POPE of LNMS - Summary Report

Scheme Title: A45/A46 Stivichall Junction
HA Number:
Opening Date: May 2004
POPE Stage: One Year After

Scheme Description

The A45/A46 Stivichall Junction is a double grade separated interchange located to the south of Coventry. High traffic demand has meant that prior to scheme opening, congestion had reached significant levels, in particular:

1. Significant queuing and delays on the A46 NB off slip and A45 westbound off slip as result of limited road capacity; and
2. A high incidence of congestion related accidents (55% of Pre-Opening PIAs involved stationary vehicles/queuing traffic)

The A45/A46 scheme was completed on 20th May 2004 and key improvements included:

- The construction of a third lane on the A45 westbound off slip approach to the roundabout to create a designated lane to the A46 southbound;
- The installation of new MOVA controlled traffic signals at the A46 northbound offslip and circulatory carriageway; and
- Additional road signs, lane markings and safety fencing.

Scheme Objectives and Attainment

Objectives		Objective Achieved?
1.	Increase the efficiency of this junction by reducing the existing capacity problems	Yes
2.	Reduce the incidence of congestion related accidents	Some Improvement
3.	Improve the journey ambience for users of the junction.	Slightly Beneficial

Economic Summary

	Predicted	Predicted Corrected	Actual
First Year Benefits (2002 prices)*	£4.1m	£3.7m	£3.8m
30 Year Benefits (2002)*	£110.1m	£106.1m	£108.8m
Costs (2002 Prices)*	£1.4m	£1.4m	£0.931m
Benefit Cost Ratio (BCR)	78.6	75.7	116
%FYRR	300%	275%	406%

* Figures are quoted in 2002 price base and discounted to 2002

Main Scheme Impacts

Economy	- First year economic benefits were broadly as expected; - The out-turn FYRR and BCR were higher than expected and demonstrated excellent value for money; - Traffic on the A46 has grown by around 7%. This compares with an NRTF growth rate of 8%; - There has been an observed reduction in journey time on the A45 westbound to A46 southbound movement (estimated 1.5 minutes per PCU); - Total vehicle hour savings at the junction were 300,268 vehicle hours compared to a predicted saving of 308,799; - Disbenefits caused by the installation of signals on the circulatory carriageway have been substantially offset by journey time benefits materialising from signal installation on the A46 off-slip; - The reliability of the POPE assessment is subject to the accuracy of the 'before' delays stated in the PAR.
Safety	- After opening there are 0.7 fewer accidents per year. This is less than original predicted saving of 3.9 accidents per year and may have occurred by chance alone rather than as a result of the scheme; - The severity index has increased from 6% to 14%; - The proportion of accidents involving stationary or slow moving traffic has fallen from 81% to 60%;
Environment	- There has been an adverse visual impact created by the proliferation of signs and signals; - The scheme delivered some slight journey ambiance benefits through improvements to journey times and enhanced signing and lining.
Accessibility	- The scheme had no measurable impacts on public transport interchange or cycling/walking accessibility
Integration	- Scheme objectives were aligned with M1 to Birmingham Route Management Strategy and West Midlands LTP policy priorities.

Lessons Learnt

- MOVA signals implemented at the junction have offered significant journey time savings and have resulted in a observed improvement to junction efficiency;
- The PAR methodology provided a slight overestimate of economic benefits but did not consider the effects of the following:
    - Delays to circulating traffic caused by the installation of traffic signals;
    - Modelling of two right turn lanes for traffic approaching the signals from the A46 off slip (the PAR assessment assumed just one right-turn lane); and
    - Variations in journey time savings by junction arm.
- There was no observed before data (delays or journey time information) available to verify the accuracy of LINSIG or ARCADY outputs stated in the PAR and hence the POPE assessment assumes that before delays quoted in the PAR are correct;
- The PAR considered all accidents within 600m of the junction irrespective of accident causation or location at the junction. This resulted in a large overestimate of accident savings;
- There is currently insufficient post opening data to verify whether accident savings are a direct result of the junction improvements; and
- Costs were lower than expected due to the withdrawal of the lane gain element of the scheme and the inclusion of 10% optimism bias in the PAR prediction.