

POPE of Major Schemes Summary Report

Scheme Title	A500 Basford, Hough and Shavington Bypass
Opening Date	2 nd May 2003
POPE Stage	Five Year After Study

Scheme Description

The A500 Basford, Hough, Shavington Bypass is a major Highways Agency scheme that provides 7.5km of dual carriageway road bypassing the villages of Shavington and Hough to the south of Crewe. Further key features of this scheme are summarised as follows:

- Alterations to the roundabouts at either end of the Bypass and installation of two intermediate roundabouts;
- Construction of six new bridges over the Bypass and a 200m long bridge over the West Coast Mainline;
- Re-construction of Rope Lane near Shavington High School;
- The old A500 Newcastle Road was severed and replaced with a link road to the Cheerbrook Roundabout at the western end of the Bypass; and
- Provision of a new footway / cycleway bridge spanning the bypass at Wybunbury Lane.

Objectives (Appraisal Summary Table)

Objective Achieved?

- | | |
|--|------------------------------|
| • Address safety problems in the villages of Hough and Shavington | Yes |
| • Reduce the accident rate on the old A500 by removing through traffic | Yes |
| • Reduce traffic flow through Hough and Shavington by up to 75% | Almost (Reduction of 65-70%) |
| • Address environmental problems in Shavington and Hough | Yes |

Key Findings

- The objectives of this scheme have largely been met, with the environment and safety much improved in Hough and Shavington due to a reduction in through traffic.
- On the whole traffic flows were in line with predictions, there were however some inaccuracies regarding how this traffic was distributed across the network for example traffic on the A500 corridor was higher than forecast and lower than forecast on the A534.
- Journey times are 4 to 4.5 minutes less than those observed prior to scheme opening. These savings are much greater than forecast. However, the basis of the original forecast is unclear.
- Several other schemes have taken place in the area over which journey time and accident benefits were appraised. It is therefore not possible to say with certainty whether changes can be solely attributed to the bypass itself.
- Due to a lack of information provided for the POPE study (including the COBA model) the Transport Economic Efficiency sub-objective was assessed using a number of logical (yet significant) assumptions. The appraisal of this scheme was undertaken in

the early 1990s, and the HA has since improved its record keeping for more recent schemes.

- The modelling for this scheme was undertaken prior to the requirement of variable demand modelling as part of scheme appraisal. The HA's modelling procedures have since been improved.
- New developments in the area have also possibly impacted on traffic levels observed in the vicinity of the scheme. In April 2009 the Department for Transport (DfT) issued new guidelines on 'uncertainty in traffic forecasting' which covers this topic. This guidance is now used in all our scheme appraisal calculations (including the associated greenhouse gas, noise and air quality predictions); ensuring decision makers take account of the range of possible outcomes that may occur.
- The safety benefit has been assumed to be negligible due to the scheme constituting only a small part of the large area considered; other changes since construction; and, the change in accident rates not being statistically significant.
- This scheme cost more than predicted. Since the time of these estimates the HA has changed the way it estimates scheme costs in order to improve accuracy.
- A response rate of 23% in the stakeholder survey is considered to be excellent for a Five Year After report. It is therefore our intention to continue to undertake these as part of POPE studies where they can provide information about wider scheme impacts.
- As the Environmental Statement dated back to 1991, the suggested mitigation measures were not regarded as extensive as expected by the time the scheme was constructed.
- This section of road has now been de-trunked and ongoing responsibility for maintenance and management of this scheme now lies with the Local Highway Authority.
- Scheme planting measures have been slow to establish, hence the scheme's impact on landscape was deemed as being worse than expected.

Summary of Scheme Impacts

Traffic

- The bypass has successfully re-routed a large amount of traffic (65-70%) away from the villages of Shavington and Hough, although this reduction is marginally less than forecast (75%).
- There appears to be some evidence of outstanding 'rat-running' issues associated with congestion issues on the A500 Barthomley Link and A534 (through Crewe).
- There has been an overall increase in traffic of around 10-15% in the vicinity of the scheme, this is marginally higher than expected but can partially be attributed to developments implemented following scheme opening.
- Five years after scheme opening, traffic re-assignment effects over and above those expected in the original forecasts were observed – these included local effects and re-assignment of A534 traffic in Crewe on to the bypass.
- Post opening observed journey times were 4 to 4.5 minutes less than those observed prior to scheme opening. These savings are almost 3 times greater than forecast.
- Journey time reliability benefits have not been captured in the economic summary shown above; however feedback from around 50% of stakeholders in the local area suggested that the scheme had a strong beneficial or beneficial impact on journey times.

Safety

- In contrast to forecasts, the scheme has not delivered a statistically significant accident saving.
- Despite a statistically 'non significant' increase in accidents overall, there has been an observed 50% reduction in PIAs and casualties on the old A500.

Environment

- Environmental impacts on most sub objectives were as expected.
- The scheme had beneficial impacts for Noise, Air Quality and Heritage. Given that there is more traffic than expected on the bypass, it is assumed that improvements were not as beneficial as expected for properties located closest to the bypass
- In contrast to forecasts there has been a significant increase in carbon emissions – this is potentially a consequence of unexpected re-assignment from the A534 on to the bypass
- Scheme planting has not yet fully established; this combined with the introduction of lighting at roundabouts along the extent of the scheme has meant there has been an overall slight adverse impact on landscape (this is still broadly in line with forecasts).

Accessibility

- As expected, the removal of a substantial amount of traffic from the villages of Shavington and Hough has improved the crossing environment for pedestrian.
- A combined pedestrian/cyclist bridge has helped to reduce the severance effects of the bypass.
- 60% of stakeholders interviewed in the Stakeholder survey felt that the bypass had had a beneficial/strongly beneficial impact on accessibility to businesses.

Integration

- The scheme objectives are consistent with those set out in a number of local and regional policies including the Cheshire Local Transport Plan, Cheshire Structure Plan and the Crewe South East Quadrant Masterplan Strategy.

Summary of Scheme Economic Performance

	Costs in £m 2002 Prices discounted to 2002 at 3.5%	
	Pre-scheme expectation	Post-scheme re-forecast
Journey Time Benefit ¹	£33.86m	£96.51m
Safety Benefits ¹	£17.21m	£0.00m
Total 30 Year Benefits (PVB)	£51.07m	£96.51m
Costs (2002) prices	£31.25m	£54.8m
Benefit Cost Ratio (BCR)	1.63	1.76

¹Benefits represent the total accrued over a 30 year assessment period

- Overall, the outturn BCR is estimated to be very close to that predicted (1.76), however all individual components of the BCR were poorly forecast.
- In line with the larger than expected vehicle hour savings, journey time savings were almost 3 times the value expected.
- The final scheme costs were substantially higher (75%) than forecast – this has offset the additional journey time benefits from the scheme.
- No accident savings could be confidently attributed to the construction of the bypass.