

The National Academies of
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TRANSPORTATION RESEARCH BOARD

Executive Committee Meeting Minutes

January 14-16, 2020

Liberty LM, Marriott Marquis Hotel

Washington, DC

January 14, 2020, Tuesday

6:00 p.m. Executive Committee Reception/Light Dinner - Marriott Marquis, Marquis Ballroom

January 15, 2020, Wednesday

8:00 a.m.

Introductions and Announcements

- a. Policy Statement on Preventing Discrimination, Harassment, and Bullying
- b. Bias/Conflict of Interest Discussion – There were no conflicts of interest reported.

8:15 a.m.

Approval of June 19 & 20, 2019 Minutes (Arroyo) Action

The minutes were approved.

8:20 a.m.

Approval of Consent Agenda (Arroyo) Action

- a. Conference Approvals
 - b. Subcommittee on Policy and Planning Review Report
 - c. Cooperative Research Programs
 - d. Centennial Celebration Update
- The consent agenda was approved.

8:25 a.m.

Executive Director's Report (Pedersen) Information

- The TRBAM attendance will be announced tomorrow. Last year's attendance was 13,300, which was respectable because of the snow storm during the 2019 conference.
- Neil commended Ann Brach and her Technical Activities Division for its advances with TRR and with the process for paper submissions. TRB's work on webinars also helps with people who can't get to all of our conferences in person.
- It's been 40 years since we last did a strategic review of all the committees, like the reorganization that is ongoing now, so Neil commends the TA Council and Ann for this.

- We continue to have a very strong Cooperative Research Program under Chris Hedges' leadership. Under a pilot, we are doing some work for FHWA under the CRP model. We are also going through a major review of the program and making a number of process improvements.
- With the Consensus Studies program, we have had a major communications effort underway for the Future of the Interstate work that will continue into the first six months of 2020.
- We have had strong support for private sector funding for AV and CV work.
- The SHRP2 and safety database agreement expires this spring and we will transfer stewardship responsibilities back to FHWA later this year.
- The TRID database is one of the greatest values our sponsors get from TRB but not enough people know about it. There were 2.3 million searches from 238 countries or territories, with about half of those searches being from other countries.
- In terms of the Strategic Plan adopted in June, Katie Turnbull will give a report but we are particularly focused on the critical issues we developed.
- A partnership letter of intent was signed between TRB and the Chinese Overseas Transportation Association on Sunday.
- The National Research Council is going through an organizational review called "Transformation" that TRB is making sure our strategic plan is in alignment with. TRB's finance operations have been organizationally moved to the National Academies' Office of the Chief Financial Officer, but Gary Walker and his team remain embedded in TRB's offices.
- Communications is upping its game under the new leadership of Paul Mackie with the use of social media and the development of a strategic communications plan. The communications team has been organizationally moved within the National Academies' Office of the Chief Communications Officer, while still embedded within TRB's offices as well.
- We hope you will proudly display the TRB history books in your offices. Sarah Jo Peterson did a great job of presenting stories from the book during this conference.
- We are in very good fiscal shape, but we are facing a \$900,000 cut this year in U.S. DOT funding. We are being conservative with our reserve fund because of some significant uncertainties.
- Vicky Arroyo called for a round of applause for the helpful, professional TRB staff.

8:40 a.m.

Strategic Plan Implementation (Turnbull) Presentation

- The strategic plan is ambitious. Our goal as the EC is not to manage that but to contribute to it and think of the ways EC members can each add value. It is the centennial this year so that presents an opportunity for us all to raise the visibility and the importance of transportation research.
- We had great advancements this year in inclusion and diversity, thanks to Karen Febey and the contributions of the Inclusion and Diversity Special Committee.
- We are reviewing the critical issues identified two years ago.
- We are looking at different ways of recruiting young professionals.
- We are looking at ways to make it valuable to support TRB in many ways.
- We are looking forward to implementing the strategic plan.
- U.S. DOT has a partnership with the Ron Brown School in DC to develop young future leaders from a group of young men from difficult backgrounds. Diana Furchtgott-Roth said organizations are welcome to have the program visit.

8:50 a.m.

TRB Division Committee Report (Hendrickson) Presentation No Power Point

- Bias and conflict, diversity, sensitivity of results, monitoring of TRB policies and results are all concerns of the NRC and the National Academies.
- The committee looked at 75 reports and 75 committees over the past year.
- We're making slow but positive progress on diversity, 33% of committees are women. Over same time period, 2.8 to 3.4 percent are African Americans, which is progress but very slow progress.
- If you poll TRB people and National Academies, they would know very little about each other.
- A new initiative by NA on Climate Change Adaptation and Mitigation is something TRB should be working with very closely.

