DECISION MAKING IN TRAFFIC MANAGEMENT

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OUTLINE OF PRESENTATION

• UK POLICY CONTEXT

• TRAFFIC MANAGEMENT ISSUES

• COMPREHENSIVE APPRAISAL FRAMEWORK FOR TRAFFIC MANAGEMENT
PART I: UK POLICY CONTEXT

• Local Authorities and Highways Agency responsible for road network
• “A New Deal for Transport (1998)
• “Managing our Roads” (2003)
• “Future of Transport” (2004)
FUTURE OF TRANSPORT: a network for 2030

• Seeks networks to meet increased demand but also achieving environmental objectives
• For roads seeks network providing more reliable and freer-flowing services with people able to make informed choices
• Three central themes
  – Sustained investment
  – Improved transport management
  – Planning ahead
PART II: TRAFFIC MANAGEMENT

MAIN ELEMENTS (1)

• Reducing Demand through alternatives
  – Soft measures/ Smart Travel Choices
  – Investment in Bus/ Rail etc

• Restraining Traffic
  – Pricing for road space
  – Parking allocation and Pricing
  – Road space re-allocation
MAIN ELEMENTS OF TRAFFIC MANAGEMENT (2)

• Managing the Network
  – basic network design (signs, … etc)
  – Dynamic urban transport control
  – Red Routes in London
  – Highways Agency and Regional Traffic Control Centres
SMARTER CHOICES/SOFT MEASURES

• Aim to help people choose to reduce car use through better information and opportunities

• Range of policies include
  – Workplace and school travel plans
  – Personalised travel plans, travel awareness
  – Improved public transport information and marketing
  – Car clubs and car sharing
  – Teleworking, teleconferencing and home shopping

• Popular, but debate on potential contribution to reducing car travel

• Recent study for UK Government
REPORT ON SOFT MEASURES: MAIN CONCLUSIONS (1)

- Results are not a forecast, but a “cautious” assessment of “maximum reasonable potential scope” if there is “serious commitment and coherent general policy approach”

- Suggest that with such a high intensity scenario, over a ten year period:
  - Urban traffic reduced by 21% peak and 13% off peak
  - Non urban traffic reduced by 14% and 7%
  - Nationwide reduction of all traffic of about 11%
STUDY ON SOFT MEASURES: MAIN CONCLUSIONS (2)

• Conclude that “soft measures, in a favourable policy context, could be sufficiently effective in reducing traffic that they merit consideration for an important role in transport strategy, prima facia offering very good value for money and few disadvantage”
SMART CHOICES: policy conclusions

• Government recognises significant value for money achievable

• Will promote measures by, for example,
  – Ensuring every school has a travel plan by 2010
  – Free consultancy advice for those creating work travel plans until at least 2006
  – All Govt Depts to reduce their car commuting by 5% by 2006
  – Supporting Local Authorities to build such schemes in their Local Transport Plans, including setting targets
  – Development of High Occupancy Lanes
ROAD PRICING

- Powers given to Local Authorities in Transport Act 2000
  - Led to London application
  - Experience of other authorities limited
  - Proposals in latest White Paper to encourage

- Lorry charging plans
- Road Pricing Feasibility Report
Road Space Reallocation

• The SACTRA report on ‘induced traffic’ in response to new capacity was influential.
• Interest in whether reallocating road space to other uses would lead to reductions
• Important as often argued reallocation would create major traffic problems
• Study of over 70 case studies seems to show significant deterioration rare; with wide range of responses being evident plus ‘churn’
• Suggests on average 11% of traffic ‘lost’
• Identifies the importance of design, publicity, consultation etc and of monitoring once open
TRAFFIC MANAGEMENT ACT

• Aimed at tackling perceived deterioration in congestion
  – Definition of congestion an issue

• Four main parts in Act
  – Traffic management on trunk roads
  – Network management by local authorities
  – Measures relating to street and highway works
  – Traffic and parking enforcement
ACT: (a) TRAFFIC MANAGEMENT ON TRUNK ROADS

- Government wants HA to improve capacity of existing road network as set out in White Paper
- Also wants to focus police on ‘crime’
- Review by main stakeholders proposed transfer of certain traffic management tasks
  - Control office functions
  - On-road activities
  - Central planning and control functions
ACT: TRUNK ROADS - ROLE OF AGENCY

• Already in process of establishing Regional Control Centres
• New legislation will establish Traffic Officers
• Aim will be to keep traffic moving by managing incidents and programmed events
• Powers to stop traffic, divert traffic etc etc
  – Police will still have primacy in serious cases
TM ACT: (b) NETWORK MANAGEMENT BY LOCAL AUTHORITIES (1)

