

**SUBCOMMITTEE ON INTEGRATED TRANSPORTATION
AND LAND USE MODELLING
A1C02(2)**

**SUBCOMMITTEE ANNUAL MEETING
81st ANNUAL MEETING OF THE TRANSPORTATION RESEARCH BOARD
WEDNESDAY, JANUARY 16, 2002 7:30-9:30 P.M.
CAUCUS ROOM, HILTON WASHINGTON HOTEL**

MINUTES

The agenda for the meeting is provided in Attachment A.

1. Welcome. Co-chairs Eric Miller and Douglas Hunt welcomed attendees to the inaugural meeting of the Subcommittee. They briefly explained the mandate and organization of the Subcommittee (see Attachment B for details).

2. Introductions. Including the co-chairs, 19 people were in attendance, with explicit regrets from 7 others who could not attend the meeting for various reasons. Adding new attendees to the Subcommittee's mailing list, brings the list of Subcommittee friends/members to 34 (see Attachment C).

3. Review of 2002 Annual Meeting Activities. In response to a Call for Papers, 16 papers were received for review by the Subcommittee. Of these, 10 were accepted for publication, 6 of which are under consideration for publication. The 10 presentations were organized into two paper sessions: Session 197, Integrated Land Use - Transportation Modeling: Design and Application Issues (Monday, 1:30-3:15p.m.; Cabinet Room, Hilton), and Session 728, Integrated Land use - Transportation Modeling: Accessibility and Uncertainty Propagation Considerations (Thursday, 10:15a.m.-12:00p.m., Jefferson East, Hilton)

Both sessions were very well attended. The Monday afternoon session had well over 140 people (literally standing room only) throughout its duration, with at least 25-30 coming and going during the session, while an unknown number of others were turned away at the door by the crowd. The Thursday morning session had 50-60 people in the room (excluding speakers) throughout the session, which is surely very good for the last time slot in the conference.

4. Review of Subcommittee Terms of Reference. The Subcommittee's Terms of Reference (Scope) were circulated for discussion (Attachment B). These Terms had previously been circulated among the mailing list for comment, with none being received. No substantive recommendations for changing the Terms were generated at the meeting either.

5. Discussion of Subcommittee Activities. A very lively and extended discussion of possible activities for the Subcommittee to undertake over the coming year and beyond was occurred. Action items that emerged from this discussion are listed and briefly discussed below.

(a) Sunday Workshop at 2003 Annual Meeting. The Subcommittee felt that there was a clear need for a one-day "outreach" Sunday workshop at the 2003 Annual TRB Meeting. The overall objective of this workshop would be to inform MPO and State DOT planners/modelers about the current operational state of practice of integrated transportation - land use models. It is felt that a 2003 workshop would be very timely, given that many planning organizations are currently "gearing up" for new model development/redevelopment activities based on 2000 Census data, new travel surveys, etc. The opportunity to "de-mystify" integrated modeling for agencies and to provide a realistic assessment of current capabilities that they may wish to pursue further is one which we feel should not be missed.

Likely topics for the workshop include:

- rationale for use of integrated models in the planning process
- "simplified methods" (delphi; GIS accounting models; etc)
- data requirements and issues
- introduction to / primer on operational integrated models
- one or more "case studies" of operational use of integrated models in the U.S.

Doug Hunt, Bob Johnston, Kara Kockelman, Eric Miller and Paul Waddell all indicated interest in helping design the workshop and/or present at the Workshop. The co-chairs will lead the drafting of workshop contents as well as the administrative process of getting the workshop approved and scheduled by TRB.

(b) Invited Panel Session at the 2003 Annual Meeting. It is proposed to mount a panel discussion session at the 2003 Meeting in which four or five invited speakers would each introduce and discuss an operational land use - transportation planning modeling analysis method currently in use with the United States. Strengths, weaknesses, appropriate application contexts, etc. of each method would be discussed, both by the individual panelists and collectively within the panel. Of particular interest would be presentation of results from use of the model, including, where applicable and possible, model validation results Frank Southworth was nominated to lead the organization of this panel, with assistance from Rick Donnelly.

