POPE of Major Schemes Summary Report

Scheme Title	**M25 Jn 12 – Jn 15 widening**
Opening Date	December 2005
POPE Stage	Five Years After

Scheme Description

The M25 Jn 12 – Jn 15 widening scheme opened in December 2005 and widened a seven mile section of the M25 between the M3 and M4, the majority of which lies within the county of Surrey. The key features of the scheme are:

- Widening from 4 lanes to 6 in each direction between Jn 14 – Jn 15;
- Widening from 4 lanes to 5 in each direction between Jn 12 – Jn 14;
- Widening from 3 lanes to 4 in each direction through Jn 13 and Jn 14; and
- Extensive remodelling and new slip roads at Jn 14.

Objectives	Objective Achieved?
To cater for future traffic growth	Yes
To reduce traffic congestion and journey times	Yes
To improve journey time reliability	No
To reduce traffic diverting onto less suitable roads.	Yes

Key Findings

- Traffic volumes using the scheme have been lower than forecast and this was primarily due to overestimation of background traffic growth in the original appraisal forecasts, and the impacts of the economic downturn reducing traffic flows since the latter part of 2008;
- The traffic forecasting for the scheme did not include the impacts of the opening of Terminal 5, which had not yet been approved at the time of the appraisal. Traffic growth associated with the new terminal has meant that outturn traffic volumes are closer to forecast than they would have been had the terminal not been built, or had the forecasts included its impacts;
- Journey times in the southbound direction along the scheme length are marginally longer at Five Years After opening than they were before the scheme, however time savings of up to four minutes in the northbound direction more than compensate for this. Two-way journey time savings were roughly in line with predictions;
- Journey time reliability (consistency of journey times during the same periods of the day) has not improved since the scheme opened;
- The appraisal of the scheme did not forecast accident savings and this is in line with current guidance. However, the scheme has resulted in statistically significant accident savings along the scheme length, and over a wider study area including nearby motorway links, trunk and local roads;
- The scheme has resulted in decreased traffic volumes on other trunk and local roads in the vicinity of the scheme, suggesting that rat-running has reduced in the area;
- Monetary benefits of the scheme have been lower than predicted despite including safety benefits derived from the reduction in accidents. This is because traffic volumes have been lower than forecast. Costs of the scheme were reasonably in line with forecast, and the outturn BCR slightly lower than forecast; and
- Based on traffic flows which are less than expected, there is potential for local air quality to have improved and this would be better than expected.

Summary of Scheme Impacts

Traffic

- Between Jn 14 – Jn 15 where the carriageway has been widened to six lanes in each direction, average weekday traffic flows at Five Years After (FYA) have increased by 16% to 215,000. Between Jn 12 – Jn 13 and Jn 13 – Jn 14 traffic volumes have increased by 5% and 8%, respectively. This is greater than growth experienced nationally on motorways, and in part may be due to the scheme, but largely due to the opening of Terminal 5 in 2008, as significant increases in volumes have been seen between One Year After (OYA) and FYA evaluation;
- Traffic volumes on the M3 have reduced by some 10%, indicating likely reassignment of east/ west traffic now staying on the M25 to join the M4 into central London. Traffic volumes on the A30, A4, A3113 and A308 have reduced since the scheme opened indicating reassignment from these routes to the M25. This is considered to indicate a reduction in rat-running on the local road network around the scheme;
- HGVs using the widened sections have increased by more than the trends experienced nationally for motorways indicating that the scheme may have resulted in increased HGV usage on these sections of the M25;
- As well as journey time savings of up to four minutes in the northbound direction of the scheme, journey time savings have also been observed on the motorway links adjoining the scheme at the M4 interchange, suggesting that benefits extend beyond the scheme itself;
- The slight increase in journey times southbound is largely derived from the section between Jn 12 – Jn 13, and it is considered that this is due to a pinch-point where the widened section meets the narrower M25 at Jn 12/M3 interchange; and
- At FYA, northbound journey times across the day are generally less variable than before the scheme opened, however southbound journey times across the day are more variable. This is due to the pinch-point or bottle-neck where the widened 5 lane scheme section meets the M3 junction which has 3 lanes through it, and the M25 south of Jn 12, which was not widened. Journey time reliability since opening has not improved i.e. are not more consistent for journeys at the same time of the day.

