Transportation Research Board Annual Meeting

DRAFT MINUTES

Committee on Traffic Flow Theory and Characteristics (AHB45)
Tuesday, January 24, 2012, 1:30–5:30pm

1. Welcome and Call to Order R. Bertini
Chairman Robert Bertini called the committee to order at 1:35 p.m.

2. Introductions – Members & Friends All Attendees
Committee members and friends introduced themselves. Chairman Bertini reminded everyone that there is no difference between friends of the committee and members in terms of participation. All can and should participate.

Congratulations to Nathan Gartner who is the recipient of Robert Herman Prize.

3. Review and Approval of Minutes R. Bertini
The meeting minutes for the Committee Meetings of January 25, 2011 and July 17, 2011 were approved with no comments.

The chairman thanked Marguerite Zarrillo and Meead Saberi for drafting the minutes. Minutes are available on the committee website (http://www.tft.pdx.edu/private/privdocs.htm).
4. Committee Membership Update  

R. Bertini

The total membership stands at 35 (= 25 + 5 International + 4 Young + 1 Emeritus). The chairman reported that international members are strongly represented in the committee (37%), and gender/racial diversity has been improved (~43%). However, the chairman suggested that the TFT committee is mostly an academic committee, and there is urgent need to better represent government agencies such as state DOT and MPO. Only 11% are non-academic members, none of which represent state DOT or MPO. The chairman reminded that TRB allows 5 additional members from public agencies.

Koohong Chung was identified as a good candidate for membership representing a state DOT (Caltrans).

R. Sheehan suggested creating a subcommittee to promote membership diversity (including members from public agencies.) H. Mahmassani will follow up with R. Sheehan to identify good candidates. The paper review committee will also help identify good candidates.

Mohammed Hadi has been appointed as Committee Research Coordinator.

Steve Mattingly is Communications Coordinator.

5. Greenshields Prize  

N. Gartner

N. Gartner recapped that the inaugural Greenshields Prize was awarded to Ji-Won Kim and Hani Mahmassani for the work in TRB Paper No. 11-4034/TRR No. 2249, pp. 62-77 (“Correlated Parameters in Driving Behavior Models: Car-Following Example and Implications For Traffic Microsimulation”). Congratulations!

The decision for the second prize will be made during the midyear meeting and announced in the next TRB meeting. N. Gartner mentioned that papers submitted for both presentation and publication are eligible for the prize.
6. Chair’s Report    R. Bertini

The chairman reminded that the spotlight theme for TRB 2012 is “Putting Innovation and People to Work.

The chairman reported that the reviewer pool consists of 440 members. The pool needs to be analyzed and updated, including involving more practitioners from state DOTs and MPOs.

The chairman reported that the first meeting of Young Members Council (YMC) was held on Sunday (January 22, 2012). Pingbo Tang (Western Michigan University) and Nikola Ivanov (University of Maryland) represent the Operations and Preservation Group. Four young members of the TFT committee are encouraged to participate.

A new Circular on “75 Years of the Fundamental Diagram for Traffic Flow Theory” from the Greenshields Symposium has been published and is available online.
7. TRB Report  

R. Cunard reported that more papers were received this year (~4,300 papers versus ~3,900 papers last year). There are 4,372 presentations distributed over 550 sessions and 100 workshops. 60 sessions and workshops address the spotlight theme, “Putting Innovation and People to Work”. More papers were placed in poster sessions this year (60% versus 58% last year). To accommodate this, the poster sessions were shortened to 1 hour and 45 minutes and staggered. M. Hadi commented that a poster session had time conflict (overlap) with the Simulation Subcommittee meeting. The chairman indicated that some conflict would be inevitable.

Thanks to M. Hadi, Committee Research Coordinators were added.

R. Cunard announced that the committee can ask for up to 5 additional committee members and can have Vice Chair.

Annual Meeting Online is available and includes compendium of papers for download. The papers can be accessed using the confirmation number on the badge. H. van Lint mentioned that there was an issue with the wireless connection in the hotel and had trouble accessing the papers. B. Coifman mentioned that it was nice to be able to download papers in advance and that it would be nice to hold the Greenshields symposium every five years given the success. L. Leclercq suggested that Keyword search would be a nice feature to add.

R. Cunard reported that 1/3 of attendees are new attendees.

The DC Convention Center is being investigated as the new venue, possibly by 2015.

New committee web pages are being set up by TRB – please provide comments if the information is useful. Steve Mattingly agreed to provide support.

