POPE of Major Schemes Summary Report

Scheme Title	**M6 Carlisle to Guards Mill Improvement**
Opening Date	**December 2008**
POPE Stage	**Five Years After**

Scheme Description

The M6 Carlisle to Guards Mill Improvement scheme is a Highways England (formerly the Highways Agency) major scheme to the north of Carlisle which opened in December 2008. The purpose of the scheme was to address a break in motorway network between the M6 in England and the A74(M) at the Scottish border and improve the safety record and journey time reliability. This section was a dual carriageway, known as the A74, and following scheme implementation the new route is the M6 J44 to J45, with an additional local access road referred to as the All Purpose Route (APR).

Objectives (Non-Technical Summary, February 2005)	Objective Achieved?
Reduce the number of collisions on the route	✓
Provide more carriageway space for emergency services attending collisions	✓
Provide more carriageway space to enable traffic flows to be maintained following a collision	✓
Reduce driver frustration	✓
Improve accessibility for users	✓
Make journey times more predictable	✓

Summary of Scheme Impacts

Traffic

- Flows on the new M6 are 21,000 vpd (northbound) and 20,900 vpd (southbound) which are slightly lower than flows of 21,400 (northbound) and 21,200 (southbound) on the old A74. These flows are however in line with reductions experienced between M6 J42 to J44 during the same period.
- When the flows on the APR and M6 are combined, the total flows have increased by 1,650 (4%) vehicles per day between the before scheme construction and Five Years After (FYA) periods.
- Traffic flows on the M6 were forecast to increase by 10% across both directions. Observed flows show this forecast to be significantly overestimated, with 16% fewer vehicles than forecast. Observed traffic flows on the APR show the forecast underestimated those flows.

- Journey times have decreased by an average of 47 seconds for northbound traffic and 31 seconds for southbound traffic. The upgrading of the former A74 to motorway standard involved removing direct access points, which alongside the provision of an additional lane will have contributed to improving journey times.
- Journey times are relatively consistent throughout the day in both directions which therefore suggests good journey time reliability. A reduction in collisions and the provision of an additional lane allows traffic flow to be maintained during incidents and therefore, the scheme is likely to have reduced the frequency and length of delays caused by collisions.
- Journey time forecasts were highly accurate and the difference between the observed and forecast journey times is not higher than 7 seconds across the day post opening.

Safety

- Across both the M6 J44-45 and the APR, there has been an annual saving of 2.7 collisions between the before scheme construction and FYA period. This includes national background reductions in collisions.
- Severity of collisions has reduced by 2% between the before scheme opening and after scheme opening periods.
- Analysis of collision locations shows that collisions at the locations of direct access points from the A74 to local settlements, which have been removed following the upgrade to motorway standard, have reduced at FYA.
- Taking traffic flows into account, on the M6 J44 - 45, the FYA observed collision rate is half that seen during the period prior to the scheme's construction, in line with forecasts.
- As part of the scheme and upgrading of the A74 to the M6, emergency telephones have been installed between J44 and J45, improving personal security along the route.

Environment

- Based on traffic flows, impacts on noise and local air quality are likely to be better than expected.
- There has been an increase in carbon emissions after scheme opening periods due to higher travelling speeds.
- Landscape planting is considered to be establishing well at FYA, although some parts are not as well established as others. Subject to ongoing successful establishment, it should reach its landscape objectives for screening and integration into the local landscape by the design year in most locations.
- New habitats including wet woodland, habitat ponds and reptile sites in Matterdale Forest are considered well established. The overall biodiversity impacts are as expected.
- The APR provides a direct link between Carlisle to Gretna. The route is widely used by cyclists.
- Journey ambience in terms of views from the road, driver stress and traveller care have all been improved as expected.

Accessibility and Integration

- With regards to option values, there have been no changes or improvements to public transport, however, the APR joins to the National Cycle Network Route 7 and 10 and is considered a more attractive and safe route for cyclists compared to the old A74. As a result, the impact of the scheme on options values is determined as slight beneficial.
- The scheme is aligned with local, national and regional policies and receives a score of beneficial.

Economy

All monetary figures in 2002 Prices and values		Forecast	Outturn Reforecast
Investment Cost in present value (PVC)		**£41.4m**	**£37.0m**
Journey Time Benefits		£83.4m	£82.4m
Vehicle Operating Costs		-£48.6m	-£46.8m
Safety Benefits		£9.0m	£18.5m
Future Maintenance Benefits		£42.8m	£42.8m
Present Value Benefit		**£86.6m**	**£96.9m**
Indirect Tax		£38.3m	£36.9m
Benefit Cost Ratio (BCR)	**Indirect Tax impact treated as a Cost**	**27.9**	**n/a**
Benefit Cost Ratio (BCR)	**Indirect Tax impact treated as a Benefit**	**3.0**	**3.6**

- Journey time benefits are £82.4 million, 1% less than the £83.4 million forecast.
- Outturn safety benefits are more than double the forecast at £18.5 million. This can be partially attributed to the forecasts predicting higher collision numbers for the before scheme opening period than was observed for the before period at FYA.
- The overall Present Value Benefit (without indirect tax) is £96.9 million, which is 12% higher than the forecast of £86.6 million.
- The total investment cost for the scheme was £103.5 million (2002 prices, not discounted), 18% less than the £125.8 million forecast.
- Had this scheme not been built at this time it would, as a minimum alternative have been necessary to replace the Mossband viaduct where the road crosses the West Coast mainline railway. This means that the net cost of the scheme as reflected in the PVC is much lower than the investment cost of building the full motorway scheme.
- Following the current appraisal approach in which the indirect tax impact is treated as benefit, the outturn BCR of 3.6 is higher than forecast and indicates that the scheme is delivering high value for money.
- With regards to wider economic benefit, the scheme links to the Carlisle Northern Development Route (CNDR) and Kingmoor Park, which are both key strategic economic priorities for Carlisle. Observations from the site visit found that there were vacant units and new businesses moving to Kingmoor Park but no quantifiable data could be acquired regarding occupancy rates since the scheme opened. The scheme has therefore had a neutral impact on wider economic benefits.

This document summarises the findings of the Five Years After (FYA) post opening evaluation study completed in July 2015