

The logo for Traffic Simulation features a stylized 'T' on the left, a winding road with a car icon in the middle, and the word 'Simulation' on the right. The 'S' in 'Simulation' is replaced by the road graphic.

# Traffic Simulation

## Transportation Research Board Standing Committee ACP80

### TRB CREATES ACP80

In the year 2020, the Transportation Research Board (TRB) reorganized its committee structure. In doing so, it simultaneously created and established the standing committee on traffic simulation (ACP80). The new committee has an official membership roster. Many of the new members were active on the TRB Joint Simulation Subcommittee (SimSub). The new chairs of ACP80 are Mohammed Hadi (Florida International University) and Sanhita Lahiri (Virginia Department of Transportation). The new chairs of SimSub are John Shaw (Iowa State University) and Chris Melson (Louisiana State University).

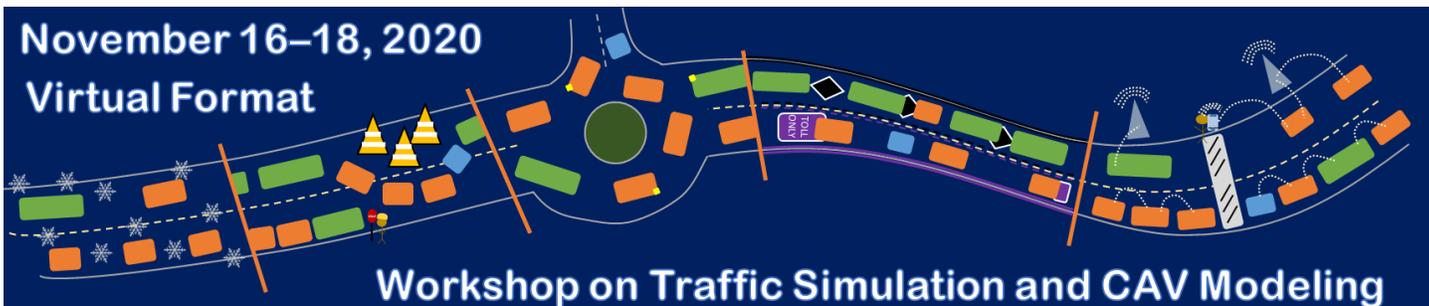
### TRB HOSTS WORKSHOP ON TRAFFIC SIMULATION AND CAV MODELING

On November 16<sup>th</sup>-18<sup>th</sup> 2020, TRB hosted the mid-year workshop on traffic simulation and connected and automated vehicle (CAV) modeling. This virtual workshop featured dozens of technical presentations, breakout sessions, and a joint meeting with the Institute of Transportation Engineers (ITE) simulation and capacity user group (SimCap). The workshop also included a formal meeting of ACP80, where members voted to receive and review the first-ever national Transportation Systems Simulation Manual (TSSM). ACP80 expects to develop and maintain the TSSM, which may hopefully stimulate continued research and development, similar to the Highway Capacity Manual (HCM). People who attended the workshop in November 2020 can access speaker biographies, visual aids, and session recordings at the web page shown below.