Rick also indicated that there might be opportunity to partner with A1C07 Committee on Transportation Planning Applications in a session in 2003. Given the focus of this proposed session on operational applications of integrated models, this might be a very attractive session to seek partnership with A1C07 for this session.

(c) 2003 Annual Meeting Paper Calls. Three Calls for Papers were identified for the 2003 Meeting. In each case, the co-chairs will take the lead in developing the detailed Paper Calls. A brief description of the topic/rationale for each call is presented below.

i) *Modeling Real Estate Development.* While demand-side models, particularly for housing, are relatively well developed, models of building stock supply are far less well developed. The Subcommittee feels that a Call for Papers in this critical area is well warranted, both by the level of recent activity in this area which should generate a strong response in

response to the Call, and by the need to present and discuss our current capabilities in this area.

ii) *Dynamics and Equilibrium in Integrated Models.* A wide variety of approaches to handling long- and short-run dynamics (and the interactions between long- and short-run dynamics), as well as a wide range of dealing with system equilibration (including the use of explicit dis-equilibrium models) exist within operational and research-based integrated models. A paper session dealing with these issues would provide an opportunity to assess the current state of art and practice with respect to this issue, as well as to stimulate debate and further research into this important methodological issue. It is possible that this Call might be jointly issued with A1C02(1) - Emerging Methods.

iii) *Methodological Issues in Integrated Models.* In addition to the issues of the treatment of dynamics and equilibria, a wide variety of methodological issues exist, as well as opportunities for the application of advanced modeling/analysis methods from a variety of disciplines. These include (but are not limited to) issues of spatial dependency (i.e., spatial autocorrelation), applications of spatial statistics/econometrics, temporal GIS applications, dealing with sub-system interdependencies (including estimation/validation issues of large modeling systems in which sub-model parameters are typically individually estimated), and issues in spatial/temporal/behavioural disaggregation. Possible co-sponsors for this paper session might include A1C02(1) - Emerging Methods; A5011 - Committee on Statistical Methodology and Statistica; Computer Software in Transportation Research; and/or A5015 - Committee on Spatial Data and Information Systems.

(d) Synthesis of Data Needs and Methods for Integrated Models. A major issue in the development and application of integrated models is, of course, assembling the database required to develop the model in the first instance and then to support its subsequent applications. The Subcommittee feels that a report which documents the current state of practice/art in integrated modeling data needs, sources, methods and issues would be of tremendous service to practitioners and researchers alike. As with the rationale for the 2003 Sunday workshop, such a synthesis would be extremely timely for agencies getting into integrated modeling for the first time so that they build upon the experience of others (and thereby avoid "reinventing wheels", etc.) as well as to promote the exchange of ideas of ideas, methods, etc. with respect to common "problem areas" (dealing with parcel level data, what to do about price data, etc.). While data needs obviously vary from one modeling system to another, it was felt that sufficient commonality exists that a synthesis of practice is possible, particularly if significant particular needs of the more common modeling systems are also addressed.

It is recognized that developing such a synthesis is a significant undertaking. Given this, it was find that seeking TRB support for a synthesis of practice report would be an appropriate way to approach this task. The co-chairs agreed to pursue the potential for undertaking this project with TRB.

6. Other Business.

(a) An announcement was circulated for the Third Oregon Symposium on Integrated Land

Use-Transport Models, July 23-25, 2002, Portland, Oregon. The success of past conferences was briefly discussed, and Subcommittee members were encouraged to considering attending the conference. This year's conference will focus on:

- The second generation integrated Oregon State model being developed by the Oregon DOT's Travel and Land Use Model Integration Program (TLUMIP);
- The Albatross activity scheduling modeling system developed at the Eindhoven Institute of Technology, the Netherlands; and
- ILUTE, a microsimulation-based integrated urban modeling system under development by a consortium of Canadian researchers.

