

MINUTES

TRANSPORTATION RESEARCH BOARD

Business Meeting – ADC30

Committee on Ecology and Transportation (ADC30)

Business Meeting

January 12, 2014, 1:30 PM – 5:00 PM

Marriott Marquis Liberty J (M4)

Prepared and Submitted by:

**Marcia Bowen
Secretary ADC30**



**Marcia Bowen, Vice President
Normandeau Associates**

Welcome and Introductions. Alex called the meeting to order and attendees introduced themselves.

Overview of Committee Activities since January 2014 — Alex Levy, Senior Ecologist with ARCADIS and Chair of the Ecology and Transportation Committee

- ***Calls-for –Paper/Posters /2015 Annual meeting program update***

The Committee has put out several calls for papers. The committee does not have its own lectern session this year. There has been a drop-off in the number of papers submitted, something that other committees like ours have noticed. We had hoped to have a joint session on *Design of Fish Passage Corridors: Recent Experience and Knowledge Gaps* (sponsored by AFB60, Committee on Hydrology, Hydraulics, & Water Quality) that did not come to fruition. The call for posters has been more successful. The poster session will be held at Convention Hall E Tuesday 8:30 am. On Wednesday at 10:15 the Committee will host a panel discussion on emerging issues of increasing marine transportation in the Arctic. Joe Burns, US Forest Service, reported on the geospatial workshop, which was attended by approximately 32 people. The session consisted of three parts: disciplines in geospatial data needs; geospatial tools, and a world café that tried to identify emerging tools that could help with emerging needs. Joe is collecting thoughts with an objective of either a follow-up workshop and/or research needs statements. Alex mentioned the presentation on potential use of UAV's as particularly interesting. The question was raised about how and why to pick tools when there are so many. Also the animal/vehicle collision subcommittee met this morning; Patrick McGowan, Research Engineer, Western Transportation Institute, said committee continues to try to bridge the gap between safety and ecology; the committee came up with 4-5 research topics. Alex said that despite the fact that some of the needs statements are over 10 years old, they still need to be addressed.

- Alex handed out certificates of appreciation. Marcia Bowen, Senior Marine Ecologist at Normandeau Associates and Committee Communications Chair, was acknowledged for her service in preparing the newsletter and communications. Julianne Schwarzer, USDOT Volpe Center, who was unable to attend, was acknowledged for her help in the service and agility in developing the annual meeting program; Chris Slesar, Vermont Agency of Transportation, helped get our committee on the agenda for the NETWC meeting.
- ***Mid-year Meeting – NETWC, September 21-24, 2014 Burlington, Vermont:*** Although the committee meeting was sparsely attended, the meeting was a good one with a lot of relevant ideas.

TRB Report—Christine Gerencher, TRB

Christy mentioned the new venue and that there have been a few glitches, such as the wifi maxing out this morning at 9 am. She noted the meeting wifi password 'Annual2015'. Also, a glitch with the mobile app: update prompts should be ignored. TRB will be sending a survey after the meeting. She asked that everyone respond and offer recommendations. She estimated that attendance was 5-7% higher than last year's, which was 12,000.

Liaison Reports—Lars Carlson, PhD, Jacobs Engineering Group and Committee Liaison Chair, reminded folks of an email that he sent out late last year to provide him with information

on any other committee meetings that you have attended. If you wish to be added to a specific committee, let Lars know.