For TR News (a TRB bi-monthly publication), TRB is looking for topic ideas.
R. Cunard gave TRR Update. 950 articles have been accepted for publication in TRR, which is the record number. A survey was conducted to improve TRR, and the results will come out soon. C. Buisson suggested accepting submissions for publication in TRR with the single deadline as exists currently. A. Skabardonis reminded that the paper submission site is open all year around, although peer reviews are conducted after the August 1st deadline. H. Mahmassani objected separating the review process for TRR from the process for the Annual Meeting because that will diminish a lot of character due to a variety of factors including competition with other journals. The committee voted to retain a single deadline. (See the meeting slides for other details.)

The next Annual Meeting will be held on January 13-17, 2013 before MLK Jr. Day and Inauguration.

The Marriott Wardman Tower will be converted to condos, and TRB is investigating feasibility of moving the Annual Meeting to the DC convention center.
8. FHWA Programs & Activities  

R. Sheehan’s full report is also available on the website. A summary of items is provided below.

1. Traffic Analysis Toolbox Series: The toolbox incorporates recent research.
2. HCM Chapter on Active Transportation and Demand Management (ATDM)
3. Update of Traffic Analysis Tools Workshop Material
4. Workshop on Foundations of Dynamic Traffic Assignment (DTA): This is open to everyone.
5. Traffic Analysis Pooled Fund Study: “Traffic Analysis Tools Consistency: Recommended Practice”
7. Travel and Emissions Impacts of Highway Operations Strategies
8. Guidebook on Utilization of Dynamic Traffic Assignment (DTA) Modeling: It is being developed in coordination with the Network Modeling Committee. A pricing component is missing.
9. Modeling and Forecasting of Toll Revenues
10. Effective Integration of Analysis Modeling and Simulation Tools
11. Analysis of Network and Non-network impact upon Driver Behavior to improve analysis, modeling, and simulation techniques and accuracy
12. Integrated Corridor Management: An evaluation (e.g., benefit cost analysis, institutional barriers, air quality, safety, etc.) project is in contract. There is need to better understand driver behaviors. A modeling and simulation guide is complete.
13. Active Transportation and Demand Management

The Chairman mentioned that the committee should be more engaged in research problem development.

9. TFTC Subcommittee Reports

- Joint Subcommittee on Traffic Simulation Models: List
- Research Problem Statements: Hadi
- Paper Review and Sessions: Bertini
- Greenshields Prize: Gartner
- Mid-Year Meeting: Hadi
- Committee Website: Bertini
- Strategic Planning: Bertini
- Committee Communications: Mattingly
- Classic Papers: Ahn/Laval/Geroliminis
- Historic Papers: Xuan
- Special Report on Traffic Flow Theory: Mahmassani
- NEW Teaching TFT: van Lint

The meeting took place on January 23, 2012 (Monday). There is a continued interest in Simulation Subcommittee. Anybody can participate as a member. The annual report is available on the TFT website. Suggestions/ideas for the newsletter and topics for the next year’s workshop are welcome and should be submitted to G. List. Early inputs will be appreciated.

A. Skabardonis commented that attendance to the Simulation Subcommittee meeting was lower due to concurrent poster sessions.

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9.2. Research Problem Statements  M. Hadi

M. Hadi suggested that research statements should be voted and approved by the committee. Volunteers are needed to support the subcommittee.
9.3. Paper Review

The chairman thanked the members, authors, and reviewers. The summary of the paper review results is provided in the TFT website. A surge in the number of papers submitted (177). Presentation only submissions have been particularly increasing. 5 podium sessions were allocated for the TFT committee, including one joint session with the Pedestrian committee. It was mentioned that 3-5 papers per person is a reasonable expectation for the committee.

It was suggested to put all poster sessions together to reduce conflict. R. Cunard responded that such allocations will be difficult in terms of logistics.

The chairman commented that the review response rate is decreasing. An advanced notice of either acceptance or decline would be appreciated. N. Geroliminis suggested that an automatic response scheme would be useful, though it won’t be easy in terms of software.

H. Mahmassani indicated that the reviewer pool contains old contact information and should be updated.

H. Mahmassani stated that presentation-only papers may be a big burden for reviewers, and it is not fair that those papers compete for podium sessions. He also raised a concern that presentation-only papers may bring down quality or impact factor because people tend to submit lower quality papers for presentation only. He suggested requiring submission for both presentation and publication.
J. Laval suggested a 2-tier system in which presentation-only papers are reviewed in a different process.

