Framework demonstrates benefits of operations

Day-to-day operations are a crucial part of managing and operating any transport system. Now there's an improved framework for assessing the economic benefits of these activities.

In the past in New Zealand, economic appraisals for operations activities have not been extensively carried out. New research has established economic evaluation principles and techniques, specifically for use with operations activities, to enable comprehensive appraisals of their benefits to become more established and widespread.

The principles and techniques have been structured into a practical and flexible assessment framework, which was successfully trialled in three case studies.

Putting operations to the fore

The importance of conducting economic evaluations for 'standard' transport interventions, such as infrastructure and safety improvements, intersection treatments and public transport schemes, is well recognised. Such appraisals tend to follow well-developed and documented procedures and analysis techniques.

Operations activities are also generally recognised as being beneficial. They relate to the day-to-day operation and management of the transport system, and include such activities as network optimisation, ITS system operation, traffic management, planned and unplanned event management, traveller information, and the collection and use of business intelligence.

Compared with other interventions, operations activities generally require significantly lower investment and are likely to return high value-for-money outcomes.

Historically, there has been limited requirement in New Zealand to carry out in-depth economic assessments of operations activities. As a result, the methodologies and approaches for carrying out such appraisals are not well established.

However, the Transport Agency business case approach encourages the identification of a wide range of alternatives and options that will include operations activities, and these need to be considered and evaluated alongside standard transport investment solutions. In addition, parties involved in implementing transport operations (such as the regional transport operations centres) may need to consider the economic impacts, benefits and balances of their day-to-day tasks and processes.

The research report by Traffic Design Group and Ian Wallis and Associates provides guidance based on their research to enable this to happen. The research project's purpose was to identify potential economic approaches and evaluation methodologies for operations activities; compare these with those used for standard transport interventions; and develop a feasible framework for the economic assessment of these activities.

The new appraisal framework

In developing the new framework, the research team took into account the 'agile' environment that the agencies carrying out day-to-day operations activities typically work in. Such environments tend to focus on immediate on-street changes and perceived low-cost approaches, and favour quick-turnaround appraisals, rather than the fuller assessments that are usual for larger-scale standard interventions.

Bevan Wilmshurst of Traffic Design Group says, 'The economic framework we've developed for operations activities is designed to be flexible and practical in its application. The procedures are adaptable to both pre-implementation approaches, including the application of transport models, and post-implementation approaches, using on-road traffic data collection methods.'

The research report fully documents the role of post-implementation (measured data) and pre-implementation (modelling) evaluations in the framework, as these approaches play an important part in assessing the economics of operations activities. Which approach to adopt is a key consideration in applying the framework and making an effective evaluation. The framework is applicable to both approaches and provides some background and considerations in selecting a suitable approach.

The research identified three other key considerations relating to the economic appraisal of operations activities, all of which are taken into account in the framework.

- The definition of the 'do minimum' scenario – definition of the do minimum and development of option costs are key components of operations economic assessments. Defining the do minimum scenario may be as straightforward as reflecting a 'do nothing' situation. However, it may involve careful consideration of the

scenario without the intervention (for example, when incident management or traveller information systems are being implemented, and in assessing optimisation strategies) and the specification of a base level of operational upkeep.

- The lifespan of the activity – considering and evaluating the lifespan of the activity is often a critical aspect of an operations economic assessment. The length of the lifespan needs to reflect the type of activity – typically the lifespan and evaluation period for operational activities will be significantly shorter than the standard economic scheme appraisal length. For example, for traffic management activities, incidents and planned events, the lifespan is likely to be the length of the event. For traffic optimisation measures, the lifespan may be the length of time over which it is anticipated that the activity will continue to deliver benefits. For traveller information, lifespan will need to be considered on a case-by-case basis.
- Fully assessing the costs of the operations scheme – assessments must include both external costs (consultancy contracts, equipment etc) and allowance for the operating agency's internal resources (staff time, running costs, software etc).

The report concludes that, in general, operations activities are highly cost-effective transport treatments. The framework will make these benefits more evident.

The framework fits within the Transport Agency's overall assessment framework and notably can be included within business case assessments.

'The economic evaluation framework will provide a practical tool for business case assessments where solutions may, and should often, consider operations treatments to extend the lifespan of existing infrastructure and potentially delay more costly capital expenditure,' the report says.