TRB Subcommittee on Megaregions – Haley Peckett, USDOT Volpe Center

Haley will be able to provide copies of handouts of the presentation, but courier did not deliver them in time for the meeting. The ADA20 Metropolitan Policy, Planning, and Processes Committee have started a subcommittee on megaregions, first focusing on freight and large planning MPOs. They are conducting outreach to other committees. Megaregions are large networks of metropolitan centers and surrounding areas connected through cultural, environmental, and economic characteristics, as well as infrastructure. Megaregions were first defined by Georgia Tech. There are 11 megaregions using a data-driven definition (northeast, DC-VA, CA, AZ, Piedmont, FL, Texas triangle, central plains, Midwest). The subcommittee held a day-long workshop in 2012, primarily focusing on freight and economics. As a result of this meeting, TRB established a megaregions subcommittee under ADA20. There is a lot of research going on, including at The Volpe Center, which has published a paper on rural regions and how they relate to the urban MPOs. They have been holding quarterly webinars, sponsoring literature reviews, and peer exchanges on economic development, freight/passenger movement, data needs, energy/environment and climate change. They are looking for joint opportunities to collaborate and develop joint research needs. Fred Ducca, University of Maryland, is the subcommittee chair. Amanda Hardy, Wildlife Conservation Society, asked if there was any involvement of Landscape Conservation Cooperatives (LCC, USFWS). Haley said not yet. Haley brought up jurisdictional boundaries as a potential issue. Data collection and treatment of invasive species was brought up. Paul Wagner, Washington State DOT, brought up ESA, where species do not restrict themselves by political boundaries, but infrastructure often ends at the jurisdictional boundary. Marlys Osterhues, FHWA HQ, said that some of FHWA's programmatic approaches cross boundaries. Haley asked if there were approaches they could use as models. Amanda mentioned pronghorn migrations as crossing political boundaries and that the USFS has recognized their migratory corridor, which is a specific example of megaregion approach. She also brought up grizzly bear relocations as an example of a project that requires crossing different jurisdictions and private lands. Also wildlife crossings often affect private lands. Lauren Diaz, US Army Corps, mentioned that the Corps had published a paper on Barriers to Landscape Level Mitigation that brought up jurisdictional boundaries as an impediment. Haley asked for a liaison volunteer. Kris Gade, Arizona DOT, volunteered. Alex brought up that each state seems to address wildlife issues differently; in the Atlanta-Birmingham megaregion, approaches are different. Marlys brought up the NEWTC workshop as an example of how multiple states are collaborating across boundaries even if it isn't really a megaregion.

TRB emphasis on Connected and Automated Vehicles

Mark Kross, outgoing Chair of the TRB Planning and Environment Group, which is composed of 25 committees including ours, indicated that Connected and Automated Vehicles is an emphasis area of the TRB strategic plan and TAC strategic plan and one of this year's designated "hot topics". The committees are being asked to consider this as a topic. For

example, a connected vehicle might be able to notify other connected vehicles of potential wildlife interaction. TRB has offered a webinar on the topic and Mark recommended that members of the committee view the webinar and determine whether and how this topic might relate to the Committee's mission.

Committee Member and Agency Reports—Recap of 2014 and Plans for 2015

FHWA update, Marlys Osterhues, Project Mitigation Team Leader; David Williams, Environmental Specialist

Marlys reported that FHWA continues to work on implementation of MAP 21. They hope to finalize the programmatic mitigation draft rule. This will allow states to highlight mitigation opportunities. It is part of larger planning rule, which will be released later this year. Check out the MAP21 website for rules that are being released. Pollinators are another area of emphasis. This was the topic of a recent Presidential memo and FHWA has been determining how it relates to them in terms of roadside maintenance and operation and best management practices for pollinator health. She was asked if anyone is looking at the economic benefits of revised maintenance practices. Alex mentioned that the potential listing of monarch butterfly could drastically change roadside practices that affect its host plant, milkweed. A study is being conducted by contractors and final results are 15-16 months away from completion. Operation Wildlife started in 1975; some states still using this. FHWA is doing research on this now; working closely with USFWS on monarch butterflies. Marlys said that FHWA has hired several formal liaisons, including a permanent liaison for the US Coast Guard, Rachel Herbert for EPA, and has a National Marine Fisheries Service (NMFS) liaison in-the-works. FHWA continues to make progress on programmatic agreements for the Indiana and Northern Long-eared bats, working closely with USFWS. Each region deals with the situation differently, so it has been challenging. A draft agreement has been completed and FHWA is in the process of getting feedback. They are also working on programmatic agreements with NMFS. Dan Buford, FHWA, reported FHWA's Greater Atlantic field office and NMFS's southeast office NMFS have drafted process guidelines for design/build projects based on fallout from the Tappan Zee Bridge, where they needed to re-initiate consultation several times. NMFS and FHWA are developing programmatic consultation guidelines for species/critical habitats along the Atlantic coast. FHWA is also completing an inventory and investigating the benefits of approximately 500 programmatic agreements across the country. They expect to hold a webinar in March that highlights case studies and how processes could be shared. Marlys was uncertain when the next reauthorization would happen, but was certain that it will include environmental issues. Marlys also recommended attending Session 417, 'Changing Environmental Mitigation Policies with a Teaspoon of Law'.