For more details see <http://www.odot.or.us/tddtpau/3symposium.html>.

(b) Bruce Kiracofe distributed a notice for a guidebook entitled "The Use of Imagery in Transportation Planning", sponsored by FHWA, which will be available in Spring 2002. Topics covered include, remote sensing, GIS, and applications of remote sensing and GIS in transportation planning at the MPO and State DOT levels. For further details, contact Bruce at bkiracofe@shenandoahmountain.com.

(c) It was noted that both parent committees are striking subcommittees to deal with the promoting funding for research in areas of interest to the respective committees. It was noted the Subcommittee should work through these subcommittees and the parent committees to promote the integrated modeling research agenda. This should be the topic of more detailed discussion at future Subcommittee meetings.

(d) The next IATBR conference in Switzerland in August, 2003 was briefly discussed as a possible venue for integrated modeling activities. It was noted that one of the workshop sessions will be on large-scale models. No specific action with respect to this conference was agreed upon.

7. Adjournment. The meeting adjourned at approximately 9:00 p.m.

**SUBCOMMITTEE ON INTEGRATED TRANSPORTATION
AND LAND USE MODELING**

Subcommittee of A1C02 and A1D02 Committees

**SUBCOMMITTEE ANNUAL MEETING
WEDNESDAY, JANUARY 16, 2002
7:30 - 9:30 P.M.
HILTON**

AGENDA

1. Welcome -- overview of the new subcommittee
2. Introductions
3. Review of 2002 Annual Meeting activities
4. Review of subcommittee Terms of Reference
5. Discussion of possible subcommittee activities
 - 2003 Annual Meeting
 - Other activities?
6. Other Business
7. Adjournment

TERMS OF REFERENCE

A1C02(2)

Subcommittee on Integrated Transportation and Land Use Modeling

Motivation:

There is general agreement that an integrated approach to the modeling of transportation and land use systems is appropriate in the comprehensive analysis of transportation and land use policies. There are also in the United States legislative requirements to consider the connection between land use and transportation in such analysis work. A range of alternative methods have been developed and applied both in the US and elsewhere and work continues in both development and application. Notwithstanding, the use of integrated model systems is still rather limited.

The intention of this subcommittee is to foster ongoing efforts to develop, apply and disseminate work on integrated transportation and land use modeling systems.

Organization:

In recognition of the dual equal importance of land use and transportation in this context, this subcommittee belongs to two committees:

A1C02 Committee on Passenger Travel Demand Forecasting; and

A1D02 Committee on Transportation and Land Development

Membership in this subcommittee is drawn from each parent committee as well as from both the research and application communities. Consistent with the dual importance indicated above, the sub-committee has two co-chairs, one from each of the parent committees.

Mission Statement:

The subcommittee on Integrated Transportation and Land Use Modeling is interested in the development and application of integrated models of both urban and regional systems that include substantial representation of the transportation and broader land use components of these systems and the nature of the interactions between and within these components. In this case, the term 'land use' is used to refer to elements of the quantity and distribution of population and employment and related economic activities, the built form and the environment.

The subcommittee seeks to bring together researchers and practitioners from a diverse array of subject fields, including transportation engineering and planning, economics, geography, urban planning, geomatics, econometrics, statistics and market research (among others) in order to exchange information, ideas and techniques concerning the integrated modeling of urban and regional systems. More specifically, the subcommittee is concerned with the identification, development, application and dissemination of state-of-the-art methods for the representation of urban and regional systems and their evolution over space and time for use in both policy development and forecasting. The subcommittee intends to serve as a leading forum for disseminating scholarly work in this area.

In addition, the subcommittee seeks to support the development of improved analysis and forecasting tools through strong collaboration with other TRB committees and subcommittees

devoted to complementary themes.

ATTACHMENT C

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