<https://trb.secure-platform.com/a/page/cavmodeling>

November 16–18, 2020

Virtual Format



## ACP80 CREATES SYNERGIES ACROSS SPECIALITY AREAS

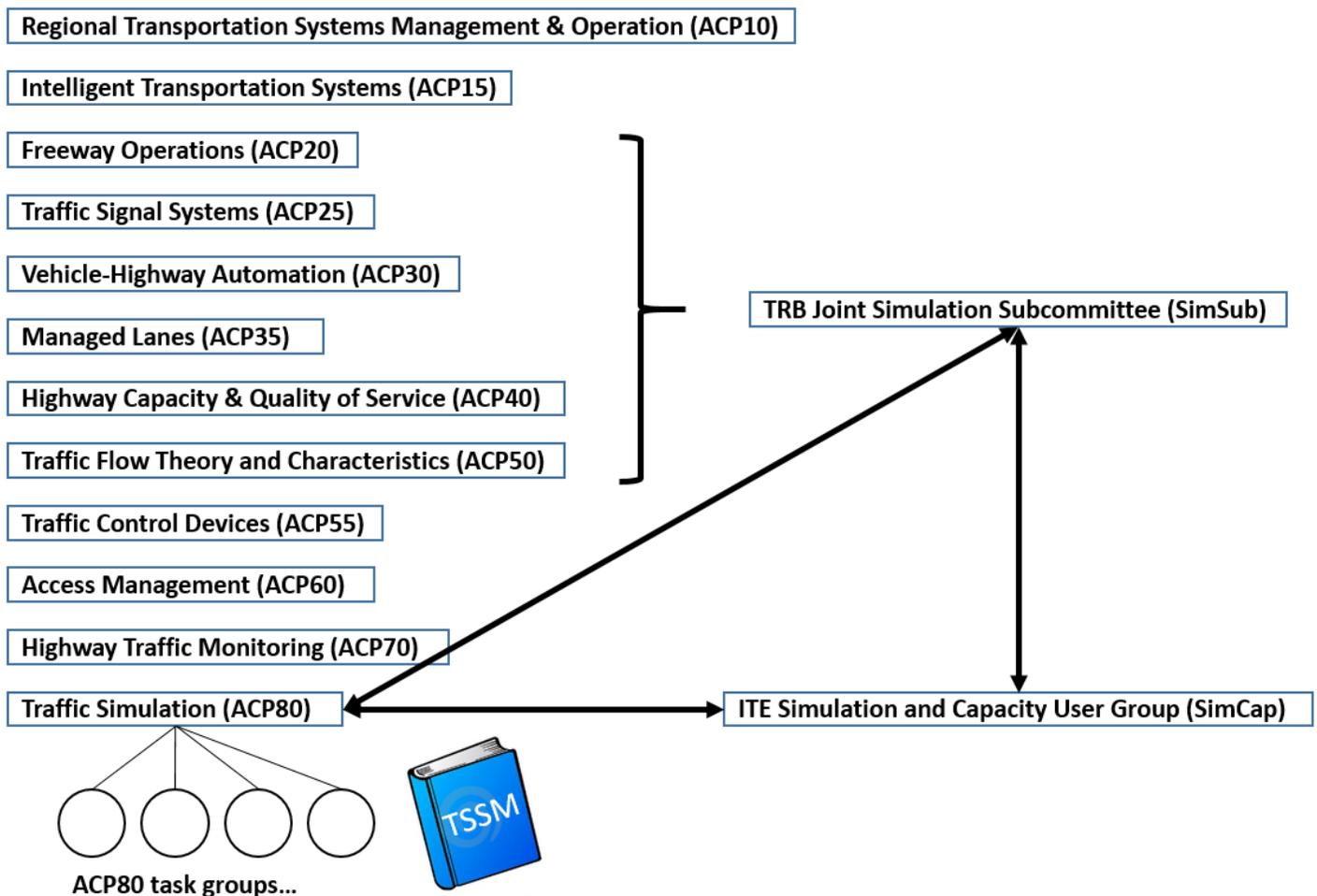
For several years now, SimSub has been building relationships with ITE SimCap. ACP80, SimSub, and SimCap are all motivated to review and improve the TSSM. ACP80 owes a debt of gratitude to the prior TRB Task Force on Traffic Simulation, whose 3-year effort helped to produce the first-edition TSSM. ACP80 will now attempt to review and approve the TSSM for publication. ACP80 will continue to interface with the SimSub parent committees, which are illustrated in the organizational chart below. Additional relevant websites and online resources are listed below.

