

The National Academies of
SCIENCES • ENGINEERING • MEDICINE



TRANSPORTATION RESEARCH BOARD

TRB Executive Committee Meeting

-Minutes-

Wednesday, June 13, 2018, 8:30 a.m. – 4:30 p.m.

Thursday, June 14, 2018, 8:30 a.m. – 12:00 p.m.

Woods Hole, Massachusetts

View the [Executive Committee Website](#) for the Agenda Book and Select Presentations

June 13, 2018

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|-------------|--|-----------------|
| I. | Welcome and Announcements | Turnbull |
| II. | Self-Introductions; Bias/Conflict of Interest | All |
| III. | Approval of Minutes: January 10-11, 2018 (p. 6)
➤ Approved | Turnbull |
| IV. | Approval of Consent Agenda
➤ Approved | Turnbull |
| V. | Executive Director's Report (p. 21) | Pedersen |
| A. | Mr. Pedersen reported that at present, TRB finances are in stable condition. | |
| B. | TRB is creating contingency plans due to uncertainties with future funding. <ul style="list-style-type: none">• Mr. Pedersen reports that in 2020, the current transportation authorization bill (FAST Act) calls for an \$8 billion rescission in federal funding for state planning and research funds, which represents a 20 percent reduction. TRB receives a portion of this funding.• Separately, current surface transportation expenditures far exceed Highway Trust Fund revenues, which is another source of funding for TRB. | |
| C. | TRB is actively seeking private or corporate sponsorship through TRB's new Global Affiliates Program and the Annual Meeting exhibits and patron opportunities. | |
| D. | TRB's Cooperative Research Program has started a new research program on behavioral traffic safety. | |
| E. | Meeting sponsor needs: <ul style="list-style-type: none">• The priorities of USDOT continue to focus on safety and technology with an added focus of rural and workforce issues.• Mr. Pedersen is focused on receiving input from state DOT CEOs, noting that approximately 30 gubernatorial elections take place this year. | |
| F. | Mr. Pedersen reported on the Critical Issues in Transportation document, a forward-looking document that will set the agenda of issues for TRB to focus on for the next five years. | |

- G. Update on the National Research Council (NRC) of the National Academies Transformation:
- Dr. Marcia McNutt, president of the National Academies of Sciences, had hired the National Association of Public Administration (NAPA) to review NRC processes and procedures.
 - The NRC needs to streamline and consolidate operations of Information Technology, Human Resources, Contracting, and Communications – to modernize and create more efficiencies in the system in order to deliver to our sponsors.
 - The consensus study process is considered the “gold standard” in advice to the federal government; however, the process is slow, deliberative, and cumbersome, and the NRC needs a mechanism to deliver advice more quickly to meet the critical and urgent questions for the federal government.
 - NRC transformation teams will be providing oversight and implementation recommendations, and Mr. Pedersen will keep the Executive Committee informed with progress.
 - External Communications Review:
 - i. TRB’s communications plan is now out-of-date as communications in 2018 now emphasizes mobile-ready products.
 - ii. The external review found that the National Academies used a product-oriented approach and recommends that it shift to a user-oriented approach. For example, the Washington Post collects data on users’ use of its products and can be more responsive to what their audience wants.
 - iii. The review recommended consolidating communications staff with a focus on embedding staff in the various program units of the NASEM.
 - iv. Communications is changing so fast that we need to hire someone to stay current of all the changes.
 - Mr. Pedersen reported that he is interested in revising TRB’s Marketing and Communications plan, measuring the impacts of products and services, collaborating with other programmatic units of the NASEM, increasing international partnerships, and fostering inclusion and diversity.

VI. TRB Division Committee Report (p. 38)

Hanson

- A. The Division Committee is the liaison between the NASEM and TRB. The Division Committee evaluates the composition of the committees in terms of diversity and monitors the report review process to ensure quality.
- B. Monitoring diversity of Technical Activities, Cooperative Research Program, and the Consensus and Advisory Study Divisions helps to monitor TRB’s inclusion of diverse people in its activities.
- 72 percent of the members of Technical Activities standing committees identify as white.
 - A larger percentage of underrepresented individuals are friends of TRB standing committees. As friends transition to full members, committees will become more diverse.
- C. CRP panels have had a gradual but at time uneven increase of females and minorities over time.