9:00 a.m.

International Subcommittee Report (Ford) Presentation

- The subcommittee has met three times in the past year.
- Neil Pedersen and Bill Anderson have been a great help this past year.
- It's important for us to promote the volunteers who are getting this work done.
- There is a flyer being distributed that reports on all the activities of the subcommittee from 2019.
- Coordination between TRB and other countries included 359 access sessions from 154 countries. This year we have a full year of data on this. Calls for papers from outside the U.S. is also being tracked, but the challenge is getting the paper writers to the Annual Meeting to present.
- TRB has been active in participating in international conferences, including the World Transport Convention through the TRB Rail Freight Committees, World Road Congress in Abu Dhabi. Representatives of partner international organizations also were involved in organizing sessions for the TRBAM 2020.
- Webinars have been an important part of TRB's international engagement and we will look to continue to increase this participation.
- TRB had one letter of intent to partner with COTA, a non-profit organization consisting of Chinese transportation experts. We are also reviewing a potential LOI with PANAMSTR, which would be our first partnership agreement with a Latin American organization. We will review the structure of our agreements to make sure they are well constructed. These groups clearly see TRB as the source of the research. Neil Pedersen added that there is a Power Point he will share with the EC that describes the value of each partnership.

9:10 a.m.

USDOT Modal Administrators Panel (Arroyo) Discussion

- The discussion on how TRB can help their agencies is led by Nicole Nason of FHWA, Jane Williams of FTA, and James Owens of NHTSA.
- Nason said FHWA is very focused on pedestrian safety. It's not simply that we need more crosswalks. There are a lot of fatalities that happen at night. What works in Orlando is not what works in rural communities. Engineering countermeasures, such as adjusted crosswalk lighting and sidewalks, dramatically reduce fatalities. We are focused on research, development, and technology and we want to share the large budget we have for R&D. We

want to do work on truck platooning. You are all welcome to our Turner-Fairbank Highway Research Center. We have women leading federal and state DOTs across the country at a record level. Women are about one third of the FHWA and most of the engineers are men. We believe the best solutions will come from diverse teams of professionals and formal invites will be coming to an FHWA event in March on the topic. The department is also determined to do its part on human trafficking. The DOT secretary has an event on this happening in January with hopes of raising the profile of the issue.

- Williams of FTA said there is not a one-size-fits-all approach because all transit agencies are very different. Also, we all really need to leverage the data we are collecting because it can really make the difference in saving lives. There is a major focus on funding transit needs in small cities and rural areas.
- Owens of NHTSA said we lost an unacceptable number of people on the nation's roadways and that bicyclist and pedestrian rates went up as well. There are declines in impaired driving-related fatalities, but drug-impaired driving is a growing problem, especially in states that have decriminalized marijuana. We have a long way to go to zero fatalities. The fatality rate in 1970 when NHTSA began was four times worse than it is now. In 1970, we were losing more people on our roads each year than we lost in Vietnam over 10 years. Drunk driving was not taken seriously then, but it is now socially unacceptable to drive while drunk or under the influence of any illegal or prescription drugs. Crash-avoidance technology is the next wave that we are excited about, and we want to have the OEMs install automatic emergency braking in all vehicles by 2022. NHTSA has also done a lot of research on test procedures for metrics on crash avoidance.

10:00 a.m.

Break for "TRB: Our History and Our Future" Discussion and Chair's Luncheon

2:15 p.m.

Executive Committee reconvenes

Policy Session on Artificial Intelligence (Braceras) Presentation

- The number of paper submissions to TRB about AI has tripled in the past four years.
- Prasana Balaprakash of the U.S. Department of Energy discussed how he can't wait to see AI improve our mobility challenges and battery improvements.
- Richard Davies of the U.S. DOE said that AI is not the answer to everything. We're trying to figure out when these systems offer reliable information and when they do not. We have our eye on coordinated traffic control the most, especially in a project ongoing in Chattanooga. We think it will enable transportation technologies across many different areas and AI innovations are likely to accelerate.
- Cathy Wu of MIT says one of the potentials is that AI can make safety less complex by notifying and predicting when unsafe events are about to happen. AI can provide solutions through demand prediction, activity recommendations, and a newer area is to help coordinate city functions like transportation, maintenance, energy, waste, and even workplace solutions.

3:15 p.m.

