

4 Road Pricing Option Development

Introduction

- 4.1 This section explains the work undertaken to test a wide range of road pricing options in the West Midlands and to identify which options provided the most transport benefit.

West Midlands Conditions

- 4.2 At the start of the TIF Project, several conditions for the West Midlands were set out which would need to be satisfied before any form of road pricing could be considered. These were:
- Any scheme must improve and not detract from the region's competitiveness;
 - Appropriate transport alternatives must be in place;
 - There should be a 'fit' between any local road pricing scheme and the framework for national road pricing;
 - Revenues must be hypothecated for transport investment in the West Midlands;
 - Be responsive to local conditions both in terms of time of day and location.

Modelling and Assessment Approach

- 4.3 A number of charging options were tested along with the investment package schemes. The aim of these tests was to identify any problems resulting from the implementation of the schemes and the effects of possible solutions. The primary tool used for testing the various options has been the PRISM (Policy Responsive Integrated Strategic Model) model which has specifically been developed for the West Midlands. Further information on PRISM and the modelling approach can be found in Appendix A.

Road Pricing - Centres

- 4.4 In 'Gridlock or Growth – Choices and Challenges for the Future', two fundamentally different approaches to Road pricing were considered. A satellite based system allowing 'Time, Distance and Place'⁽ⁱ⁾ charging and variations on automatic number plate recognition and tag and beacon systems that would allow for "Time and Place" only charging.

i Time, Distance & Place systems charge vehicles according to how far they drive along different classes of road, with tariffs potentially varying by class of road, day of the week and time of day.

- 4.5 In the debate and consultations following publication of the report, 'Time, Distance and Place' based charging was preferred as being most likely to affect behaviours in a desirable way and being the fairest solution. The Government are carrying out technology trials on such systems; however, there is currently no prospect of being able to deploy an enforceable solution before 2021. Therefore the Study explored other options using currently available technology to achieve a "Time and Place" charging solution.
- 4.6 The initial options considered were for zones and/or cordons. These ideas were rejected for not directly targeting localised congestion points. In addition, the complexity of a multi-centred approach with up to 12 centres was thought to be too complex for effective communication.
- 4.7 Subsequent work concentrated on corridors leading to main centres, charging at the centre only and spreading outwards along the corridor to deter aberrant behaviour. It has been found that by charging at the destination end of the corridor, sufficient traffic is deterred, re-routed or re-timed to make a genuine difference to peak time congestion. This means that the expense of establishing congestion charge equipment and the anti diversion measures needed to support it all along the corridor can be avoided.
- 4.8 The charge has been modelled in the AM and PM peak periods with reduced price 'shoulder' charges to help smooth traffic as the charging period begins and ends.
- 4.9 As the work progressed it became clear that a cost effective road pricing solution using current technology could not be developed for Dudley, Sandwell, Walsall and Solihull due to the lesser concentration of traffic on radial access routes to these centres.
- 4.10 Pricing options in Birmingham, Wolverhampton and Coventry were further developed with differential pricing; £2.50 each way for Birmingham and £1.50 for Wolverhampton and Coventry with a £5 per day cap for anyone accessing multiple areas.
- 4.11 This focus allowed for some refinements to these schemes including dealing with some of the secondary effects in the model caused by car drivers that 'choose' to avoid the charge and create congestion elsewhere. These effects can be dealt with by a variety of traffic management measures including better traffic light phasing or minor junction improvements.
- 4.12 However, the modelling work showed that Wolverhampton and Coventry are not suitable for road pricing at present, with few economic benefits. Further details on this can be found in Appendix A.
- 4.13 Modelling then concentrated on a scheme designed to reduce congestion on the congested radial routes into Birmingham, with a particular focus on the city centre through the application of £5 daily charge. The charge would be applied to key

radials serving the city centre and designed in a way to minimise traffic “rat running” through alternative routes, although it is acknowledged this would not be completely eradicated. The A38 would remain a free through-route to provide north south movements without incurring a charge.

Motorway Pricing

- 4.14 In addition to the development of ideas for the urban centres, options were considered for a local anti junction-hopping charge on the motorways. Such a scheme would apply to drivers who both go onto the motorway network and exit within the charging area. Drivers joining the network and leaving the area completely or entering the Metropolitan Districts from outside of the area would not be charged, nor would national through traffic.
- 4.15 Three options for motorway charging were modelled with two aims:
- reducing overall volumes in order to lessen the likelihood of flow breakdown and gridlock that spills onto the local area;
 - Increasing the local motorway performance and thus enabling local outbound and inbound ‘strategic’ traffic to access the motorway and make trips to other centres with less chance of being timed out on drivers hours:
 - I. Option 1: (Restricted) M6 J10 to J6 & M5 J 3 to J1;
 - II. Option 2: Extended along M6 and M5 plus part of M42;
 - III. Option 3: Whole Motorway Box plus extensions into the Shires.
- 4.16 Option 1, the smallest of the options geographically was found to deliver the most effective solution as the others gave only limited increase in congestion benefit for disproportionate increases in development cost and complexity.
- 4.17 Local traffic displaced from the motorway would need to be given suitable alternatives both in terms of local road improvements and public transport provision. The modelling indicates that in general terms the local network can absorb the additional traffic without problems, though there would be some particular links requiring improvement/modification.