VII. Diversity and Inclusion Plan Update (p. 51)

Lewis

- A. A special committee was formed after release of the January 2018 release of the diversity and inclusion plan.
- B. The plan calls for diversity and inclusion to become a part of TRB’s culture.
- C. Action items and strategies are underway. Seven strategies and action items include:
 - 1. Recruitment of committee and panel members, including chairs. Working with the chairs to highlight diversity. Diversity in panels and committees has increased by 2-3 percent.
 - 2. Engage with other transportation organizations, including tracking MOUs and surveying staff to see what conferences they’re attending and evaluate any gaps.
 - 3. Mentoring and greeters at the Annual Meeting for newer attendees, as well as exploring diversity on panels at the Annual Meeting and Conferences.
 - 4. Cooperative Research Program: creating a large pool of submitters to CRP proposals, and providing advice on how to create good proposals (either through training or in one-on-one discussions at the TRB Exhibit Booth at the TRB Annual Meeting).
 - 5. Staff diversity: Survey all TRB staff that have been here 6 years or less to see how welcoming the staff have been, and build on the TRB mentoring program. Also working with the Academies on Implicit Bias training.
 - 6. Including inclusion and diversity in the TRB Strategic Plan and Critical Issues in Transportation.
 - 7. Improving existing data to increase response rates in MyTRB. Also providing more pictures in publications and digital websites that highlight TRB’s diverse volunteers.

The discussion included several suggested questions to explore:

- 1. How is TRB measuring success? Benchmarking with other similar organizations is an option.
- 2. Where does TRB want to be five years from now? There’s a challenge for targeting success based on numbers.
- 3. How is TRB incorporating age in the diversity plan?
- 4. Could partner organizations offer scholarships for people to attend the TRB Annual Meeting?

VIII. Resilience Task Force Update (p. 54)

Arroyo

- A. The task force focused on resilience in relation to extreme weather and sustainability, and started in fall of 2017. The task force met in person during the 2018 Annual Meeting and divided into subcommittees which in turn developed issues to address:
 - 1. Nexus of resilience and sustainability
 - Adopt a definition of sustainability in relation to making infrastructure more resilient.
 - Develop a literature review and learn best practices at a state, local, and regional level.
 - Perform a comprehensive review of research and identify.
 - 2. Multimodal and cross-modal issues

- Call for research into multi-modal and inter-jurisdictional collaboration.
- Work with the goods movement community to better understand how transportation agencies can help facilitate large-scale modal “flexing” (movement of goods via non-primary networks) to help minimize freight flow disruptions.
- Actively encourage all active resilience and sustainability-oriented committees to weave equity and inclusion into their activities as a fundamental theme.
- Promote research that helps better characterize and quantify the resilience benefits of modal diversification for passenger trips (along with sustainability co-benefits).
- Facilitate dialogues and/or forge research partnerships on the topic of resilience with other (non-transportation) sectors and utilities, including the business community.

3. Community Resilience

- Encourage committees to map and identify (in a generalized way) relevant authorities, levels of government, and other stakeholders that have a role in planning or providing transportation services or infrastructure, and those within sectors that rely on transportation services.
- Consider participating in a community resilience stakeholders group. This group should be used to periodically check in with relevant groups to determine whether TRB research and outreach efforts are meeting the needs of communities, and where to make improvements.
- Use existing TRB publications more effectively as communication tools. Easy-to-digest publications, like *TR News*, could be used to communicate best practices in transportation that foster community resilience, and to engage with stakeholders at the community level.
- Revisit the Resilience Section’s Communications Plan to determine any updates needed to ensure wide dissemination of TRB’s resilience work, gathering input from organizations that work on community resilience in this process (e.g., Resilient America Roundtable, USDN, etc.). In the near term, work with the National Academies’ new Climate Communications Initiative.

4. Cost and Financing

- Encourage agencies that provide funding opportunities to communicate these opportunities at TRB committee meetings and other convening activities.
- Use the TRB Annual Meeting to educate and highlight existing funding methods and flexibilities.
- Create case studies of how states, cities, and others have financed climate adaptation projects.
- Assist FHWA, FTA, and FEMA in providing information as they develop guidance to leverage emergency funding for resiliency.
- Highlight findings of soon-to-be-completed TRB research on benefit-cost analysis methods (e.g., ACRP 02-78, NCHRP 20-101). Encourage additional CRP research to further improve benefit-cost analyses and address gaps. Synthesize existing best practices in communicating economic tradeoffs of resilience investments to decision makers.

