POPE of Major Schemes Summary Report

Scheme Title	**A10 Wadesmill, High Cross and Colliers End Bypass**
Opening Date	October 2004
POPE Stage	Five Years After

Scheme Description

The A10 Wadesmill, High Cross and Colliers End Bypass is located north of the towns of Ware and Hertford, in Hertfordshire County. Key features of the scheme include:

- 4.5 miles of dual two lane carriageway starting north of Ware and Hertford and re-joining the old A10 at Standon.
- A road bridge over the River Rib.
- Crossing points at various bridges and underpasses, with one at-grade crossing.
- Lay-bys on both sides of the carriageway.

Objectives (from Appraisal Summary Table)	Objective Achieved?
To remove 90% of the existing traffic from the villages reducing severance	Yes
To reduce delays and disruption to through traffic by replacing single carriageway bottleneck with dual carriageway	Yes
To improve local air quality and reduce noise levels	Yes
To improve safety conditions on the A10 and for pedestrians and cyclists in the villages	Yes

Main Impacts

- All the scheme objectives have been met.
- Based on five years after opening data, the number of accidents has reduced at a statistically significant level.
- There have been no serious accidents in the villages since scheme opening.
- Residents reported improved safety in the villages, but some are concerned about the impacts of increased speeds.
- Outturn traffic flows are above predictions, due to increased traffic in the area from the expansion of Stansted Airport and re-assignment from the wider network that was not considered in the scheme appraisal.
- Predicted journey time savings were reasonably accurate.
- Journey time benefits are slightly less than predicted, but accident savings are considerably higher than forecast. With outturn costs higher than predicted, the outturn Benefit to Cost Ratio (BCR) is lower than expected.
- Air quality and traffic noise will have improved in the villages due to the transfer of traffic to the bypass.
- Environmental measures were given due regard and mitigation measures implemented as planned.

- The scheme has reduced community severance in the villages and improved conditions for pedestrians and cyclists.
- The scheme is consistent with and contributes to regional and local transport planning policies.

Summary of Scheme Impacts

Traffic

- Total traffic in the A10 corridor (bypass and old A10) has increased by 12%.
- Traffic in the wider area has increased by only 3%, rather than the 8% expected due to background growth, indicating that the additional traffic in the A10 corridor has re-routed from the wider area.
- Five years after opening the bypass is used by 27,350 vpd, an increase of 1,400 vpd since the one year after study.
- On the old A10 through the villages flows are 87% lower on an average weekday than before opening. This is a larger reduction than at the one year after stage, and is likely to be as a result of traffic calming measures introduced by the local authority. An extra 1,400 vehicles have been removed from the old A10, explaining the increase in bypass traffic.
- Traffic on local roads accessing the old A10 has decreased, indicating a reduction in rat-running by traffic that has re-routed following scheme opening to use the A roads.
- Heavy Goods Vehicle traffic has fallen by up to 95% on the old Road.
- Outturn traffic flows on the bypass and old road are above predicted flows. It is believed that the expansion of Stansted Airport passenger numbers has resulted in increased traffic in the area. Predicted do-minimum flows were reasonably accurate, within the guideline target values of +/ -15% for model validation defined within DMRB Volume 12. However, there were some large percentage differences between predicted do-something flows and observed after flows. In addition, there has been some re-assignment from the wider area that was not considered in the scheme appraisal.
- Whilst the economic forecasts were updated as the scheme appraisal progressed, the traffic growth forecasts from the airport were not updated and the level of growth of Airport traffic was underestimated. The schemes traffic model assumed that usage of the airport would rise from 1 million passengers per annum (mppa) to 8 mppa. However, by 2008 passenger numbers had reached 22.8 mppa.
- Journey times using the bypass compared to the old A10 have improved by around 2.5 minutes. The journey time savings are generally in line with or slightly higher than predicted. Some residents report reduced congestion on the old A10, but others still have concerns about congestion levels and perceived rat-running on local roads.

Safety

- The scheme shows a positive safety benefit.
- The number of Personal Injury Accidents has fallen from an average of almost 28 per year before the scheme opened to 12 per year over the five years since opening, a reduction of 16 accidents per year.
- The reduction in the number of accidents is statistically significant, but is less than predicted.
- On the old A10 and in the villages there have been no serious accidents since opening.