Policy Session: Artificial Intelligence (Braceras) Discussion

- OEMs will hold their own data close to their chests and it may be interesting for state DOTs to pool the data for the public good but OEMs view the data as something they can monetize. It's important to answer what is the public good about the AI data. Is it even a debate whether to go

AV or not? Some of the biggest challenges are on the data side, and if we had better data we could start to solve some of the problems. For data protections, make sure you don't put information (for example, license plate numbers) into systems that could create vulnerabilities. Rather than focusing on entire cities like Chattanooga, is the evolution of AI happening at intersections or in smaller geographical spaces?

- Some of the major questions the research community should examine include:
 - the policy and public aspects of evolving AI in transportation
 - the data sets that are needed to evolve AI
 - monitoring of the stress level of people in AI vehicles
 - the equity implications
 - find ways to score the safety of the AI of vehicles all the way from a total vehicle to individual technologies within them
 - cybersecurity concerns, and
 - the impacts of air taxi transportation and the effects on other forms of traffic.

5:30 p.m.

Break for evening

Thursday, January 16, 2020

8:30 a.m.

Summary and Discussion of Special Policy (Arroyo) Discussion

- New mobility options were funded by the DOE as a result of the June Policy Session.
- Themes (transportation is a new domain for AI, data is key, complexity, unintended Consequences – See slides
- Potential Actions – identify transportation problems and data, convene computational scientists and transportation experts, create more visibility for AI transportation research, create partnerships between data owners and researchers, explore the relationship between the common good and individual tradeoffs, need to explore equity in AI, bring human behavior models and apply AI, develop transportation benchmark solutions – see slides
- The group discussion included:
 - AI in aviation has been a tremendous help and we should be using it without question.
 - We are a few years away from deploying AI in transportation. We need to get the experts to identify the problems we want AI to help solve. There needs to be a better relationship between the researchers and the owners of the roadways.
 - What are the strategies we could use and problems that we propose we could solve with AI? Pilots and demos are the ways we are going to learn, and there is so much we don't know. We need to identify ways that we might all partner together for a AI pilot at the association level. NASA has announced an AI competition, but it is not focused on transportation. Maybe DOT, DOE, NSF, and TRB could organize something. We need to work with behavior scientists on the issue of AI.
 - AI would help agencies process the data they already have. We don't have the capacity to go through the data that we already have. We need help with a cost-effective way to process the data. Is the way we are gathering data and storing it going to be useful in the future?

- We need to keep privacy in consideration as we discuss AI. We also need to consider bias. Some data owners create fake data that mimics real data as a way to get around the privacy issue.
- We need training on what to ask for when dealing with big data.
- We need to include big data and AI to help on equity issues.
- Who should establish standards? This could be a problem statement for CRP, and TRB does have a standing committee on AI. We should take this discussion to that committee and work with them on a potential agenda, workshop, sessions, and research statements.

9:15 a.m.

Hyperloop Presentation (Herman) Presentation

- Introduction of the hyperloop concept. 35 minutes from LA to SF via hyperloop, 600 mph, no emissions, electromagnetic power, and levitation. A number of companies are active. Market demand is growing and feasibility studies are ongoing. Regulators are starting to take notice. DOT is looking at the issue about bringing emerging technologies to market. Intercity options are available and faster and more efficient. The benefits are speed, sustainability, safety, and on-demand. The challenges are that there is no roadmap on how to bring this to implementation, regulatory, access to rights of ways, not a cure all, and displacements, timing, short routes first, freight, and energy impact is substantial and could break the grid. In summary, technology and the system have evolved quickly and there needs to be cooperation with everyone to make it happen.

9:30 a.m.

Institutional/Governance (Puentes) Presentation

- Participants at the Transportation Now workshop agreed that reform in transportation institutions is needed to address the evolution of transportation. What are the outside forces affecting transportation today that could affect reform? Transit agencies changing into mobility managers is one of the interesting changes happening. Perhaps a relatively small government funding program could encourage governance and institutional reform. Eno knows there's an appetite for this and is looking for partners.

9:45 a.m.

Future Policy Session Topics (Houston) Discussion

- In previous meetings, the EC has discussed and decided that urban air mobility is a good topic to discuss at the Summer 2020 EC meeting. Throughout 2020, we will be looking at the future and so this fits in well. Several EC members gave input on how the discussion should include how the technology fits into a broader context of societal issues, such as behavioral responses, workforce issues, equity and mobility, carbon reduction, resilience/security, electrification, and tying it into other TRB work such as the future of the interstate report. Governance ties closely into all of these suggestions and the topic of urban air mobility.

10:00 a.m.

