
**Transportation Research Board Committee AHB 40
Committee on Highway Capacity and Quality of Service
MEETING AGENDA**

**Saturday, June 17, 2017 8:00 AM–12:00 Noon
Minnesota Room**

Chair: Tom Creasey, Tom.Creasey@stantec.com
Secretary: Janice Daniel, daniel@njit.edu
Website: <https://sites.google.com/site/ahb40hcqs/home>

1. Opening Session
 - A) Circulate Attendance Sign-Up Sheet and Membership Roster
 - B) Roundtable Introductions

Attendance

Committee members (19/25, quorum present): Tom Creasey (Chair), Janice Daniel (Secretary), Behzad Aghdashi, Brian Dunn, Marcus Januario, Jessie Jones, Christopher Kinzel, William Knowles, Alexandra Kondyli, Kerstin Lemke, Richard Margiotta, Seckin Ozkul, Paul Ryus, Bastian Schroeder, Tyrone Scorsone, Brian Smalkoski, James Sturrock, Peter Terry, Vishal Khanapure, Xiaoyue Cathy Liu.

Past members present: Lily Elefteriadou, Bob Bryson, Barbara Ostrom, Lee Rodegerdts, Bill Sampson, Yinhai Wang.

2. Consent Agenda

These items will be approved by the Committee by unanimous consent. Any member of the committee may request that an item be removed from the consent agenda and treated as an action item.

- A) Minutes from 2017 Annual Meeting in Washington, D.C.(Tom Creasey)

A motion was made to approve the minutes from the January Annual meeting. The motion was made by Janice Daniel, with the second by Brian Smalkoski. The motion was approved.
- B) HCM Interpretations. The Committee endorses the clarifications and interpretations to the HCM 6th Edition proposed by the Interpretations/User Liaison Subcommittee posted on the committee website - **Tyrone Scorsone**

There was no further discussion.

3. Report on status of NCHRP 15-57, *Highway Capacity Manual Methodologies for Corridors Involving Freeways and Surface Streets* - **Lily Elefteriadou**

Lily presented the progress on the NCHRP 15-57 project. The project is approaching the time when Phase I of the project will be completed and an Interim Report to be prepared. She will check with Ray Derr to determine whether the Interim Report can be distributed beyond the panel. Panel members present included Pete Terry and Marcus Januario. The research team includes: Lily Elefteriadou as the PI, Rich Margiotta (Cambridge Systematics), Vassilios Alexiadis (Cambridge Systematics), Bill Sampson (University of Florida), Alexander Skabardonis (Consultant), Fabio Sasahara (Ph.D Student, University of Florida). The objective of the project is to deal with spillback from urban streets to freeways and from freeways to urban streets and to provide a methodology that can evaluate both types of facilities. Two upcoming tasks from the project include Task 3, Draft Methods, and Task 4, Data Collection. At the January meeting, the presentation will focus on the Literature Review and the Performance Measures. The Interim Report is expected to be completed in the next few months. In the Draft Methods they will be looking at developing capacity checks to identify when spillback is present based on the queue length and available storage. The approach will use a lane-by-lane analysis as spillback from the freeway to the urban street usually occurs in the rightmost lane. To address spillback, a lane-by-lane analysis is needed.

As for queue spillback into freeways, four different spillback analysis is being developed based on the length of the queue, whether the spillback occurs only on the auxiliary lane, the right-most lane and then the middle lane. Capacity and speed are being determined for each lane. In the case of queue spillback into urban streets, they are looking at where spillback impacts the interchange. The capacity and discharge at the on-ramp needs to be estimated using field data. A methodology similar to interchanges will be used where the upstream effective green time is adjusted during periods of spillback.

For Task 4, Data Collection, a combination of field data from traffic management centers and simulation will be used. Data will be collected from a few sites. Critical parameters such as discharge from the on-ramp to the freeway will be calibrated. Simulation will then be performed of these calibrated corridors to generate data for model development. Lily made a request for data from freeway corridors with regular spillback. This will enable the research team to have a diversity of data. The corridor data needed included travel time and volume data. Video data where you can see upstream where queues are developing on the freeway is needed. In addition, the video data should allow you to gather flows and speed on a lane-by-lane basis.