- Encourage CRP research to identify innovative options for resiliency funding and use committees and communications infrastructure to deliver findings to TRB stakeholders.
- B. The task force is improving efforts to communicate with communities to inform communities while meeting their needs and priorities within TRB’s direction of research.
- C. The group discussed a number of suggestions for the task force to consider:
- Involve another stakeholder from the insurance agencies.
 - Involve other units from the National Academies, including the Gulf Research Program and Policy and Global Affairs, or report on the collaboration from NASEM.
 - Intersect with homeland security and state security and management agencies. Adding this intersection will be beneficial for state DOTs.

IX. Break

X. Development of New TRB Strategic Plan (p. 60) Pedersen

- A. The Subcommittee on Planning and Policy Review (SPPR) will draft the next plan.
- B. The new Strategic Plan will need to be developed in context of financial uncertainty.
- C. TRB will build upon the current strategic plan as opposed to starting from scratch. This effort will incorporate additional plans that have been developed in the past five years. TRB will not conduct an extensive outreach regarding the plan, but will be reaching out to committees for feedback.
- D. Timeline:
- TRB staff will review the vision, mission, strategic goals, and the SPPR will discuss feedback in their October 2018 meeting.
 - SPPR will present draft vision, mission, goals, and strategies at the January 2019 Executive Committee meeting.
 - SPPR will be reviewing the feedback and finalizing in June 2019.
- E. The strategic plan may potentially include how to:
- Meet sponsor needs
 - Address critical issues in transportation
 - Diversify TRB’s revenue sources
 - Develop contingency plans
 - Take advantage of technology and digital communications
- F. Participants discussed how the NRC’s Strategic Plan effort will overlap TRB’s Strategic Plan’s effort in time, and discussed adding contingency planning to adapt the TRB plan to the NRC plan. The conversation also included a suggestion to add global issues to the plan.

XI. Critical Issues in Transportation (p. 63) Turnbull

- A. The critical issues document will consist of two versions:
- Main report that is detailed and lays out 73 critical issues at a granular level.

- Product based on the main report that would be written for the general public, geared more toward policy makers, government, the media, and lay readers. This product will have a digital and print component.
- B. Main messages:
- This is a transformational time for transportation.
 - Transportation exists to support broader societal goals.
 - How do we help people see themselves within TRB?
- C. Dan Sperling: Setting the stage for the discussion on automated vehicles (AVs) and shared mobility
- Dr. Sperling discussed what he terms as the “three revolutions” – automated/connected vehicles, sharing, and electrification.
 - He posed policy questions to the group, exploring how fast this transition will be, how safe, and what the consumer demand will look like.
 - These “three revolutions” have the ability to create a sustainable and equitable world, only if the vehicles are part of a mobility as a service approach. If society superimposes these vehicles on our current transportation patterns, then we’ll be traveling a lot more. If these three revolutions work together, we’ll reach the sustainability and equity goals in society.

XII. Lunch

XIII. Forum on Preparing for AVs and Shared Mobility Systems (p. 92) Norman

- A. The Forum is an official activity of the National Academies of Sciences, Engineering, and Medicine.
- Forum started in February 2018, met in May 2018 and will meet again in July 2018.
 - Approximately 40 organizations and entities participating.
- B. Initial products:
- White paper:
 - Initial version prepared by TRB staff at the request of Forum participants
 - Peer-reviewed by Forum participants
 - Final draft expected to be available in time for the Forum’s July meeting
 - Will be published as a TRB e-circular
 - Will be reviewed for updates on an annual basis
 - Research Needs Catalogue
 - Forum members have identified 125 key research needs across five primary focus areas
 - These have been grouped into approximately 35 subareas
 - This effort is being carried out in conjunction with an NCHRP project that is updating the research roadmap specifically for NCHRP projects in this area
 - The forum will develop a top ten priority research list.
 - A directory of information resources, which includes completed reports that directly relate to the mission of the Forum

- A forum website that is expected to be launched at the July meeting.
- C. Automated Vehicles Symposium 2018 (AVS2018) presence, which will attract about 1,500 attendees:
- Breakout session to discuss these research priorities
 - Presentation by Neil Pedersen at a plenary session

