

Economic Analysis of Traffic Management Projects when using Sidra or Paramics

TDT 2012/

01

INTRODUCTION

This Technical Direction provides specific advice in relation to the undertaking of the economic analysis of traffic management projects when using Paramics and Sidra traffic and transport modelling packages.

PARAMICS and SIDRA are microscopic simulation models used by traffic and transport practitioners to determine the benefits to apply to an economic evaluation for traffic management projects.

PURPOSE

To provide a formal tool to be used across the RMS for the undertaking of economic analysis of traffic management projects when using Paramics and Sidra traffic and transport modelling packages

BACKGROUND

Economic evaluation plays a key role in the allocation of resources within the RMS. It is undertaken to ensure the provision of value for money to the community by maximising benefits from road investments. It is also used to analyse costs and benefits for different options which meet the project objectives.

PARAMICS is a micro-simulation traffic and transport modelling tool that provides real time replication of the real world in terms of the behaviour of individual vehicles. It allows for a study of vehicle movements between origins and destinations while accounting for interaction between vehicles and their surrounding road environment. It provides an opportunity to compare different signal control strategies and infrastructure options.

SIDRA (signalised and unsignalised intersection design and research aid) evaluates intersections, roundabouts, stop and give way sign controls. It is specifically designed to provide highly accurate estimates for traffic conditions at single and paired intersections. It uses detailed analytical traffic models coupled with an iterative approximation method to provide estimates of capacity and performance statistics (delay, queue length, stop rate, etc). It is a single intersection package that can be calibrated for local conditions assuming isolated intersection operations except that it makes allowance for platoon arrivals generated by coordination signals.

Distribution List:

Director, Infrastructure Development; Director, Commercial; Traffic Management and Road Safety staff.

For further enquiries

www.rms.nsw.gov.au | E technical.directions.publication@rms.nsw.gov.au

Traffic management projects in relation to this technical direction are small scale infrastructure projects such as lengthening turning bays, widening intersections together with changing traffic lights configuration, adding extra lanes in sections of road, implementing bus by pass lanes (B phasing at intersections).

GENERAL

Two excel spreadsheets are available for application when undertaking economic analysis for traffic management projects. One uses the outputs from the Paramics model and the other uses the outputs from the SIDRA model. The outputs from the model are inserted into the spreadsheet together with maintenance & operation costs, construction costs, estimated annual reduction in crashes, analysis period and annual traffic growth rate for the corridor.

Once this data is inserted the spreadsheet calculates economic outputs including net present value, benefit-cost ratio, first year internal rate of return and others at discount rates of 4%, 7% and 10%. It also provides the breakdown of the benefits in terms of travel time savings, vehicle operating costs and safety. When using a SIDRA model it also provides environmental benefits.

RMS personnel assessing a traffic management project using PARAMICS and/or SIDRA traffic modelling packages must use the relevant spreadsheet to undertake an economic analysis.

Excel spreadsheet models can be obtained on the Intranet at

<http://home.rta.nsw.gov.au/org/structure/network/trafman/neteff/index.html>

APPLICATION

The technical direction should be adopted for use in the project development phase for traffic management programs.

ACTION

This Technical Direction takes effect immediately

UPDATES

To ensure that this *Technical Direction* remains current and relevant, minor updates may be made from time to time. This may be done through the Roads & Maritime Services' website using the Traffic & Transport Policies & Guidelines Register which can be found at:

www.rta.nsw.gov.au/trafficinformation/guidelines/documentregister.

The Register should always be checked prior to using this *Technical Direction*.

Approved by:

Authorised by:

SIGNED

SIGNED

Craig J Moran
General Manager
Traffic & Safety Management

Mike Veysey
Director
Network Management