Discussion:

Two questions were raised by Tom Creasey on whether the methodology would allow for the evaluation of ramp metering and where will this new methodology go in the HCM. The response was that they were not looking specifically for a ramp metering site, but they were not avoiding it either. If they had information on a ramp metering site they

would take advantage of it. How the methodology fits within the existing HCM would be up to the Committee. They are providing hooks within the methodology that would allow users to connect to the existing TRB methodology. The methodology being developed would only be used if there is spillback. Tom reminded us of the importance of Committee members and past Committee members be on research panels to ensure that the methodologies being developed will include HCM procedures.

Will you use any probe data to validate the overall travel time? Yes, we will do this at the end for those sites where we have travel time data. At the end, the calibration, validation process will look at big picture rather than small components.

It seems like one of the outputs of this project would be also the validation of the interchange ramp terminals method. We may collect some data, but it may not be for the entire interchanges. The Research Team can provide data to the subcommittee if validation is not an output of the research.

4. Transportation Research Board and Other Reports

- A) TRB Staff Report – **Rich Cunard (not available)**
- B) NCHRP/TCRP Staff Report - **Ray Derr (not available)**
- C) Federal Highway Administration Report – **Jim Sturrock/Chung Tran**

Current projects include the release of Traffic Analysis Toolbox Volume 3 by the end of this year. We have several guides in the process of developing.

- Just published a guide on data use and scoping. It is on the FHWA Traffic Analysis Toolbox website.
- Guide for dealing with empirical evaluations of post projects. How do you set up the experiment and run to experiment to determine that the project meets expectations?
- Completed five ATDM test beds. The datasets for this will be available by the end of the year. Any software developed with this project will also be posted.
- Two reliability projects are being developed. One is a high-level decision maker's guide to reliability and one is a practitioner's guide to reliability data. The practitioner's guide describes how to use and apply the data.
- We have three deployment test sites for connected vehicles. One is in New York City, Wyoming, and Tampa. Also working on a Connected Vehicle/Autonomous vehicle analysis modeling framework. The framework will address both strategic and tactical approaches.
- Upcoming projects:
 - Development of a guide to evaluate performance objectives.
 - Is calibrating current conditions reflective of the proposed conditions if you are making major changes to your existing network?
- Upcoming Workshop:
 - We are producing some workshops for the data scoping guide and the reliability guides to be developed.

- For the Traffic Analysis Toolbox we are looking to develop five Khan Academy type reviews to provide online type training.

D) Institute of Transportation Engineers Report – **Bill Sampson**

From November 2016 to March 2017 there were eight webinars. We had about 350 sites at the 8 webinars so about 1000 people or more. ITE is a great partner for disseminating information. McTrans has done several workshops on the 6th Edition. ITE is the number one partner for dissemination information.

If you are not a member, you should re-engage with ITE as a member. It is a great way to disseminate what can be done with the HCM. If you are a friend of the Committee, you can also respond to these emails from ITE members on questions about the HCM.

5. Inter-Committee Coordination

The Committee has talked about the importance of relationships with the other Committees especially those committees within our research area. Tom stressed our need to develop stronger relationships with these committees. To begin this process, we need to identify HCQSC friends or members associated with these related Committees.

a. Freeway Operations (AHB20)

Yinhai has been the liaison with the Freeway Operations. However, after 9 years as a member he will be rotating off our committee. The Committee has worked with the Freeway Operations group in the past and needs to continue to be involved in their meetings.

Alexandra: We visited with them and presented on the Freeway Systems methodology. We are doing a joint research problem statement with them. We talked about doing a joint workshop with them.

Tom: Does freeway ops know about Lily's research? I would hope that they are aware and using the freeway facilities method.