XIV. Policy Session on Electric Vehicles (p. 106)

Turnbull

- A. [Russell Houston](#), Associate Executive Director of TRB, presented an overview of TRB's work on Electric Vehicles.
- B. [Timothy E. Lipman](#) is an energy and environmental technology, economics, and policy researcher and lecturer with the University of California, Berkeley. He is serving as co-Director for the campus's Transportation Sustainability Research Center (TSRC), based at the Institute of Transportation Studies, and is also director of the Northern California Center for Alternative Transportation Fuels and Advanced Vehicle Technologies (NorthCAT) effort.
- Electric Vehicle (EV) and battery technologies are progressing rapidly
 - Vehicle charging infrastructure and innovative new approaches
 - "Vehicle-Grid Integration" (VGI) offers potential for reduced EV charging costs as well as improved grid operations
 - EVs are making inroads in Medium/Heavy Duty markets as well as Light-Duty Markets
 - Overview of hydrogen and fuel cell technologies
- C. Peter Kosak is the former executive director of General Motors (GM) Urban Mobility where he helped pioneer GM's urban mobility and shared-use strategies, developed new mobility technical and operational capabilities, and led the company's first market deployments globally.
- Ride sharing will be a catalyst for electrification in vehicles and will change how vehicles are owned. Original Equipment Manufacturers (OEMs) will need to fit into a broader mobility ecosystem.
 - The idea of fractional ownership and fractional use will help those who own cars get an income on the weekends.
 - Locations where cars are stored and where cars are driven should determine where charging stations should be placed.
 - Once society transitions to automation, Mr. Kosak suggests that cars will be used to drive others around in level 3 or 4 autonomous while the owner is not using it. Renting out an autonomous car while at work will enable the car owner to profit off of an unused vehicle, rather than it sitting in a garage or parking lot.
 - He finds that public private partnerships, in addition to policies, will propel electric vehicle deployment in a way that will increase sharing, reduce congestion, and provide economic opportunities.
- D. [Daniel Bowermaster](#) is the program manager for electric transportation at the Electric Power Research Institute (EPRI), an independent non-profit center for public interest energy and environmental research.

- Mr. Bowermaster presented information about the impact of electric vehicles on the electric grid. There should be about one million EVs on the road in the United States by 2019.
- Utilities are proposing approximately \$2.8 billion in electric vehicle charging infrastructure.
- Mr. Bowermaster explored the idea of utilities providing DC-as-a-service, to provide fast charging voltage to customers. EVs can be a huge grid resource. Scalability and security are needed at the lowest possible cost. EV success is contingent upon the reliability or availability of grid services.

XV. Plenary Discussion

Turnbull

- A. Vicki Arroyo, Georgetown Climate Center: Georgetown has been focusing on working with the states with implementing electric vehicles and reports making progress. For example, states are using the Volkswagen emissions cheating scandal penalty fines to invest in reducing emissions. California has been leading the way and influencing China. The Georgetown Climate Center is hosting regional listening sessions to engage the public on reducing emissions at the local level. Many states are creating their own emissions targets. Without additional policy, particularly on encouraging shared AVs, Arroyo reports that it will be challenging to reach emissions goals.
- B. Michael Berube, U.S. Department of Energy (DOE): DOE has been providing federal research to reduce the cost of electric vehicle (EV) batteries. With DOE research, they are working to get EV Battery Packs to less than \$100 / kWh. DOE is trying to develop a Silicon High Voltage Lithium Nickel Manganese Cobalt Oxide (NMC) battery by 2022. As renewables come on board, can we charge all these cars quickly at high power without stressing and costing the grid? We need to somehow charge during the day (80 percent can be charged at home). Can you use trucks to put energy back into buildings? DOE is researching trucking, charging at multi-unit dwellings, and what does it mean to have EVs at maximum volume, etc.

General questions and comments:

1. Explore the psychology of customers, including what motivates them (social, economic, and environmental factors).
2. Where does the research need to take place?
 - Exploring the psychology of user behavior or stakeholder behavior.
 - We are past the early adopter phase and now into the early market. How do we customize regional solutions?
 - Look at the Air B&B model, but for cars. How do you let people lend their cars out and then be able to have them on demand?
3. Presently, there is a huge congestion problem for cities and airports, and local government needs to be involved.
4. Sharing and electrification sounds like “eating your spinach” and automation is what Americans want. The cost of electrification will need to decrease, and once that happens, it won’t be like “eating your spinach.”
5. Airbags were invented in the 1950’s but it took decades for policy to shift and require that these devices become standard in cars.