David Williams provided an update on Eco-Logical implementation. There is an on-line technical assistance program as outlined in the handout he provided. FHWA has published an annual report on Eco-Logical implementation; they are also working on peer exchanges, a practitioner's handbook, and workshops specific to user needs. The next Eco-Logical webinar will be held on February 10th. Mike.ruth@dot.gov can register you. Also there will be a booth at the poster session tomorrow. FHWA's Eco-Logical website is up to date with lots of new information.

FHWA is also preparing a Memorandum of Understanding with USFWS for Migratory Bird Treaty Act compliance, which includes development of bird conservation plans and how to deal with the MBTA in NEPA. It will clarify what is exactly needed. Completion is several years away.

AASHTO update, Kate Kurgan, Center for Environmental Excellence

Kate recommended that we go to the Center for Environmental Excellence website for the latest updates. She handed out a summary (attached) that includes a list of members, to which she will be adding some folks. One of their priorities continues to be expediting project delivery through the preparation of quality environmental documents through best practices. The document is available at AASHTO booth. In addition, they have been working on a stormwater community of practices, tools and techniques for effective stormwater management. A National Stormwater Practitioners meeting was held in 2014, with a follow-up white paper and webinar and stormwater management flipbook for construction and maintenance operations. They are assisting FHWA with their stormwater empirical dilution model. They also have been communicating the environmental and other benefits of transportation to the public and other stakeholders, to educate public on how transportation projects are also contributing to environmental protection. Coming up: FHWA programmatic agreements (to be determined); CEE has a catalogue of all agreements but they need to know what is working and what needs improvement. Also they are working on tasks related to Section 404. An update of *Applying the Section 404 Permit Process to Federal-Aid Highway Projects* (aka the "Red Book") is being completed, that will address NEPA and Section 404. They are providing assistance to State DOT's regarding extreme weather and its impacts. SCOE continues to maintain and update the TERI (Transportation and Environmental Research) database. Kris Gade, AzDOT and Research Task Leader for SCOE, reported on an extreme weather pilot study and a study on species migration and management. SCOE accumulates and sorts research ideas that are funded by NCHRP25-25. Ideas are submitted to TERI database and in June they are reviewed. Ideas that exceed the 15-month-\$125,000 limits can be forwarded to full NCHRP funding. A national focus is important for funding. Kris can be a resource in terms of expanding on ideas. Two that went forward were Indiana and northern long-eared bat data mining exercise, combining the information into a single database, with a focus on how many are found along roadsides; and implementation and monitoring of small wildlife connectivity projects.

US Army Corps of Engineers, Lauren Diaz, FHWA Liaison

Lauren Diaz reported from the Corps of Engineers. They are updating the 1998 Red Book interagency agreement on applying Section 404 to highway projects, including concurrent NEPA and 404 reviews. The publication is in agency review and will be released soon. She mentioned the Corps/EPA proposed rule defining jurisdiction under CWA. The six-month comment period has ended and approximately 1 million comments were filed that are ALL being reviewed. A final rule proposal will be submitted to OMB this month before public release. NOAA's 2015 Biological Opinion on the Corps' *Nationwide Permits* (which follows a jeopardy opinion in 2012) can be seen on both Corps and NOAA fisheries website. The Corps is implementing reasonable and prudent measures, which are most applicable to coastal states with species under NOAA jurisdiction including marine fish and mammals.

US EPA, Rachel Herbert, FHWA Liaison

The GIS mapping tool watershed registry database is being rolled out, which was developed with multiple federal agencies and Maryland State Highway Administration. The tool enables interested parties to look at all available database for mitigation opportunities including stormwater mitigation. EPA is working with AASHTO and state DOT's to update the Stormwater Transportation website. They are exploring the use of offsite mitigation for stormwater.

USFWS, Catherine Liller, FHWA Liaison

Catherine reported that they are working on the Indiana and northern long-eared bat programmatic agreement and monarchs and pollinators; the monarch assignments came down from the Director's office. FWS is revising mitigation policies to incorporate more of a landscape approach; they are currently being reviewed by other agencies as a courtesy review. FHWA is reviewing and will hold webinars for other agencies. They are also working on Migratory Bird Treaty Act programmatic agreements. Bruce Hatcher brought up the monarch species in Canada that depends on swamp milkweed; there is increased scrutiny on projects that affect those plants.

