

POPE of Major Schemes Summary Report

Scheme Title	A6 Alvaston Bypass
Opening Date	December 2003
POPE Stage	Five Years After

Scheme Description

The A6 Alvaston Bypass scheme opened in December 2003 and consists of a dual carriageway bypass around the district centre of Alvaston in Derby. The A6 through Alvaston previously suffered from heavy congestion and the associated noise and poor air quality. The new road joins the A6 Derby Spur at Elvaston to the A5111.

Objectives (Appraisal Summary Table)

Objective Achieved?

- | | |
|---|-----|
| • Reduce the number of accidents through Alvaston | No |
| • Reduce congestion in Alvaston | Yes |
| • Improve journey times and journey time reliability | Yes |
| • Reduce noise levels and improve air quality for properties on Shardlow Road | Yes |
| • Encourage regeneration of the area by enhancing road access to the south of Derby from the A50 and A52. | Yes |

Key Findings

- The objectives of the scheme were to reduce accidents, congestion, journey times and noise levels whilst improving journey time reliability and encouraging regeneration. These objectives have been met apart from a reduction in accidents which have actually increased.
- Traffic volumes on Shardlow Road (old A6) are higher than predicted, and on the A6 bypass they are lower than predicted. The overall corridor flow is as forecast which shows that less traffic has transferred to the new route as expected.
- Congestion at the A6/A5111 junction (Raynesway) could have discouraged traffic from using the A6 Bypass. However, this junction is currently subject to a developer led improvement scheme.
- The predicted local safety benefits have not materialised. The number of accidents has increased slightly on Shardlow Road despite the reduction in traffic since the scheme opened.
- The scheme has resulted in large journey time benefits in peak periods. Economically, these have outweighed the safety disbenefits and higher than predicted costs to give a high benefit to cost ratio. Since this scheme, the HA has introduced new estimating processes to improve the accuracy of cost forecasts.
- The scheme has reduced the severance due to lower traffic flows through Alvaston and the provision of suitable mitigation measures to prevent the bypass causing severance.
- Although planting was completed, at certain locations it has not reinforced local character and was commented on by some statutory bodies.
- The County ecologist commented that construction works had resulted to changes in the hydrology, with water levels dropping in the Great Crested Newt mitigation ponds.
- The impacts of urban schemes are more difficult to identify among all the other land use and transport changes that take place over a five year period, so any conclusions have to be caveated with this in mind.
- Missing appraisal information has limited the conclusions that this study has been able to make. The HA now has more robust data archiving systems with clarity of responsibility for archiving scheme data and documents stored electronically.

Summary of Scheme Impacts

Traffic

- Post opening traffic flows on Shardlow Road though Alvaston are in the region of 13,800 vehicles per day (vpd) which is a 45% reduction compared to the pre-scheme situation. However, this is considerably less than the 80% reduction predicted in the Environment Statement (ES).
- Traffic flows on the Alvaston Bypass are approximately 24,800vpd. This is between 17% and 30% lower than the prediction of 30,000-35,300vpd.
- The traffic forecasts accurately predicted a 54% increase in traffic through the corridor (A6 bypass and Shardlow Road) – observed figures show a 53% growth in traffic. The source of this traffic was mainly a re-routing of vehicles from adjacent routes, in addition to the background growth in traffic.
- There have been journey time savings to traffic using both the bypass and Shardlow Road, with peak hour savings of over 8 minutes in the AM northbound, and 6 minutes in the PM southbound. These are greater savings than predicted (by approximately 2 minutes)
- Congestion occurs at the roundabout at the northern end of the scheme (A5111 junction) during peak periods. However, this junction is currently being improved in a developer led scheme.

Safety

- The number of accidents over the wider area of Derby covering various routes into the city from the south has fallen from 187 accidents per year to 180. This reduction is not statistically significant and cannot be attributed to the scheme.
- The AST predicted a 9% accident reduction as a result of the bypass, however, only a 4% decrease has been observed over the wider area.
- The number of accidents in the local area has increased from 14 per year before construction to 24 per year since the scheme opened.

Environment

- The impact of the scheme on noise and local air quality is broadly as expected.
- Carbon emissions increased by 55% (+698 tonnes) as a result of the bypass, but this is within the predicted range.
- The impact of the scheme on landscape is as expected. Mitigation measures were implemented as part of the scheme but this has not been successful at Coronation Plantation where tree growth is not as expected.
- The impacts on heritage are as expected. There has been a moderate negative impact as three sites of archaeological value were lost due to the scheme. There are also slight visual impacts on Alvaston Castle and Grade 2 registered Historic Park.
- The biodiversity impacts of the scheme are worse than expected. This is primarily due to an underestimation of the population size of Great Crested Newts (GCN). Monitoring highlighted the failure of mitigation ponds and remediation works took approximately five years to be satisfactorily delivered. The GCN population is less than a tenth of the pre mitigation size.
- The impacts of the scheme on water is as expected, with the mitigation infrastructure in place and working to the satisfaction of the Environment Agency.
- The improved walking and cycling conditions in the vicinity of the scheme are reputedly well used and provide a good set of routes which are integrated with the existing public rights of way network. The scheme has therefore provided pedestrians and cyclists with more opportunity to improve their physical fitness.
- The impact of the scheme on journey ambience is as expected. Journey times and journey time reliability (as measured by 'route stress') have improved, but this is tempered by a slight increase in accident numbers.

Accessibility

- As expected, there has been no impact on option values as no new transport modes have been introduced or improved as part of the scheme.
- Severance has been reduced in Alvaston District Centre as expected due to reduced traffic volumes using this route.

Integration

- The scheme has contributed towards the Regional Plan, Derby and Derbyshire Joint Structure Plan and the Derby Joint Local Plan as expected.

Summary of Scheme Economic Performance

	Pre Scheme Forecast (2002 Prices)	Post Opening Reforecast (2002 Prices)
Journey Time Benefit	£37m	£148.8m
Safety Benefit	£17.8m	£-18.6m
Total 30 Year Benefits (PVB)	£54.8m	£130.2m
Costs (PVC)	£14.9m	£21.9m
Benefit Cost Ratio (BCR)	3.6	5.9

- The monetary benefits resulting from observed journey time savings are much greater than those predicted in the AST. This is a result of greater time savings than predicted
- Due to an increase in accidents in the local area, there was a monetary disbenefit of £18.6m.
- The present value cost (PVC) of the scheme is 47% higher than predicted. However, due to overall benefits also being considerably greater than predicted, the BCR was also higher than forecast.

This document summarises the findings of the five year after post opening evaluation study completed in August 2009.