Lily: She was not sure, but open to make presentations or workshop on the methodology to this group.

- b. Traffic Signal Systems Committee (AHB25). No one involved but will need to determine wither Bill Cisco is associated with this Committee.
- c. Managed Lanes (AHB35)- Cathy Liu is involved with the Managed Lanes Committee, associated with the Research Subcommittee.

d. Traffic Flow Theory (AHB45)

Jim Sturrock is a member and provided a report on this Committee. The Traffic Flow Theory Committee had their midyear meeting July 24th, in conjunction with the International Symposium on Transportation and Traffic Theory. There is a new subcommittee on Connected and Autonomous vehicles. That subcommittee is co-sponsoring the Traffic and Granular Flow conference to be held in Washington, D.C. in July 19-22, 2017. Has a call for papers on MyTRB.

e. Transit Capacity and Quality of Service Committee (APO15) – Paul Ryus, Cathy Liu

Committee is focused on getting its research program for the 4th edition funded. Tom stated that we should begin thinking about whether the urban streets bike/ped method is being used to evaluate the trade-offs between bike/ped and transit. How well does the transit and bike/ped methodologies work for us? What do we need to do to address any criticism we have received? What is the next step for us?

Paul Ryus stated that the Transit Capacity manual is using the same procedure as the HCM. There is interest in being able to determine person-delay. There is more that the HCM can do. This is one area where we focus on using the existing methodology to get person-delay out of the procedure.

f. Performance Measure Committee (ABC30) – Doug McLeod

This report was made by Rich Margiotta. There big concern on how the federal requirements will affect State MPO. There are lots of unsettled issues and not clear how things will work.

g. Committee on Roundabouts (ANB75) – Lee Rodegerdts

The Fifth International Conference on Roundabouts was last month in Green Bay, Wisconsin. There were a number of sessions related to the HCM including a few critiquing the new HCM method. All of the conference presentations are archived on the TeachAmerica.Com website including the slides and audio from the presentation.

Tom reminded us that we needed to make sure people realize that we have a research-driven, peer-reviewed, validated method in the HCM. Some may think that the methodology is based on simulation. We need to make sure that people understand this distinction.

h. Task Force and Joint Subcommittee Coordination – Alex Skabardonis

- i. Autonomous/Connected Vehicles Task Force – No report provided.
- ii. Joint Subcommittee on Simulation (AHB45(1)) - Jim Sturrock

Jim Sturrock is a member. Previously discussed the activities as related to the traffic flow theory.

- iii. Joint Subcommittee on Active Traffic Management – Primary committee is freeway operations with several operations/management committees participating.

Lee: We should add the Joint Committee on Intersections. The parent committee is the Geometrics Committee. They have been active on the Alternative Intersections. This is a good one for us to be involved. Brandon Nevers has been co-chair on this and can be a temporary liaison.

Tyrone: Have we had anyone involved with the Bike/Ped Standing Committee. We have not had one.

Tom: We need to be careful not to spread ourselves too thin with our outreach, but we do need to have some connection to these groups. We can add them to the list to determine how we can continue to connect with this group. We can also check with Peyton on his connection with this group.

Jim: Bastian and I are both members of the Task force on system simulation. The primary committee is Freeway Operations.

6. HCM 6th Edition Implementation and Outreach
 - A. Did You Knows
 - B. Social Media
 - C. Others

For the “Did You Knows”, it is important to have a master list and then to strategically distribute them. We want a controlled release. The subcommittee chairs are to provide 3 to 5 DYKs. Mike Armstrong will compile the list. Bill Sampson indicated that the use of DYKs was very effective for us on McTrans website. It created conversation. The DYKs should include a reference to a point in the Manual. It should be categorized by method. A comment was made that it does not necessarily have to include the reference as we are working with a limited number of characters that can be used. However, we can refer users to our social media accounts, such as LinkedIn, for a more detailed reference. The reference could also be Volume 4 of the HCM, especially as there is a low number of manuals sold. The reference could also be shown as a snippet of the manual right there in the DYK. You would have to get TRB to agree to it. Bill Sampson asked whether we would give opportunity for those receiving the DYK to ask a question. This would be

another way to engage the users. Tom responded that we have the discussion forum in Volume 4. The link to volume 4 should be provided.