<http://onlinepubs.trb.org/onlinepubs/dva/strategicalignment/TRBOrganizationChart.pdf> (new TRB committee structure)

<http://trbsimsub.uta.edu/> (SimSub home page)

<https://www.mytrb.org/OnlineDirectory/Committee/Details/6447> (ACP80 scope and membership)

<https://www.ite.org/technical-resources/councils/traffic-engineering/simulation-and-capacity-analysis-user-group-simcap/> (SimCap home page)



## ACP80 CONGRATULATES JOHN HALKIAS ON HIS RETIREMENT

John Halkias officially retired from the Federal Highway Administration on December 31<sup>st</sup>, 2020. Over the course of the last forty years, Dr. Halkias has worked as an educator, researcher, practitioner, and for the Federal Government. John has always considered it a responsibility to facilitate education and to advance the practice of Traffic Analysis for improved transportation decision-making. Soon after he started with FHWA in 2000, John initiated FHWA's Traffic Analysis Tools Toolbox as well as the internal FHWA Traffic Analysis Tools Team. John led and has been actively involved in the initiation of many major FHWA Operations programs areas, including the Integrated Corridor Management (ICM) and Active Transportation and Demand Management (ATDM) programs. John has been an integral member of numerous major research initiatives, including the Next Generation Simulation (NGSIM) program, which developed detailed vehicle trajectory datasets to allow better validation of traffic simulation algorithms, as well as the Connected Vehicle (CV) Pilots Program. In conjunction with managing the development of guidance documents for practitioners on how to collect, manage, evaluate, and utilize the multi-dimensional data set "Reliability Space" as tool inputs, John also initiated projects to provide guidance to the practitioners on modern "Big Data" techniques for data quality checks, data visualizations, data analysis techniques, and appropriate experimental design. Enthusiasts of traffic analysis, modeling, and simulation will remember John's leadership, and will benefit from his accomplishments for many years to come.



John Halkias (middle) receives the Traffic Simulation Lifetime Achievement Award from Mohammed Hadi (left) and Kaan Ozbay (right), at the TRB Annual Meeting on January 8<sup>th</sup>, 2018.

## MIRCHANDANI PRESENTS HISTORY OF TRAFFIC MODELING WORKSHOPS

On November 16<sup>th</sup> 2020, Pitu Mirchandani (Arizona State University) presented on the “History of Traffic Modeling Workshops”. Some excerpts from Pitu’s presentation are given below.

### CHRONOLOGY 1979-2020

- Although there have been traffic modeling workshops possibly for 75 years through the times of Greenshields, Litgthill & Whitham, Wardrop, and others, this strain of workshops can be traced to the Engineering Foundation sponsored workshops starting 1979.
- In 2008, we had the last workshop, the 14<sup>th</sup> workshop, at Graz, Austria organized by Fallendorf and Mirchandani.
- This 2020 workshop may be referred to as the 15<sup>th</sup> workshop, or the First Virtual Traffic Modeling Workshop.

First workshop 1979: Asilomar Conference Grounds, Pacific Grove, CA.

UTCS, SCOOT, and SCATS were presented.

Workshops 2 through 4, 1981-1987: New England College, Henniker, New Hampshire.

Most papers were on traffic controls, with many from electrical engineering faculty.

Workshop 5, 1989: Santa Barbara, California.

Most papers were on traffic controls, with many “new” researchers and new ideas (1) techniques and technology; (2) developments in operating signal systems; (3) integrated freeway arterial corridors; (4) traffic simulation and optimization models; and (5) route information and guidance systems. TRB started playing a larger role.

Workshops 6 through 10, 1991-1999: Various locations in Florida.

These workshops started looking at new ITS technologies and the impacts to traffic management and supporting traffic modeling. Dynamic Traffic Assignment Simulation Models were receiving attention. FHWA starts sponsoring these workshops. ITS technology impacts played a big role from sensors, computation, traffic control, and wide area traffic management.

Workshops 11 and 13, 2001 and 2005: Tucson, Arizona; and Sedona, Arizona.

Both these workshops expanded the scope of traffic modeling to even development of software. Simulation modeling started taking a lot of attention.

Workshops 12 and 14, 2003 and 2008: Spain and Austria.

Both these workshops had major foci on dynamic traffic assignment, wide area control, and development of simulation models that include driver behaviors.