M. Zhang pointed out that requiring both will drive away good papers and supported that a 2-tier system coordinated by the subcommittee would be a good idea. Presentation-only papers should perhaps be poster presentation only.

N. Gartner reminded that the status of a paper (presentation only, etc.) is revealed to the reviewers.

B. Coifman commented that not necessarily lower quality papers are submitted to TRB for presentation only. There may be other reasons to send good papers to TRB. He supported poster presentations for presentation-only papers (except for few exceptional papers) and suggested assigning 2 reviewers per paper (with one back-up) to reduce the review load.

H. Mahmassani raised a concern about duplicative papers being submitted. They are difficult to monitor because they can be handled across multiple coordinators.

B. Coifman suggested that the chair or coordinators (in their discretion) can perhaps perform a preliminary review to filter out duplicative papers or papers outside the TFT scope.

J. Laval suggested conducting re-reviews after responses to comments are submitted. The chairman pointed out that the re-review process is already in place and depends on the coordinator.
9.4. Greenshields Prize  
N. Gartner
Discuss earlier.

9.5. Mid-Year Meetings  
R. Bertini
The 2010 mid-year meeting was held in Annecy, France.
The 2012 summer meeting will be held in Fort Lauderdale, FL.
A summer meeting in 2013 is proposed to take place at the 20th ISTTT in the Netherlands.
2014 TBD: Another Woods Hole type of symposium is anticipated.
2016 TBD: An international venue is anticipated. The committee is looking for volunteers.

M. Hadi gave a presentation on the upcoming mid-year meeting, which will be a joint meeting with AHB40 HCQS Committee.
Technical Program
- Tuesday (6/19) 8:30-12:00 PM: Predictive traffic flow methodologies for ATIM Workshop
- Tuesday (6/19) 1:00 PM-5:00 PM: TTF and Simulation meetings and Workshop on Research Needs: HCQS workshops (two concurrent).
- Wednesday (6/20) 8:00 AM-5:00 PM: Joint TTF/HCQS workshop discussions, Panel sessions (two) and technical presentations (most likely two concurrent sessions).
- Thursday 8:00 AM-5:00 PM: HCQS subcommittee meetings.
- Friday 8:00 AM-12:00 PM: Full HCQS committee meeting.

Other Activities
- Dinner and River Cruise
  http://www.youtube.com/watch?v=aXYaRPUa6n8
- Other activities and reception ??
- Lunch meeting of HCQS with ITE Gold Coast Chapter and the local chapter of WTS.

Call for Extended Abstracts
- Call for extended abstract issued
- Web site for submission set by TRB: http://precise.transportcentral.com/Public/UserLogin.aspx?FormID=3885B9AD5486D2EA0FB3982975EDDB68E&Redi
  end=1
- Few selected papers will be published in a special section of the ASCE Journal of Transportation Engineering.
- Full paper will be requested and reviewed after the meeting.

Abstract Submission and Review
- Submitting Categories
  - Empirical modeling to support Capacity Analysis
  - Alternative Tools (Simulation)
  - Active Management/Traffic Modeling
  - Performance Measurements
  - Others
- TRB needs from us
  - Date review starts: 9/16
  - Date review ends: 3/16
  - List of reviewers

Location and Hotel
- Fort Lauderdale Beach Hilton Resort
- Across the road from Fort Lauderdale Beach, one of the most attractive beaches in Florida.
- Restaurants and activities nearby.
- Few minutes from Las Olas Boulevard and Downtown Fort Lauderdale.
- 30 minutes from Palm Beach and 30 minutes from Miami downtown. About one hour from the Everglades National Park.

Hotel
9.7. TFT Historic Papers E. Xuan

E. Xuan gave an update on the subcommittee activities to identify TFT Historic Papers. The subcommittee identified 497 TRR papers sponsored by the TFT committee.

R. Bertini and L. Leclercq suggested selecting 4-5 significant/classic papers out of the list.

H. Mahmassani commented that citations on the (selected) papers can be found using Google Scholar. The TRB library committee may also be able to help.

A. Skabardonis also suggested tracking citations of older papers.

It was suggested that best papers from the Annual Meetings should be presented at the TFT webinar.

