

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 multi-modal models, micro-simulation models, pedestrian models

Illustrated throughout by case studies and group work

Course Programme*

Day 1

Introductions

Course objectives

Overview of Modelling

- Reasons for using a model
- Applications, main components, available software

Commissioning Models

- Time and cost implications of model development
- Contractual considerations, guidance, best practice
- Auditing models, what can go wrong

Future Growth

- Overview of forecasting and growth
- Reference case and options testing

Local Models - Junctions

- Overview of common packages. Limitations, common mistakes

Local Models - Microsimulation

- Overview of types of models and when to use microsimulation

Local Models - case study work

DAY 2

Strategic models - Demand

- Overview of strategic and multi-modal models
- Four stage modelling, demand and network building

Strategic models - Highway

- Overview of strategic highway assignment models
- Demand and network building

Strategic Models - Public Transport

- Overview of types of models and when to use
- Building network and demand

Scheme Appraisal

- Major scheme business case
- Economic evaluation wider economic benefits
- Guidance and tools
- Common issues

Larger models - case study work

Pedestrian modelling

- Overview of types of models and when to use them
- Building network and demand
- 2D and 3D graphics

Future of Modelling

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

Emerging Technologies

- Modelling the near future for traffic management
- Modelling cyclists

Course close

* Please note that this is a preliminary programme and is subject to change