Round table discussion of research

Scott Marler, Iowa DOT, reported on their research project looking at bats and bridges to determine what bridge characteristics are attractive to bats.

Andy Alden, Virginia Tech Transportation Institute (VTTI), reported on the subcommittee Transportation Infrastructure, Facilities, and Right of Ways (ADC60-2), which is investigating ROWs as Sustainable Resources. He put in a plug for the committee meeting tomorrow. VDOT/FAA are running an aerial unmanned vehicle test site.

Bridget Donaldson, Virginia DOT/VTRC, reported on their research on methods of repairing culverts. They are going to start a fully pooled fund study to further investigate the aquatic impacts of certain culvert repair methods. The study will determine the scope of the problem nationally and whether current DOTs specifications are sufficient.

Ed Franz, NYDOT, said that they will be hosting the next NEWTC in 2016, probably at Lake Placid. He said that they have been using the criteria that if a culvert can pass fish and doesn't fail in a catastrophic weather event then it is sufficient, i.e. the resource is the indicator of sufficiency.

Paul Wagner, WSDOT, said that the call for abstracts for this September's ICOET conference closes January 30 and will not be extended as in past years (editors note: the deadline has been extended to Feb. 15). Paul added that WashDOT has been looking at noise and barotrauma effects from pile driving including effects on diving birds, marine mammals, and fish. They are experimenting using different pile designs. He said University of Washington is holding a web conference February 2 on recent findings using different test piles in Puget Sound.

Bridget said this is coming up a lot in VA.

Ed Little, USGS Columbia Research Station, is working with the USFS on green chemicals for dust suppression. A report will be released shortly. Results indicate that even though the chemicals may be green, they are not environmentally benign. The work will continue with

USFS, first with laboratory studies and then field studies, including effects from both leachates and runoff. There are three products that seem to have good dust control and low impacts. Amanda Hardy, Wildlife Conservation Society, reported on a variety of projects in Wyoming, Missouri, the Arctic, and Adirondacks. They recently completed a report with Idaho DOT report using GPS data and a Brownian bridge movement analysis along with resource selection to determine how/why wildlife cross roads and why they pause. Early results indicate there are both migratory and resident moose. WCS just published a paper on the path of pronghorn and why /when they stop and whether it is a natural stop or impedance from human-created structures. They are working with the USFWS on jaguar recovery in Mexico and AZ to determine the location of habitat connectivity and what highways might be impeding movements between habitats. This could inform the design features that might facilitate movements. Todd Williams, Michael Baker International, reported that the NCHRP 25-25 project on construction guidelines for wildlife fencing is nearly completed.

Joe Burns, Threatened/Endangered Species Program Leader at USFS, reported that their chief has been promoting increasing the scale and pace of restoration. They are partnering on bat monitoring protocol; this has been in the development stage for a long time but they are now putting together a grid of DOT monitoring programs so that they can move beyond project-scale data to be a species-level monitoring. (Alex added that Georgia created a statewide version of the regional bat monitoring groups (they hold an annual bat blitz); other states have done this as well to get a picture of bat locations. GA DOT has spent \$3m on presence/absence bat surveys.) USFS will be providing Notice of Availability of internal guidance on threatened/endangered species/biodiversity that will align with on Forest Planning rules that were recently finalized.

Patrick McGowan, Western Transportation Institute, reported on the ARC contest from 2 years ago- the ARC committee continues to meet to maintain visibility. He expects a location and State DOT and part of the necessary funding to construct one of the winning projects. WTI also recently completed a study on future wildlife connectivity based on planned infrastructure and usage rather than just looking at wildlife. More information is on the WTI webpage. VTTI is leading the effort; they are helping analyze the naturalistic data used to extract deer and other wildlife collision data to figure out how wildlife are moving.

Bruce Hatcher, Cape Breton University, reported that Sydney is the most contaminated harbor in Canada. They completed dredging to 18m, generating the largest destruction of fish habitat in Canadian history. 200 artificial reefs have been constructed as mitigation. He has funding to conduct 7 years of monitoring. He will have a poster in tomorrow's session.