Strategic Planning
- Thanks to Marguerite Zarrillo and Avi Unnikrishnan
- Submitted draft Triennial Strategic Plan and awaiting comments
- Highlights
  - Primary Activities
  - Committee Membership and Management
  - SimSub
  - Traffic Flow Characteristics
  - Research Problem Statements
  - Communications and Outreach
- Think “products”
- Engage non-traditional partners/participants who can’t travel

9.9. Committee Communications  S. Mattingly

TSP Review Comments
- Specific to our committee
- Post Annual Meeting webinars are excellent
- Lacks organizational diversity—discuss steps to improve
- Focus more on actions to be taken
- General Operations Section comments
- Very positive trends (level of activity, interaction with other committees, use of social media, monthly meetings, alternative meeting formats, international engagement, development of handbooks)
- Need to update/expand research problem statements
- Consider impact of new technology or outside activity on mission
- Consider Best Young Member Paper Award
- “Keep up the good work!”

Committee Communications
- TFT Facebook Page: 242 “Likes”
- Student Interest Group: 36 members
http://iftsoig.sing.com/

Facebook Update
- Total number of persons who have liked the page so far: 242 (from more than 20 countries)
- Female: 19%, Male: 76%
- Most of the fans are in the range of 25-34 years old
- The top 5 countries where people have liked us from are: U.S., Greece, Netherlands, India, and the United Kingdom. The page has been viewed 50 times per day on average. Every content of the page (a posted item) reaches about 150 persons on average.

Nominations for the best young member paper award can be handled by the Greenshield’s award committee
9.10. Classic Papers  
S. Ahn, J. Laval & N. Geroliminis

All ISTTT papers were identified by Eric Gonzales and Vikash Gayah.

H. Mahmassani

TRB Circular on Network Committee Primer on DTA 2011 is published.

Traffic Flow Theory Monograph: The chapter for microscopic models is in need of revisions. The Simulation Subcommittee can lead this effort and include the methodological aspect of microsimulation. A. Skabardonis will help H. Mahmassani on this effort.

9.12. NEW Subcommittee on Teaching Traffic Flow Theory  
H. van Lint

The Subcommittee on Teaching Traffic Flow Theory is led by H. van Lint. The Subcommittee launched web-based survey, and H. van Lint presented the preliminary survey results. H. van Lint, E. Wilson, and C. Buisson gave presentations on their efforts to teach traffic flow theory.
H. van Lint gave a presentation on various experiments to explain traffic flow theory and control, which is available on the TFT Facebook.
Experiment B: ramp metering

Gain after just seven minutes = 1.5 hour of collective travel time

Now that is what you call a return of investment!

Explanation of the results

This is how we compare the two situations
- Consider the cumulative inflow $N_i(t)$ and the cumulative outflow $N_o(t)$
- The horizontal distance between the curves equals the travel time
- The surface between $N_i(t)$ and $N_o(t)$ = the sum of all these travel times, the total time spent (TTS)

The smaller TTS the better!

Explanation of the results

This is how we compare the two situations
- In experiment B we had exactly the same cumulative demand $N_i(t)$ but a different cumulative outflow $N_o(t)$. Again the surface between these depict total time spent (TTS).
- If we plot also $N_o(t)$ in the same graph, the surface between $N_i(t)$ and $N_o(t)$ obviously equals the difference in total time spent, that is: Performance = TTS - TTS

Explanation of the results

Cumulative outflow curve

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cum. inflow $N_i(t)$</td>
<td>0</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Cum. outflow $N_o(t)$</td>
<td>5</td>
<td>15</td>
<td>25</td>
<td>35</td>
<td>45</td>
</tr>
</tbody>
</table>

TT5 - TTSb = 89

Person minutes (1.5 person hours)

Which is equal to (depending on the average value of one person hour) a bottle of (pretty good) wine.

You even make it to Belgian national TV (live)!

Many thanks to Chris Tampere!

More advanced experiments

Can we also demonstrate that coordination is a GREAT IDEA ???

Possible scenarios:
- Red traffic control
- Red traffic control + ramp metering
- Adaptive traffic control + ramp metering

Goal: Maximize output
E. Wilson gave a report and presentation on the Royal Society Summer Science Exhibit. The website (http://invisible-referee.soton.ac.uk/) is also available on the TFT Facebook site.
C. Buisson gave a presentation on her effort to teach traffic flow theory.
10. **Webinars**

J. Laval gave an update on TFT Webinars. It was suggested that the webinars should be expanded for outreach to public agencies. H. Mahmassani commented that only simple facts can be communicated to the decision makers to maximize benefits. The TFT Committee can take a role in developing a simple, compelling tool for better technology transfer (e.g., capacity drop, phantom jam, marginal cost, value of responsiveness, grid lock, reliability, fallacy of averages, etc.).