7. Future of the HCQSC Motions and Action Items

Much has been said about this and we will be having further discussions.

8. January 2018 Meeting Workshops

There was some discussion on thoughts regarding workshops for January. Tom made the distinction between TRB workshops and then Committee workshops. Some ideas discussed included workshops on the following:

- Joint workshop with Freeway Operations
- Two lane highways methodology
- Unsignalized Procedures
- Battle of the Engines
- Big Data Idea
- International Researchers
- Automated Vehicles

Erik Ruehr sent an email with some ideas regarding a conference session on connected vehicles. This may be a session that is co-sponsored with others. Bryan Smalkoski also suggested a conference session on various pedestrian and bicycle methodologies. There was some discussion about the dates when TRB workshops and conference sessions needed to be identified.

9. Connected/Autonomous Vehicles and the HCM – Discussion Toward an Action Plan – Brian Dunn, Alex Skabardonis

Brian made the presentation on Connected/Autonomous Vehicles and the HCM. This interest in the topic started a few years ago. The presentation was made from the point-of-view of the needs for the planning community. The intent is to be able to be in a position to provide planning advice. The limited budgets of State DOTs requires they have guidance on investments should be made regarding CAVs. State DOTs are hearing CAVs will not have any safety problems and no capacity issues. They are interested to hear what should they be doing to prepare for this. There is a pooled fund study through the state's CAV steering team. The intention is to identify HCM capacity adjustments for Connected and Autonomous Vehicles. As we are addressing the planning needs, we are not looking for an exact number, in terms of capacity, but a range that can be used. The process would be a simulated environment. We will determine how aggressive we will let these vehicles drive.

The tasks include:

- Test CVAV and non-CVAV INTERACTION

- Test various parameters
- Test different facilities

Concept for the PPEAG table

- Urban freeway Capacity adjustments factors as a function of CVAV penetration and levels of aggression.
- Setting up the pooled fund. Texas, Maryland, Arkansas. Florida and Ohio may join the fund.

Looking for the committee a technical advisory group.

- Lit review
- Identify scenarios
- Model framework Testing and Reporting
- Look up tables
- Final report and PPEAG

Discussion;

Dan: The Department of Energy hosted a simulation where MPOs are putting in acceleration, deceleration, headways related to CAVs into their forecast models. Seattle is one of those MPOs testing this and looking to determine the type of impact expected from CAVs.

Bob Bryson: Are you looking at the conversion of the fleet and how long will it take? Will it be a factor and will be by facility?

Bryan: Alex has a more detailed problem statement. They will go to the conference in San Francisco. After the conference we will reconvene.

Chris: Most of the discussion I've heard is about how CAVs will impact capacity. Ultimately, we can dictate the algorithm at intersections. We are in the best position to dictate decisions regarding infrastructure and algorithm. We should be thinking about the best control strategies. We should be paying attention to the research going on and advocate for that research. We should be proactive on how we will affect the design of CAV.

Tom: On the analytical side, there will be the wild west on this topic. We will have an opportunity to lead on the analytical level, at the microscopic level.

Chris: If we don't lead, someone will.

Seckin: We need to realize that CVs and AVs are really not the same. CVs are already here. Market penetration is different for each of these.

Tom: Do we need a workshop to educate ourselves on what's a connected/autonomous vehicle? Where are those opportunities? We need to educate ourselves a little better.

How can we work within this? CVAV in the HCM and make it a workshop. This might be a good topic to do on a Sunday. This may be a good idea.

Jim Sturrock: Minneapolis is doing a pooled fund on this. FHWA has a grant to do scenario planning for the I-94 in Minneapolis.

