



Transport Modelling for Non-Modellers

Overview

The modelling of junctions, road networks and public transport systems provides fundamental information to support decisions taken on future land uses, investment in the transport system and other policy interventions. With modelling tools ranging from “simple” equations through to highly complex mathematical, algorithm based systems, many people responsible for commissioning modelling activities find modelling a daunting area of responsibility. This course provides an introduction to the modelling tools commonly used, providing delegates with an understanding of the applicability of different models to various situations, and equips practitioners with simple techniques for checking model outputs.

Learning outcomes

On completion of the course, delegates will:

- be acquainted with the different types of modelling packages available, their applicability to different scenarios and the guidance informing model development
- be aware of the main stages in building (and maintaining) models and the time and cost implications of these
- have an understanding of the basic characteristics of traffic flow and how junction geometry, link characteristics and traffic signals influence capacity and queues
- be capable of sense-checking modelling outputs
- have greater confidence in choosing the right modelling method for a particular task

Who should attend

The course is designed for people with limited or no experience of transport modelling activities who are responsible for requesting or commissioning models, such as those working in the fields of strategic transport planning, strategic land use planning, development management and economic growth/regeneration. It is also suitable for those with managerial responsibility for modelling teams, who are looking for a broad overview of techniques and issues.

Topics Covered

Reasons for using models / Main components of models / Guidance Data requirements / Forecasting / Option testing and scheme appraisal Different types of model and their advantages, disadvantages and limitations:

- Operational/Traffic engineering models (ARCADY, PICADY, LINSIG, TRANSYT)
- Strategic highway assignment models
- Strategic multi-modal models
- Micro-simulation models
- Strategic public transport models
- Pedestrian models

Illustrated throughout by case studies and group work.

Sessions Outline

Day 1

Introductions, course objectives

Overview of Modelling

Reasons for using a model, applications, main components, types of models, software available, what's right for what situation, introduction to scenarios for case study.

Commissioning Models

The role of the client, time and cost implications of model development, contingency, contractual considerations, guidance, best practice, auditing models, what can go wrong, shelf life of a model.

Future Growth

Overview of forecasting and growth. Land use, population, employment and car ownership growth. TEMPRO, induced trips, variable trip matrices

Forecasting and Option Testing

Reference case, land use forecasting, DN/DM/DS scenarios, assessment criteria, results, common issues.

Local Models - Junctions

Overview of common packages - ARCADY, PICADY, LINSIG, TRANSYT.

Limitations, accuracy, common mistakes, interpreting and sense checking outputs. Junction capacity - basic principles.

Local Models - Microsimulation

Overview of types of models and when to use microsimulation. Building network and demand, calibration and validation, 2D and 3D graphics, interpreting results and outputs. Limitations.

Local Models - case study work

Interactive case study.

DAY 2

Strategic models - demand

Overview of strategic and multi-modal models, Demand/supply, 4 stage model (trip end, distribution, mode choice, assignment), absolute/incremental, induced trips, calibration/validation, interpreting results and outputs.

Strategic models - highway

Overview of strategic highway assignment models, type of softwares, building network and demand matrices, calibration and validation, interpreting results and outputs. Limitations.

Strategic Models - public transport

Overview of types of models and when to use. Building network and demand, calibration and validation, interpreting results and outputs. Limitations.

Scheme Appraisal

Major scheme business case, economic evaluation wider economic benefits. Guidance and tools - WEBTAG, COBA, TUBA, WITA. Common issues.

Larger models - case study work

Interactive case study.

Pedestrian modelling

Overview of types of models and when to use. Building network and demand, calibration and validation, 2D and 3D graphics, interpreting results and outputs. Limitations.

Future of Modelling Activity-based Modelling

Emerging data sources, changes in travel behaviour, home working, activity based modelling.

Future of modelling - real time predictive modelling

Modelling the near future for traffic management

Future of modelling - cycle modelling

Modelling cyclists

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Terms and Conditions

1 Registration Form

Applications should be made on the official registration form. Photocopies are accepted. One form should be completed for each delegate attending an event. It is important that all sections are completed legibly. Delegates are advised to retain a copy of the registration form for reference before sending.

2 Fees

Fees include attendance at lectures, lecture notes, lunch and all refreshments unless otherwise indicated.

Fees do not include overnight accommodation, breakfast and evening meals unless stated or otherwise indicated.

3 Acknowledgement

Receipt of a registration form will be acknowledged by email, delegates will be sent an invoice and an email of acknowledgement. Joining instructions, including a map, will be sent to each delegate by email approximately two weeks before the start of the event.

4 Payment

Unless otherwise stated payment in full must be made at the time of booking. All prices are exclusive of VAT, unless stated otherwise.

5 Cancellation

All cancellations, or alterations to a booking, must be received in writing. To avoid cancellation penalties, substitutes will be accepted at any time, if notified in writing and in advance of the event. Adjustments in fees will be made if there is any change in fee category. Cancellations received in writing up to 14 days before an event will be subject to an administration fee of £75 + VAT or the event delegate fee, whichever is the lower. Cancellation within 14 days of the event date or a 'no show', will be liable for the full fee.

6 Disclaimer

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