- Before the bypass was built, the accident rate on the old A10 was close to the national average for a rural A road. After opening, the accident rate is now less than the national average on the old A10 and half the national average for a road of this type on the bypass.
- Residents reported improved safety due to lower traffic flows for both drivers and non-motorised users. This has resulted in increased levels of walking and cycling.
- However, some residents are concerned about the impacts of perceived increased speeds.
- Residents raised some issues with the traffic calming measures introduced by the local authority after the opening of the scheme. There was some concern that drivers slowed when travelling across the measures but then speeded up.

Environment

- It is likely that local noise and air quality in the villages are generally as expected, due to the transfer of traffic to the bypass.
- Carbon emissions increased by 23% since scheme opening, compared to if the scheme had not been built. This is a worse case estimate as due to some re-routing of traffic there will also be decreases in emissions elsewhere on the network.
- Landscape planting has continued to establish since the one year after study and should fulfil its long term potential. The bypass has been de-trunked and Hertfordshire CC is now responsible for any ongoing maintenance and management.
- Biodiversity mitigation measures have been incorporated into the scheme as expected. However, there has been some vandalism including damage to the bat cave and breaching of animal exclusion fencing.
- The setting of listed buildings on the old road have benefitted from the significant reduction of through traffic.
- Archaeological evaluation identified valuable new evidence for human activity across a diverse landscape.
- As expected the bypass had a significant impact on the Grade 2* Youngsbury Park.
- Impacts on other environmental objectives are as expected and mitigation measures have been implemented as planned.

Accessibility

- The reduction in traffic in and between the villages has reduced community severance.
- The local authority has implemented a number of improvements in the villages including new street lighting, footway improvements, new bus stops, lower speed limits and traffic calming measures further improving conditions for residents.
- Bus service and passengers have benefited from more reliable journey times and better waiting facilities.
- Conditions for non-motorised users will have benefited considerably from reduced traffic levels. Significant proportions of residents reported they are making more journeys on foot and bicycle, but there were also some concerns with perceived speeds on the old A10.

Integration

- The scheme has been beneficial in achieving policy objectives at a national, regional and local level**,** including: 1991-2011 Structure Plan for Hertfordshire and Hertfordshire Local Transport Plan (LTP) (2001/02 - 2005/06)

Summary of Scheme Economic Performance

	Pre Scheme Forecast (AST) (2002 Prices, discounted to 2002)	Pre Scheme Re-forecast (2002 Prices, discounted to 2002)	Post Opening Re-forecast (2002 Prices, discounted to 2002)
Journey Time Benefit	£86.3m	£86.3m	£83.2m
Safety Benefit	£20.3m	£47.6m	£37.9m
Total 60 Year Benefits (PVB)	£106.6m	£133.9m	£121.1m
Costs (PVC)	£23.7m	£23.7m	£40.8m
Benefit Cost Ratio (BCR)	**4.5**	**5.6**	**3.0**

- A lack of data and information from the scheme appraisal required POPE to be based on a number of assumptions. As a result, less confidence can be placed on the comparison of predicted and actual scheme benefits.
- Details of how the costs and benefits in the Appraisal Summary Table (AST) were calculated were not available to POPE. It has been assumed that the figures in the AST are in 1994 prices (in line with WebTAG guidance at the time the AST was produced) and these have been updated to 2002 prices and values.
- The monetary journey time benefit is slightly lower than forecast but accounts for the majority of benefits.
- Accident benefits are almost double the AST forecast level. This is despite accident savings being lower than forecast. This is due to the cost of an accident being much lower and a higher discount rate being applicable at the time of the appraisal. In addition, the observed accident savings are calculated using the PAR approach, which are not directly comparable with the forecast.
- As a result, to allow a more direct comparison between the forecast and outturn, the accident savings in the AST have been updated with the latest accident costs. This gives an AST re-forecast safety benefit that is higher than the outturn benefit.
- The outturn scheme cost is almost 70% higher than the predicted cost.
- The benefit to cost ratio us lower than predicted, but represents good value for money.

This document summarises the findings of the five years after post opening evaluation study completed in November 2010