: Rebuilding and Retrofitting the Transportation Infrastructure on September 26-27, 2017, in Washington, D.C. The preliminary program is now available.

Training Opportunities

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 via the FHWA's YouTube channel here. For more information about the CMAQ program, please contact Mark Glaze at mark.glaze@dot.gov or (202) 366-4053.

FHWA NEPA Air Quality Analysis for Highway Projects

The FHWA Resource Center Planning and Air Quality team will be conducting a series of training sessions on NEPA Air Quality Analysis for Highway Projects. The training includes sessions on project-level applications appropriate for managers and practitioners, as well as hands-on sessions intended for modelers. Please note this is not a general MOVES training course, but is focused on project-level applications. It is not intended to address regional applications, such as SIP emissions inventories or regional (plan and TIP) conformity analyses. If you are interested in this training, please contact Michael Claggett at michael.claggett@dot.gov.

MOVES2014a Training Materials

The U.S. EPA posted updated training materials and schedule for the MOVES2014a two-day hands-on training course. On its training materials 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.

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 the NHI website 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 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.

Reminders

U.S. EPA Proposes to Retain Existing NAAQS Standard for NOx

On July 14, 2017, the U.S. EPA proposed to retain the current national ambient air quality standards (NAAQS) for oxides of nitrogen (NOx), based on a review of the scientific evidence.

Frequently Asked Questions on the Revocation of the 1997 Primary Annual Particulate Matter (PM2.5) National Ambient Air Quality Standard (NAAQS) and Implementation of the 2012 PM2.5 NAAQS Available

These FAQs provide information on the transportation conformity and transportation planning implications as a result of implementation of the 2012 PM2.5 NAAQS and the revocation of the 1997 primary annual PM2.5 NAAQS.

2017 Carbon Monoxide (CO) Categorical Hot-spot Finding

The 2017 CO categorical hot-spot finding is now available. This finding updates and supersedes the February 2014 finding and uses the latest version of the MOVES emissions model, MOVES2014a.

Congestion Mitigation and Air Quality Improvement Program Emission Reductions Calculator Updated

FHWA developed a series of tools to provide technical for the implementation of the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. The Traffic Flow Improvements, the Advanced Diesel Truck/Engine Technologies and the Alternative Fuels and Vehicles modules are available on the FHWA CMAQ Emissions Calculator Toolkit webpage.

FHWA Report on Innovative Financing to Support Alternative Fuels Infrastructure

FHWA published a Report to Congress to Innovative Financing to Support Alternative Fuels Infrastructure in March 2017, which discusses current efforts to identify barriers to greater private investment in alternative fuels infrastructure and describes traditional and innovative financing mechanisms that could help address the barriers.

Updated Version of "Transportation Conformity: A Basic Guide for State and Local Officials" Released

This document replaces the 2010 version of the Basic Guide, which helps State and local officials understand transportation conformity and how conformity requirements relate to transportation investments in their communities.

FHWA Webinars on ICE Tool and EERPAT Model.

In April and June 2017, FHWA hosted webinars to review tools for energy and greenhouse gas emissions analysis: introducing improvements to EERPAT Version 4.0 and FHWA's ICE Tool. Webinar presentations and recordings are available here.

MOVES Model Review Work Group

The U.S. EPA's Federal Advisory Committee Act MOVES Model Review Work Group continues to provide input on the development of the next official version of MOVES, expected to be released in 2018 at the earliest.

AASHTO Practitioner Handbook on "Addressing Air Quality Issues in the NEPA Process for Highway Projects"

In June, AASHTO released a handbook on Addressing Air Quality Issues in the NEPA Process for Highway Projects, which includes an overview of requirements and terminology and practical tips on the NEPA process and conformity determinations.

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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/ or https://www.fhwa.dot.gov/environment/sustainability/newsletter/.

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