The Option Values Sub-Objective

TAG Unit 3.6.1

June 2003

Department for Transport

Transport Analysis Guidance (TAG)

Contents

1 The Option Values Sub-objective

1.1 Introduction

1.1.1 Option values are recognised by the SRA in their *Appraisal Criteria* (SRA, 2003) but in principle are equally applicable to other public transport modes (bus, coach, LRT, underground, air), to car ownership, road infrastructure and to freight facilities. Within the Multi-Modal Studies, it will be particularly important to consider option values if the strategies or plans which are being appraised include measures which will substantially change the availability of transport services within the study area (e.g. the opening or closure of a rail service, or the introduction or withdrawal of weekend buses serving a particular rural area).

1.1.2 The idea underlying option values can be explained using the following example. Consider a strategy or plan which includes the re-opening of a closed railway line linking a series of rural towns and villages to a major town or city that already has a railway service. Even if a particular individual living in one of the villages along the route does not intend to use the rail service with any regularity, they may still value having the option to use the service if they choose. For example, a car-owner may value the ability to use the service when for whatever reason they cannot drive or their car is unavailable. A non-car-owning resident who generally does not travel beyond the village may value the knowledge that, should they need to reach the town or city, the facilities exist for them to do so, at reasonable cost and with a reasonable level of convenience. In addition, those who do intend to use the service on a regular basis may also have an option value, over and above the value of their intended use of the service, since they too may value the options offered for rail travel other those already taken account of in their individual plans and expectations.

1.1.3 From this example, it can be seen that:

- option values are associated with unexpected use of the transport facility which is not built into the forecasts produced by the modelling stage, and would otherwise not appear in the appraisal as a benefit;
- option values are related to the individual's attitude to uncertainty - in practice a range of option values is likely to be found within the population; and
- there is a real risk of double counting, particularly when trying to separate individuals' willingness to pay to have the option of using the service from their willingness to pay for their actual use of the service.

1.1.4 Evidence of option values for transport has been found in two studies in particular (which should also prove useful as references on methodology): one examining the removal of a suburban bus service (Bristow *et al*, 1991) and one examining values placed on the retention of the Settle-Carlisle rail service (Crockett, 1992). The latter found values of around 70 pence per week, although the sample included both users of the service and non-users, and the latter were found to have significantly lower option values than the average. In the Multi-Modal Studies, it will be important (if option values are being estimated) to include both users and non-users as separate groups within the survey work.

1.1.5 Methodologies for calculating option values and avoiding the double-counting problem noted above are discussed in an unpublished report to OPRAF *entitled Planning Criteria Research Requirements* (ITS, March 1999). For further details, contact SRA.

1.1.6 In presenting the findings, the Qualitative Impacts column should be used to identify which group of transport services within a particular strategy (or option) are the source of any additional (or reduced) option value, the nature of the change in service and the sign of the change (i.e. option value gained or lost). The Quantitative column should be used to indicate the size of the populations affected and the nature of the analysis used to generate any monetary measures of total value. The Assessment column should be used to report the total monetary benefits (or disbenefits) of the option or strategy being appraised. For consistency with other sub-objectives, this monetary total should be expressed as a present value, discounted over the whole appraisal period.

1.1.7 For the 'Option values' sub-objective, it is recognised that it will often not be feasible to carry out the analyses outlined above, especially in the early stages of developing an option or when appraising a strategy, rather than a plan. Therefore an alternative qualitative procedure should be adopted, outlined in Box 1 below.

Box 1: Qualitative procedure for assessing option values

Qualitative scores should relate to the size of the resident community given options to travel by the strategy, according to the following scale:

Community	**Service Withdrawn**	**Service Added**
≥2000 people	Strong adverse	Strong beneficial
500-1999 people	Moderate adverse	Moderate beneficial
1-499 people	Slight adverse	Slight beneficial
0 people	Neutral	Neutral

Where more than one community is affected the total number of resident individuals should be added together (with a negative sign attached to communities losing their service).

'Ghost' services not providing reasonable opportunities for return travel on all days of the week should not be treated as services for these purposes. Withdrawal of rail services replaced by bus should be counted as a withdrawal of service, given the lower level of accessibility offered to significant groups of users.

1.2 Application of TAG to Highway Schemes

1.2.1 The *Option Values* sub-objective did not previously appear in DMRB. However, Highway Schemes should be assessed against this sub-objective using the advice given above.

2 References

SRA (2003) *Appraisal Criteria - A Guide to the Appraisal of Support for Passenger and Freight Rail Services*

Bristow AL, Hopkinson PG, Nash CA and Wardman M (1991), Evaluation of the Use and Non-Use Benefits of Public Transport, Development of Survey Methodology. Working Papers 309 and 310, Institute for Transport Studies, University of Leeds.

Crockett, 1992, Should Non-Use Benefits be Included in Social Cost Benefit Analysis. MA Dissertation, Institute for Transport Studies, University of Leeds.

ITS (March 1999) *entitled Planning Criteria Research Requirements*

3 Document Provenance

This Transport Analysis Guidance (TAG) Unit is based on Chapter 7 Section 2 of *Guidance on the Methodology for Multi-Modal Studies Volume 2* (DETR, 2000).

Technical queries and comments on this TAG Unit should be referred to:

Integrated Transport Economics and Appraisal (ITEA) Division
Department for Transport
Zone 3/08 Great Minster House
76 Marsham Street
London
SW1P 4DR
itea@dft.gsi.gov.uk
Tel 020 7944 6176
Fax 020 7944 2198