Research Subcommittee Report—Patricia Cramer, Utah State University. Patty was unable to attend and did not provide an update. We have around 10 research ideas that have not been added to either the TRB or TERI database. Also last 2 ICOET proceedings have not been added to the TRB database.

Alex reminded folks that the Cooperative Research Synthesis Statements for airports (ACRP) are due October 1; Highway (NCHRP) statements are due February 1, and the Transit cooperative research (TCRP) synthesis deadline is March 16. Syntheses are studies with smaller funding amounts that capture the state-of-practice or problems across the country or

industry. Factors important for selection of problem statements are whether they address a widespread problem; are of broad interest, and whether there is other recent research on the topic. Also, TRB is always looking for practice-ready papers. There is an open call for contribution to the “research pays off” articles, which are published in TR News. Bridget has published one. The articles are 750 - 1000 words or less and cover how research has contributed to practice.

SHRP2 is in a wrap-up stage; all contracts/studies will be completed at the end of the year.

Our committee’s rotation will be up in April 2016. Members can serve at most 3 consecutive (3 year) terms. Let Alex know if you wish to rotate off the committee and give him ideas for replacements. Friends can still make important contributions to the committee. It’s understood that committee members cannot always attend meetings and it’s not incumbent upon members to be in attendance, but to participate in delivering the committee’s mission.

The question was asked whether TRB is able to support meeting attendance. We do not know of such resources, but limited travel funds are sometimes available to AASHTO members and annual meeting registration is always complimentary for TRB-sponsoring organizations and agencies

The 2015 Mid-Year Meeting will be held at ICOET in Raleigh, NC from September 20-24.

ADC30

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

Meeting:

Ecology & TRANSPORTATION

Date:

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**CENTER FOR ENVIRONMENTAL EXCELLENCE BY AASHTO
ACTIVITIES REPORT TO THE TRB COMMITTEE ADC30 ECOLOGY AND TRANSPORTATION
2015 TRB ANNUAL MEETING
WASHINGTON, DC
MARRIOTT MARQUIS, LIBERTY J (M4)
MONDAY, JANUARY 12, 2015**

The Center for Environmental Excellence by AASHTO (Center) offers a wide range of products and services to assist transportation agencies in achieving environmental excellence in delivering their transportation programs and projects. Through its information-sharing, technical assistance, partnership-building and training resources, the Center helps transportation agencies incorporate environmental compliance, sustainability, and stewardship into transportation planning, project development, construction, maintenance and operations.

The Center works closely with the AASHTO committees and their members to tailor its products and series to the environmental needs of state transportation agencies and their partners. The Center is overseen by an Advisory Board with representatives from various AASHTO committees.

- Carlos Braceras, Utah DOT (Chair)
- Don Arkle, Alabama DOT (Standing Committee on Planning and Standing Committee on Performance Measures)
- Tim Craggs, Caltrans (Subcommittee on Design)
- Gail D'Avino, Georgia DOT (Subcommittee on Community and Cultural Concerns)
- David Harris, New Mexico DOT (Standing Committee on Public Transportation)
- Tim Hill, Ohio DOT (Standing Committee on Environment)
- Jim Ritzman, Pennsylvania DOT (Standing Committee on Planning and Standing Committee on Performance Measures)
- Carol Lee Roalkvam, Washington State DOT (Subcommittee on Environmental Process)
- Doug Simmons, Maryland SHA (Standing Committee on Highways)
- Jeff Shapiro, Nevada DOT (Subcommittee on Construction)

Expediting Project Delivery through the Preparation of Quality Environmental Documents

Since the adoption of NEPA, the length, complexity and cost of environmental review documents has steadily increased. To address this issue, the Center, FHWA and the American Council of Engineering Companies are partnering to progress activities related to preparing quality environmental documents. The team developed a Practitioners Handbook on *Preparing High-Quality NEPA Documents for Transportation Projects* to help practitioners bridge the gap between the theory and practice of producing high-quality NEPA documents. In general, a high-quality NEPA document is one that:

- Is readily understandable by all audiences, including those without technical expertise
- Provides key information in an easy-to-navigate format
- Focuses on pertinent information and avoids unnecessary bulk
- Includes supporting technical information in appendices
- Meets all legal requirements