6. Environmental and consumer psychology is important. Energy being put into the grid isn't necessarily good for the environment. It would be wrong to say that EVs are zero emission because it depends on where the grid is getting its energy.
7. How do we incentivize multiple occupant use and de-incentivize single occupancy?

XVI. Break

XVII. Breakout Groups

All

XVIII. Break for Evening Activities and Reception

XIX. Rapporteur Reports from Breakouts **Turnbull**

<http://www.trb.org/Main/TRBExecutiveCommitteeMinutes.aspx>

The rapporteurs summarized the discussions they had in their breakout groups about each presentation, and then discussed TRB's value proposition in relation to addressing challenges. The slides posted at the link above summarize the main themes of the breakout sessions.

A. "The Big Picture" Breakout Report **Ballard**

- Costs of noncarbon electricity generation have declined steadily, independent of fossil fuel market volatility.
- Value and effectiveness of EV uptake will vary with regional density and user objectives for mobility.
- There are many use scenarios for EVs and shared mobility – individual choices will reflect individual circumstances.
- The mobility system has a large installed base and many moving parts – modeling how EVs can fit and how EV use may grow is challenging.

B. Electric Vehicles and the Automated Vehicle Revolution **Sperling**

- Vision: AVs+EVs+pooling = triple bottom line (sustainability)
- New models for car use and ownership.
- EVs for ride-hailing (eg, Maven could be a good business model and marketing strategy)
- E-buses: how promising?
- What are the implications for transportation funding (fuel taxes)?
- Equity: accessibility and cost
- Behavior: willingness to share, give up car ownership, what about elderly travelers?
- What is the national role in safety standards for AVs?

C. The Electric Grid Breakout Report **Hendrickson**

- Grid reliability and capability management are generally sufficient for EV rollout. Various generation alternatives exist (natural gas generation, delaying coal plant retirements, renewable energy, etc.).
- Key issue for grid is achieving cost effectiveness with scale up, especially for charging infrastructure (either fixed or induction).
- Multiple alternative fuels will likely compete for the foreseeable future (hydrogen, cng, electric, etc.)

XX. Discussion of Policy Session Follow Up **Turnbull**

A number of suggestions arose to follow up on the discussion of electrification:

- A. Idea-a-thon: Potentially work with TRB Young Members Council on how students can evaluate data.
- B. Convening events on workforce labor topics.
- C. Could TRB help organize research on promising practices for electrification?
- D. Looking at future scenarios and explore the impact that electrification would have on society.

XXI. Future Policy Sessions (p. 120) **Houston**
The Executive Committee learned about selecting either transportation’s role in rural wellbeing, or transportation and artificial intelligence for the January 2019 policy session.

➤ **Approved: Transportation’s Role in Rural Wellbeing, while keeping the topic of artificial intelligence for consideration in the June 2019 Executive Committee meeting.**

XXII. Centennial Update (p. 127) **Houston**

- A. TRB will publish a book featuring the work and impacts of the Transportation Research Board. The book will be 60,000 words in length that will document its history, key achievements, major programs, and the institutions and individuals that have supported TRB.
- B. The draft manuscript will be available in September 2018 and the book will be ready for distribution in January 2020. (Note: As of September 2018, the draft manuscript will be completed in October 2018.)
- C. The estimated budget for the Centennial Celebration is \$650,000.
- D. To participate, visit www.TRB.org/centennial and become an individual (Century Club) and organizational (Century Patron) member. Both Century Club and Century Patron members receive recognition for their contribution in various locations including the book, website, and booths.

XXIII. Break

XXIV. Technical Activities Update (p. 129) **Brach/Park**

- A. Technical Activities Council (TAC) Update
 - TAC is undergoing a strategic alignment. TRB is not creating new committees right now and is exploring how to improve the management of committees.
 - TAC is exploring ways to improve internal and external communications.
 - Internal communications includes communications between chairs and volunteers, companies that are sending people to TRB, and between staff and volunteers.
 - External communications: TAC is interested in articulating the value of TRB to volunteers and prospective volunteers.
 - TAC is also exploring ways to identify new revenue sources, improve strategic coordination, and define what success means to our committees.
 - TAC explored the critical issues and took a survey of committee chairs on the list of critical issues and they ranked what they perceived to be the priorities.
 - Dr. Jon A. Epps, an expert in pavement and materials, has been nominated as the 2019 recipient of the Thomas B. Deen Distinguished Lectureship.
 - Inclusion and Diversity: committees would like to focus on communications to chairs on guidance and how committees can be a welcoming environment for all. Other ideas include training chairs, developing focus groups, and developing trading cards for information on the committees.
- B. Technical Activities Division