- Efficient operation of urban networks of crucial concern to economy and society
- Local authorities have a range of powers under existing legislation
- Under which they carry out a range of functions—but with differences in performance levels
- Legislation will seek to ensure all authorities manage network in holistic way and in interests of users
ACT: LOCAL AUTHORITIES (2)

- New measures come in three parts
  - Enhanced network management **duty** for movement of traffic
  - Appointment of Traffic Manager in each authority as part of this duty
  - Reserve powers for Sec of State to intervene by appointing a Traffic Director for the area
- In association with this new duty, the SoS will be able to issue statutory guidance on exercising this duty
There has been longstanding concern about disruption by statutory undertakers – utilities-street works

Similar concerns about unnecessary disruption caused by highway authorities

Existing legislation (NRSWA 1991) failed to anticipate the impact of utility deregulation

Need for legislation to achieve better balance of control between highway authorities and utilities
ACT: STREET AND HIGHWAY WORKS (2)

- Permit schemes
- Powers to direct
- Enforcement regime
- Restricting work where recent work
- Skips and scaffolding
- Duty to inform on location of apparatus
- Resurfacing of streets
- Miscellaneous changes to existing regime
TM ACT: (d) TRAFFIC AND PARKING ENFORCEMENT

• Road Traffic Act 1991 paved the way for decriminalised parking enforcement: Linked to retention of penalty charge by local authority

• Wider extension of enforcement powers in London by 2000 legislation

• New Act will provide single legislative base for a range of enforcement issues

• Act will give reserve powers to Govt to direct local authorities to apply for civil parking enforcement powers
PART III: APPRAISAL FRAMEWORK: OVERVIEW

• Structure of Appraisal Framework in UK
• Some problems in completion
  – I) Bias in forecasting costs and patronage
  – II) Forecasting and Valuing Impacts
• Application to traffic management
• Some problems in use for decision making
  – Prioritisation Methods
  – Devolution of Decision making
• Role of Evaluation
STRUCTURE OF APPRAISAL FRAMEWORK in UK

• Five main criteria
  – Economy
  – Environment
  – Safety
  – Accessibility
  – Integration
• Plus “supporting analysis”
• Application for Major Urban Schemes established
• Less well established for Traffic Management
PROBLEM I: FORECASTING BIAS

• Issues of bias in addition to ‘risk’ & ‘uncertainty’

• Chronic problem with underestimation of costs
  – Treasury Guidance on ‘Optimism Bias’
  – lack of evidence so research required
  – Application for Major Urban schemes

• Difficulties with application in practice
PROBLEM II:
Impacts and their valuation

• Forecasting and valuing environmental and health effects, in particular, are major issues
• Also major problems in respect of economic development/regeneration
• Will consider current implementation in respect of
  – health
  – noise
  – Wider economic impacts
HEALTH EFFECTS

• Values for prevented fatality and injury from accidents well established

• However question on direct applicability for pollution health impacts due to, for example
  – Acute air pollution deaths mainly among old
  – Also among those in poor health
  – Pollution may shorten life expectancy due to chronic (ie long term) effects
  – May be different concepts of ‘controllability’

• Many issues are more to do with epidemiology rather than economics
NOISE

- Significant numbers of hedonic price studies but limitations on transferability
- Need to estimate demand function for quiet
- Recent study in Birmingham did so
- For road noise estimated that a 1dB change ranged between £19 p/a for low income household in quiet area to £105 p/a for high income in noisy area
WIDER ECONOMIC IMPACTS

• Recognised that congestion will impede the economic development of an urban area
• However no robust relationship between improved accessibility and economic change
• Role of Economic Impact Report
• May be able to use evidence on property prices
• But must guard against double counting
APPRAISAL OF TRAFFIC MANAGEMENT

• Relevance of most criteria in Appraisal Framework clear

• Difficulty in forecasting effects in many cases given detail and complexity
  – Role of simulation models

• Some examples:
  – Regulatory Impact Assessment of Bill
USE FOR DECISIONS MAKING: DEVOLUTION AND PRIORITISATION

• Traffic Management important in National and Local strategies
• Decisions often involve different levels of Government
• Simple rule of BCR ranking in principle
  – So great incentive to maximise ‘monetisation’ of benefits
  – But limitation of coverage and timing
  – As well as problems of getting agreed values
• Importance of funding including private sector involvement may be relevant
EVALUATION STUDIES

• Role and objectives of evaluation must be clear before they are undertaken
• Difficulties of getting robust values which are transferable
• Examples and lessons
  – JLE
  – Traffic Management
CONCLUSIONS

• New approaches to appraisal have the potential to improve decisions on traffic management

• The main challenge is to ensure improved identification, measurement and valuation of those objectives at the heart of policy

• Traffic growth will raise the importance of ensuring robust assessment