The handbook is accompanied by a separate document, *Examples of Effective Techniques for Improving the Quality of Environmental Documents* (2014), which contains excerpts from recent NEPA documents issued by FHWA and FTA. The examples illustrate the techniques described in the Practical Tips section of the Practitioner Handbook. These documents are located on the Center website at http://www.environment.transportation.org/center/products_programs/practitioners_handbooks.aspx#14

Tools and Techniques for Effective Stormwater Management

Since enactment of the 1987 Clean Water Act amendments, State DOTs are obligated to meet the requirements of the municipal separate storm sewer system and obtain National Pollution Discharge Elimination System permits to control the discharge of pollutants into waters of the United States. Since the inception of these requirements State DOTs have been at the forefront of research and the development of best management practices to protect our country's water resources. Over the last few years DOTs have begun to move from project to project mitigation of water quality impacts to more regional or watershed based strategies. The watershed approach is a more effective framework for protecting impaired water bodies with limited resources. To support the State DOT's the Center has dedicated considerable resources to stormwater technical assistance.

The Center continues to support the Stormwater Community of Practice to provide a venue for professionals to discuss and exchange information, experiences, best practices, emerging and changing environmental trends, issues, policies, procedures, research and data needs. A Stormwater Briefing Paper and webinar on Departments of Transportation MS4 Audit Tools are posted on the Center website at http://www.environment.transportation.org/center/products_programs/communities_of_practice.aspx#StormwaterManagement

The Center, in conjunction with the Environmental Technical Assistance Program (ETAP), FHWA and the District Department of Transportation sponsored the 2014 National Stormwater Practitioners Meeting and the development of a post-meeting white paper and webinar. The white paper contains important meeting discussion topics, emerging issues and case studies. The whitepaper contains relevant information for practitioners at State Departments of Transportation (DOTs) in the fields of environment, design, construction, maintenance, hydraulics and hydrology. The meeting was attended by 64 delegates representing 35 states, FHWA, AASHTO and Regulators. Resources can be found on the Center website at http://www.environment.transportation.org/center/products_programs/conference/2014_national_stormwater_practitioners_meeting.aspx

The Center is undertaking the development of Stormwater Management Flipbooks for Construction and Maintenance Practitioners. The flipbooks are a practical tool for use by DOT Stormwater field staff for compliance focused on stormwater management activities and education for DOT maintenance and construction related activities. The flipbook is intended to be used during field activities and inspections to guide maintenance and construction field staff with recommended actions and steps to preserve water quality. The flipbooks will be available on the Center website in early 2015.

The Center is assisting FHWA in delivering Stochastic Empirical Loading Dilution Model (SELDM) Peer Exchanges. The purpose of the peer exchanges is to bring stormwater and hydraulic experts together to analyze and critique the new joint FHWA/USGS water quality runoff model which replaces the 1990 FHWA Driscoll model. This will provide a forum for participants to discuss water quality challenges, utilization of the software, technical assistance needs as well as incorporating the model into NEPA. The results will help identify state DOT water quality needs. In 2014 the Center provided travel support to 14 State DOTs to the peer exchanges in Washington, DC and Portland, Oregon. The Center anticipates providing travel support to a third peer exchange in 2015

Exchanging Best Practices and Identifying Needs in Air Quality and Transportation

Since the passage of the Clean Air Act in 1970, significant progress has been made in reducing transportation emissions, despite increases in population and vehicle miles traveled. Nonetheless, transportation is still a major contributor to air pollution and transportation emissions remain an area of concern to regulatory agencies and the general public.

To support State DOTs in their air quality work, the Center, in conjunction with FHWA sponsored the 2014 Air Quality Practitioners Peer Exchange on May 6-7, 2014 in Washington, DC. The event brought together more than 40 air quality practitioners from around the country to exchange ideas, best practices, and lessons learned related to air quality issues facing State DOTs. In attendance were representatives from approximately twenty-five State DOTs, three metropolitan planning organizations, and FHWA staff. Materials from the peer exchange, including a white paper summarizing the event and key takeaways can be found on the Center website at http://www.environment.transportation.org/center/products_programs/conference/2014_air_quality_exchange.aspx

Assisting State DOTs in Responding to Extreme Weather Impacts on Transportation Infrastructure
Extreme weather events impact nearly every state in the U.S. These events include hurricanes, non-tropical floods, heat waves, droughts, wildfires, several local storms, winter storms, and freezes. Extreme weather events disrupt transportation services, damage expensive infrastructure, and necessitate more frequent maintenance.