- Verified Annual Meeting Attendees: 13,781
- Highlights of the 2018 meeting included the first *Careers in Motion* Career Fair, *War Games* workshop, New Attendee Welcome Session, and the new configuration for poster sessions.
- Accolades from public sector, academic, and general attendees were received about the 2018 Annual Meeting, including setting the gold standard for poster sessions and ensuring mobility for persons in wheelchairs, which has improved the overall experience of all attendees.
- 2019 Annual Meeting: New branding to be used for the meeting.
- Transportation Research Record: new website and peer review software rolled out spring 2018. If any Executive Committee members want to be involved with the TRR User Groups, email PLockhart@nas.edu.

XXV. Marine Board Update (p. 138)

Brooks

- Marine Board areas of interest include automated ships, vehicles, shipping; safety; Arctic operations; and more.
- The Marine Board visited the Port of Savannah. Explored port operations, environmental problems of port deepening, and heard from manufacturers about supply change management.
- Two new policy studies: Review and Update U.S. Coast Guard Ship Stability Regulations (September 2018) and Update of National Naval Responsibility for Naval Engineering.
- Marine Board Call for Nominations for a 3-year year term

XXVI. International Subcommittee (p. 141)

Brooks

- The International Subcommittee is determining a baseline for an international activities performance program. The task force is trying to better determine the baseline data and is waiting for the next TRB Strategic Plan to be in place before determining what the growth should be.
- Subcommittee should be streamlined to those who are active members.
- Goal 1: Engagement of non-U.S. colleagues and partners. Metrics include:
 - Number of non-U.S. subscribers to the TRB E-Newsletter (adding more people, not countries)
 - Growth of TRID use by international users
 - Number of experts serving in CRP panels and standing committees from non-U.S. countries
 - How many international users for the TRR website
- Goal 2: Leverage bilateral international cooperative benefits
 - Increase patrons, exhibitors, attendees at meetings and conferences
 - Increase webinar registration (given that the webinars are recorded and may not be viewed live)
- Goal 3: Provide guidance on new international activities
 - Better understand through qualitative narratives to determine value
- Goal 4: Facilitate Cooperative International Agreements

- Better understand through qualitative narratives to determine value

XXVII. CRP Update (p. 149)

Hedges

- A. Provided an overview of the National Cooperative Highway Research Program (NCHRP), Transit Cooperative Research Program (TCRP), Airport Cooperative Research Program (ACRP), and Behavioral Traffic Safety Cooperative Research Program (BTSCRCP). Each of the programs are a partnership between TRB, an industry association, and a federal agency.
- B. Highlights include:
- The newly established BTSCRCP: \$2.5 million program. First four projects have been selected.
 - CRP 2.0: Improving internal processes and improve the user experience

XXVIII. Consensus and Advisory Studies Update (p. 156)

Menzies

- A. Status Update on Current Studies

Completed:

- Admissibility and Public Availability of Transit Safety Planning Records: May 2018

Studies Nearing Completion:

- Truck Size and Weight Research Road Map (FHWA)
- Performance of Innovative Bridge Research Program (FHWA – Fast Act)
- Regulating the Safety of Small Propane Pipeline Facilities (PHMSA-Pipes Act)
- Improving the Content, Clarity, and Organization of Coast Guard Ship Stability Regulations (USCG)
- Future of the Interstate Highway System

- B. Transit and Mobility Management: Getting started and seeking feedback on areas to focus on or committee membership:

- C. Potential Self-Funded Studies

- Preparing for a future of mixed fleet conventional, connected, and automated vehicles during the transition
- Public policy responses for ethical issues arising from vehicle automation
- Accommodating the forthcoming electric vehicle revolution
- Investing in resilience: Strategies to Aid Decision Makers
- Ensuring Public Private Partnerships in the Public Interest

XXIX. Other business

Next Meeting: January 16-17, 2019 at the Marriott Marquis, Washington, DC

Next Summer Meeting: June 19-20, 2019 at Woods Hole, Massachusetts