Paul: We need to go beyond the technical capability and look also at the policy issues.

Lee: The notion that you have to solve the problem all at once is not reasonable. May need to look at one mode at a time.

Bill. Implementation issues such as legal, security will be the latest. We may not want to lead this because the people leading are cutting a path that may be hard. My suggestion is we come behind those leading the path and cherry pick where opportunities exists.

Kersten: There is a draft research problem statement and there will be these sessions in San Francisco. Maybe the discussion in January may be a little late.

10. Group Reports

A) Paper Review and Best Paper Award – **Cathy Liu**

Recap of the 2017 paper review process. We received 72 papers and eventually we gave 45 presentations. We accepted 14 papers for publication. When we receive papers for August, this is the opportunity to invite authors to subcommittee meetings.

As we go through this paper review progress, we should use this as an opportunity to reach out to those doing interesting research related to our subcommittee and invite them to speak at our subcommittee meetings.

Lee: We may also want to catch papers that may go to other Committees.

Tom: The call for papers should be strategic to catch those that fill research gaps or applications of the HCM. Strategically call for papers that reopens lines to users.

Marcus: We can also add research gaps to TRB webpage.

Jessie: I can see two tracks, one focused on research filling the gaps and one on implementation. Since we are talking about applications or case studies we may want to have a call for case studies. Jessie will communicate with Cathy and determine how best to achieve these goals.

B) Roster and Website - **Janice Daniel**

a. Web site

The Kittleson website has continued to provide us support while hosting the Committee's website. We may be migrating to the google website. We need another training session on the website to help new subcommittee chairs. There is also a need for a one-page information sheet for new subcommittee chairs.

b. Social media

A motion was made transitioning the communications task force to a subcommittee.

Motion 2017-4: The communications task force be transitioned from a task force to a subcommittee of the Highway Capacity and Quality of Service Committee.

The motion made by Janice Daniel. Second by Seckin O. All in favor. No opposition. No abstentions. Motion carries unanimously.

Discussion:

What would be the charge of the committee? Is it identical to the charge of the taskforce?

We do not have a charge on paper, but it involves the use of social media, the implementation of "Did you know". We should all prepare a charge for each of our subcommittees. This subcommittee's charge is communications to our users, members and professional contacts. To generate more interest in the committee and committee's work. To let users know that we are here. Volume 4 can continue to be used to show erratas or answer questions.

Tom: I would like to see a retooling of our website for internal use. Some statement that would reflect the subcommittee charge is important.

Pete: We need to define what this Committee does and what User Liaison does.

- C) Group 2: Uninterrupted Flow Group Report – **Bastian Schroeder**
Freeways/Multilane Highways, Two-Lane Highways, Active Traffic Management

Discussion occurred within the combined group meeting.

- D) Group 3: Interrupted Flow – **Christopher Kinzel**
Urban Streets, Signalized Intersections, Unsignalized Intersections, Interchange Ramp Terminals

Discussion on gaps and the development of an organized work plan as we go forward.

- E) Group 4: Multimodal & Preliminary Engineering – **Paul Ryus**
Pedestrians/Bicycles, Planning & Preliminary Engineering Applications,
Performance Measures, Research, User Liaison, Traffic Simulation and
Applications, Connected/Autonomous Vehicles

We have covered much of what was covered at the Group 4 meeting. Paul will prefer not to have a group 4 meeting which is typically scheduled on Sunday night at TRB but rather to have a telephone call.

- Report on USDOT Final Rule on National Performance Management Measures – **Rich Margiotta**, Performance Measures Subcommittee Chair

We finally have a rule on Performance Measures. Measures are based on travel time and non-travel time data. Should be based on field measured data, rather than through simulation. May want to develop an informational brief on how the HCM can be used to develop these performance measures. This may be the first in a series of informational briefs.

- HCM Case Studies Repository

User Liaison subcommittee will pursue the case studies. We will create a template. Dan will start with the development of the framework and provide an approach to submit it.