D. Chen and M. Saberi are leading the effort to involve students. D. Chen gave a presentation on the TFT webinars.
**Introduction**

- Established in May 2010 by Dr. Jorge A. Laval.
- To share recent research & practice.
- 307 members from over 20 countries.
- Traffic flow webinar group
  - [http://www.trb.org/content/traffic-flow-webinars/index.aspx](http://www.trb.org/content/traffic-flow-webinars/index.aspx)
- Traffic flow webinar website
  - [http://www.webinars.traffic.com/](http://www.webinars.traffic.com/)

**How it works?**

- [http://banckle.com/](http://banckle.com/)

**Activities**

- Regular invited webinars
- TRB AHB 45 webinars
- 19th ISTTT webinars
- Traffic flow mid-year meeting live webinars

**How it works?**

**Audience:**
- Subscribe to the webinar group.
- Join the webinar through webinar link.
- Interact with the presenter. Have fun!

**Presenter:**
- Schedule a webinar.
- Prepare materials (slides or pdf file).
- Join the webinar.
- Present, interact with audience.
11. Liaison with other Committees

Network Modeling Committee: There is need to analyze transient state.

Freeway Operations Committee: driver behaviors, simulations; international meeting, opportunity to collaborate

12. International Liaison

International members and attendees
W. Daamen gave a presentation on NEARCTIS.
V. Punzo gave a presentation on MULTITUDE.
Benchmarking OD estimation and prediction approaches
- Develop a common framework for the benchmarking of OD estimation and prediction algorithms
- Matlab based script and interfaces to AIMSUN
- OD estimation algorithms
  - Non-linear Kalman filter extensions
  - LISOR, Simulative GIS, SPSSA variants ...
- Will be tested on common scenarios.

Planning and next steps
- 13 January 2012: experimental design finalized
- End January 2012: interfaces with AIMSUN operationalized in Aimsun
- February-May 2012: execution of simulation experiments
- May 2012: Meeting in London / preliminary results presented / issues resolved
- June 2012: simulation results available

Guidelines
- Subgroup to examine existing guidelines, compile roadmap, undertake gap analysis
- Validation by Questionnaire
- Stakeholder workshops – Government + Consultants
  - UK (Feb.) + DE (Feb.) + NL (March) + FR
- End-user outreach and education
  - Summer 2012 onwards
  - Countries where simulation is not so well understood/operated.

Questions?
- General + Summer School
  - Vincento Purino
    - vincento.purino@ec.europa.eu
- Surveys & Reviews
  - Wilma Daamen
    - W.Daamen@tudelft.nl
- Data sets
  - Hansen Panah
    - Hansen.Panah@kth.se
- Sensitivity analysis
  - Eligia Cluffo
    - eligia.cluffo@in-europe.eu

- Network Modelling
  - Jaume Barcelo
    - jaume.barcelo@upc.edu
- OD Estimation
  - Costis Antoniou
    - Costis.Antoniou@central.ntua.gr
- Guidelines + Mailing list
  - Mark Brackstone
    - Mark.brackstone@iomi.eu

www.multitude-project.eu
C. Buisson gave a presentation on the status of MOCoPo.
13. Announcements and Future Meetings

All Attendees

The TFTC Midyear Meeting will take place in Fort Lauderdale.
1\textsuperscript{st} European Symposium on Quantitative Methods in Transportation Systems (LATSIS) will take place on September 4-8, 2012. N. Geroliminis made an announcement related to the symposium.

The 2\textsuperscript{nd} International Conference on Evacuation Modeling and Management (ICEM) will be hosted by Northwestern University on August 13-15, 2012.

ISTTT20 will take place in 2013 in Noordwijk, the Netherlands.

14. **New Business**

The Chairman requested ideas to commemorate the 50\textsuperscript{th} anniversary of the TFTC committee. Some ideas included celebrating during the 2014 summer meeting, jointly celebrating with the 20\textsuperscript{th} anniversary of the ITS Committee, and commemorating seminal papers out of the committee.

D. Ni gave a presentation on identifying/leading future data collection activities, desirably in coordination with FHWA and USDOT. A directory of data will soon be available including field
data for connected vehicles, naturalistic driving data, Turner Fairbank data, and naturalistic data part of MULTITUDE.

For the 2013 Annual Meeting call for papers, there is possibility to coordinate with the ITS Committee. Papers will be due in the beginning of May. In terms of process, preference is to publish papers through TR-C (special issue) and presentation at TRB (not included in the proceedings).
H. van Lint gave a presentation on the simulation experiment at TU Delft.

15. Adjourn  All Attendees