In light of State DOTs growing concerns about extreme weather, the Center and AASHTO's Resilient and Sustainable Transportation Systems (RSTS) Technical Assistance Program sponsored a two-day symposium on extreme weather in Spring 2013. Following up on the Symposium, the Center sponsored practitioner-focused updates on the latest research, case studies, and tools related to extreme weather at the 2014 AASHTO regional and technical committee meetings, including: Subcommittee on Systems Management and Operations, Subcommittee on Bridges and Structures, Standing Committee on Highways, RSTS, Subcommittee on Design, Northeast Association of State Transportation Officials, Standing Committee on Environment, Western Association of State Highway and Transportation Officials, Snow and Ice Pooled Fund Cooperative Program, Subcommittee on Maintenance, Subcommittee on Construction and Southeastern Association of State and Highway Transportation Officials.

Discipline specific handouts with information regarding extreme weather, potential impacts, and useful resources were provided to meeting participants. These handouts can be found on the Center website at http://www.environment.transportation.org/center/products_programs/conference/2014_extreme_weather_sessions.aspx

Understanding the Intersection of Health and Transportation

Many State DOTs are grappling with the question of how to incorporate health considerations, such as air quality and active transportation, into transportation decision-making. With the consideration of health in transportation moving to the forefront of discussion in many states, several SCOE members requested that the Center facilitate a peer exchange to bring together multiple states and discuss the challenges, opportunities, and successes associated with integrating health considerations into transportation decision-making.

In December 2014, the Center brought together selected transportation practitioners from several AASHTO member committees and subcommittees to participate in a national peer exchange in Washington, DC related to integrating health in transportation practice at the State DOT level. The goal of the peer exchange was to allow the State DOTs to share information related to opportunities, challenges and strategies for considering health in transportation and to continue to facilitate these discussions among the AASHTO Committees and Subcommittees.

Communicating the Environmental and Other Benefits of Transportation to the Public and Other Stakeholders

The public generally does not connect transportation with protecting the environment or understand the actions that DOTs undertake to address environmental issues. As such, the Center is currently in the process of developing a task to improve the way that State DOTs and AASHTO communicate the environmental benefits of transportation to the public. The goal of the task is to find the existing gaps in how State DOTs and AASHTO communicate the benefits of transportation to the public, and develop a roadmap to improve communication methods. With better communication practices, states may be able to

more successfully establish credibility about their commitment to communities and the environment. This work will include coordination with public affairs professionals from State DOTs.

Assisting State DOTs in Achieving Environmental Compliance at Highway Maintenance Facilities

Recently State DOTs have observed an increase in EPA audits of DOT maintenance facilities. As a result of these audits, some State DOTs have received notices of violation from EPA requiring improvements to maintenance facilities to ensure compliance with environmental regulations. To assist DOTs with achieving compliance, the Center is undertaking the development of an Environmental Compliance at Highway Maintenance Facilities Practitioner's Handbook that is intended to provide information concerning environmental regulatory compliance and identify best management practices for equipment and material storage as well as for activities performed at typical permanent existing maintenance facilities. Additionally, a flipbook will be developed that focuses on practicalities of maintenance compliance with respect to typical activities. The handbook and flipbook will be available in the spring of 2015 on the Center website.

Maintaining and Improving the Center's One Stop Source of Environmental Information for Transportation Professionals

The Center's website (<http://www.environment.transportation.org/>) houses all products developed through the Center, as well as other resources that provide environmental information for transportation professionals. This year, the website was updated weekly with the most current and relevant information for practitioners, including best practices, emerging issues, and important projects. Several additional features were added to the website to improve searchability, including a "Find it Fast" tool and a filter that allows users to search content by one of four disciplines: maintenance, design, construction and planning.

Developing High Quality Research Statements

SCOE maintains and updates the Transportation and Environmental Research Ideas Database (TERI) (http://www.environment.transportation.org/teri_database/). TERI is a central storehouse for tracking and sharing new transportation and environmental research ideas. Every year SCOE subcommittee members review the research ideas in the TERI database, identify priority research topics, and develop the topics into research problem statements for submission to NCHRP 25-25 and other NCHRP research programs.