Technical Activities Council Report (Park/Brach) Information

- Registration is a new record of 13,900 (as of January 15; this eventually went up just above 14,000).
- Next year's theme will be Launching a New Century of Mobility and Quality of Life.

- The objectives of the restructuring of TRB steering committees were to refresh them to better align with today's transportation landscape, allow for the attraction of the next generation of volunteers, foster greater collaboration, and create governance within the structure to better continuously improve and stay current.
- The key principles we used were to focus on critical issues, use an evidence-based approach to these issues, innovation, and collaboration.
- The committee leadership has had a tremendous amount of work to provide input on the restructuring over the past year. Everyone had a chance to make input leading up to the December launch of the realignment. We expect to have it become official as committee rosters get approved this spring.
- The structure is lighter and more streamlined. Some of the biggest changes were design/construction group merged with operations/preservation, safety and operations merged, an executive management section was established, some committees based off specific laws and regulations were broadened, sustainability and resilience and transportation and society groups were created. Changes were made in other structures such as coordinating councils and subcommittees.
- Up next: Questions that volunteers still have will continue to be addressed. The first activity will be for every committee to examine their scopes. There will also be some reorganization of TRB staff. Shaking things up is already helping people think of new things, ideas, and collaborations. Twelve committees have been added, so a scoping process is needed. A new webpage has been added.

10:20 a.m.

Break

10:30 a.m.

Marine Board (Comstock) Information

- In the fall, we had an engaging meeting (with the discussions available on the Marine Board website).
- We welcomed two new members in September: Dr. Sandra Knight and Jonathan Kaskin.
- The spring meeting will be May 12-14 at the Keck Center in Washington DC, including a potential keynote speaker from the USCG, reports about recent Consensus Study Reports, and a potential discussion about critical issues and TRB's Strategic Plan.
- The TR News July/August 2021 issue will focus on innovation in marine transportation.
- The fall meeting will focus on maritime training, education, technology, and research and innovation November 9-10 at Kavli Auditorium in Washington DC.

10:40 a.m.

Broadening Participation in TRB (Lewis) Information

- Report of the Inclusion and Diversity Special Committee: TAD staff has given committee chair data to help them in making strides in inclusion and diversity. The committee is working with other organizations to better understand how well TRB is doing compared to them. It is also working to do outreach about the AM and specialty conferences. There is now information in TRB contractor materials related to their organizational diversity. There is a higher focus on these issues in TRB materials, such as TR News and webinars. There is also work under way to improve data in regards to these initiatives, including an MOU tracking mechanism.

- The number of African Americans working as staff of TRB has increased from 15% to 24% in the past five years.
- The wall along the hallway in TRB's offices will see new photography that represents this new diversity.

10:50 a.m.

Minority Student Fellows (Febey) Information

- This program provides funding to universities so students may come to the TRBAM to attend many events and present their research. Twenty-nine students participated this year, from 16 schools, including one new school this year.
- This is a group effort with TRB, FHWA, DOE, DOTs, and donations through the TRBAM registration process. These donations provided support to four students to be able to attend.

11 a.m.

Young Members Council (Ivanov) Information

- YMC provided input on the realignment and TRB Strategic Plan, which we'll be working on in 2020. The council organized 10 events along the lines of career development. The group has been advising groups on realignment; progress is being made on the group's leadership changeover that will occur this year; work with TRB communications staff has been underway; and the YMC has been working to expand the success of Careers in Motion.

11:00 a.m.

Communications Strategic Plan (Mackie) Information

- TRB is working on a Strategic Communication Plan update, which is to be approved by the EC in the next year. Important parts of the strategy include audience analysis, website, newsletter, and webinars.

11:20 a.m.

Consensus and Advisory Studies (Menzies) Information

- Highway innovations and the future of naval engineering were two reports that were released in the last half of 2019. The report on vessel stability was released at the same time as a carrier that turned over in Georgia and is still being removed. Relevance about reports can happen at any time. There are also new studies underway on reducing lead concentrations from aviation gas, Coast Guard use of unmanned technologies, and the feasibility of wheelchair restraints in airplanes. Potential studies include resilience metrics for transportation, the safety implications of moving liquid natural gas (LNG) by rail, and the implications of removing interstate segments.

11:45 a.m.

Other Business and Final Announcements (Arroyo) Discussion

- There was no other business raised.

12:00 p.m.

ADJOURNMENT (Arroyo)

- Next Summer Meeting: June 10 & 11, 2020 (Wednesday & Thursday), J. Erik Jonsson Study Center, Woods Hole, MA
- Motion was made to adjourn.