It would be great a call for case studies between now and January. It would be good to have some in the pipeline to see how these should be developed.

- HCM in the Cloud

A task force was created with Barbara Ostrom leading the group. The Task Force included Paul Ryus, Vishal Khanapure, Alexandra Kondyli, Jim Sturrock.

We want to be able to provide input to TRB. We would like to hear more in January where we are.

11. Upcoming Meeting Plans

- A) Year 2018 TRB Annual Meeting – **Rich Cunard**
- B) Year 2018 Summer Meeting – Austin, TX (Bill Knowles)

For the 2018 Midyear meeting, we know it will be hot, so bring cool clothing.
Will be receiving a proposal for 2019 in January.

C) Year 2019 Summer Meeting - open

A question was raised about the options for a joint meeting with others in 2019.
Tom responded that we should be thinking about another committee we can invite
to participate with us. Access Management and Performance Measures were
raised as possible Committees for co-sponsoring the 2019 meeting.

D) Next International Symposium?

12. Closing Session

- A) Final Circulation of Sign-Up Sheet and Membership Roster
- B) International Symposium Closing
- C) Adjourn

AHB40 Member List

	Member First	Member Last	Email	Role	Company Name
1	Tom	Creasey	Tom.Creasey@stantec.com	Chair	Stantec Consulting, Inc.
2	Janice	Daniel	daniel@NJIT.EDU	Secretary	New Jersey Institute of Technology
3	Behzad	Aghdashi	saghdas@ncsu.edu	Member	North Carolina State University
4	Brian	Dunn	Brian.G.Dunn@odot.state.or.us	Member	Oregon Department of Transportation
5	John	Engle	englej1@michigan.gov	Member	Michigan Department of Transportation
6	Marcus	Januario	marcusja@bolton-menk.com	Member	Bolton & Menk, Inc
7	Jessie	Jones	jessie.jones@ahtd.ar.gov	Member	Arkansas State Highway & Transportation Department
8	Christopher	Kinzel	Christopher.Kinzel@hdrinc.com	Member	HDR
9	William	Knowles	bill.knowles@txdot.gov	Member	Texas Department of Transportation
10	Alexandra	Kondyli	akondyli@ku.edu	Member	University of Kansas
11	Kerstin	Lemke	lemke@bast.de	Member	Federal Highway Research Institute (BAST)
12	Richard	Margiotta	rmargiotta@camsys.com	Member	Cambridge Systematics, Inc.
13	Seckin	Ozkul	sozkul@cutr.usf.edu	Member	University of South Florida
14	Paul	Ryus	pryus@kittelson.com	Member	Kittelson & Associates, Inc. (KAI)
15	Bastian	Schroeder	bschroeder@kittelson.com	Member	Kittelson & Associates, Inc. (KAI)
16	Tyrone	Scorsone	tscorsone@kittelson.com	Member	Kittelson & Associates, Inc. (KAI)
17	Alexander	Skabardonis	skabardonis@ce.berkeley.edu	Member	University of California, Berkeley
18	Brian	Smalkoski	brian.smalkoski@kimley-horn.com	Member	Kimley-Horn and Associates, Inc.
19	James	Sturrock	james.sturrock@dot.gov	Member	Federal Highway Administration (FHWA)
20	Peter	Terry	peter.terry@bencivil.com	Member	Benchmark Civil Engineering Services, Inc.
21	Chung	Tran	chung.tran@dot.gov	Member	Federal Highway Administration (FHWA)
22	Yinhai	Wang	yinhai@uw.edu	Member	University of Washington
23	David	Gerstle	gerstle_david@bah.com	Young Member	Booz Allen Hamilton, Inc.
24	Vishal	Khanapure	kvishal@ufl.edu	Young Member	McTrans Center
25	Xiaoyue Cathy	Liu	cathy.liu@utah.edu	Young Member	University of Utah

	Roger	Roess	rroess@nyu.edu	Emeritus Member	Polytechnic University of New York
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