Safety

- At FYA, there has been a statistically significant annual average saving of 32 personal injury accidents (PIAs) along the scheme extent. This is a 30% reduction on the number of PIAs occurring in the five years prior to scheme construction. There has also been a statistically significant reduction of 154 PIAs (20%) per year over a wider area covering nearby motorway links, trunk and local roads;
- Regarding the wider area accident saving, it is likely that at least some of the saving is due to reduced traffic flows on the surrounding network, and reduced rat-running helping to improve safety for local traffic. There has been a reduction in PIAs specifically on the A3113, A30, A4 and A308, which helps to supports this hypothesis;
- There is evidence to suggest that the number of PIAs involving pedestrians over a wider area surrounding the scheme may have reduced following the opening of the scheme. This may be linked to the reduction in rat-running on the surrounding road network; and
- At FYA, Jn 13 – Jn 14 and Jn 14 – Jn 15 have accident rates (PIA/mvkm) which are below the national average for a carriageway of their type. The accident rate between Jn 12 – Jn 13 at FYA is still above the national average, however a notable reduction has been observed since the scheme opened.

Environment

- Impacts on environmental sub-objectives have been as expected with the exception of lighting. Impacts of lighting are considered to have been worse than expected for properties near to the scheme;
- Air quality impacts are better than expected due to traffic flows being lower than forecast; and
- Impacts on the water environment are likely to be better than the moderate-adverse impact expected as there has been no indication that the water mitigation is performing other than as intended.

Accessibility

- The scheme has resulted in reduced traffic flows on some of the local roads surrounding the scheme, which will have helped improve accessibility to public transport services and waiting environment in the area, and made more sustainable modes of travelling such as cycling and walking more appealing; and
- The scheme has not created additional severance, as the widening was within the highway boundary, and all footpaths, bridleway and grade separated junctions have remained intact and on their existing alignment.

Integration

- The scheme is considered to have had a neutral impact on policy integration overall, despite Slough and Royal Borough of Windsor and Maidenhead Local Plans being opposed to the scheme; and
- In relation to integration with other modes of transport, the scheme may have eased access to Heathrow Airport for some journeys, however the forecast of improved 'operational effectiveness of radial routes and M25 in SW quadrant' in the scheme's Appraisal Summary Table (AST) remains difficult to confirm.

Summary of Scheme Economic Performance

	Pre Scheme Forecast[1]	Outturn
Journey Time Benefits	£735.9m	£634.6m
Safety Benefits	£0m	£67.7m
Total PVB	£735.9m	£702.3m
PVC	£127.9m	£147.4m
BCR	**5.8**	**4.8**

[1] Low Growth forecast sourced from Stage 3 Assessment Report (SAR)
Note: Indirect Tax excluded as was not appraised in forecast,
All figures in 2002 prices discounted to 2002

- At FYA, Post Opening Project Evaluation (POPE) has reforecast the scheme's 30 year monetary benefits to be £634.6m (vehicle hours) and £67.7m (safety), based on a Low Case scenario, which is likely to be a conservative estimate;
- Even with the safety benefits included, these are lower than the Low Growth forecast benefits provided in the Stage 3 Assessment Report (SAR), and this is likely to be because traffic flows are lower than forecast, and the appraisal model covered a wider area not fully captured by this POPE evaluation;

- Outturn scheme costs at FYA were £147.4m, 15% higher than forecast. Given the scale of the project, the length of time between the forecasts and the opening of the scheme (nine years) and the conversion of different price bases involved, this is considered to have been fairly accurate; and
- Although not a specific objective of the scheme, the scheme has catered for traffic growth associated with the expansion of Heathrow Airport (primarily with the opening of Terminal 5) which supports thousands of jobs across the country.

This document summarises the findings of the Five Years After (FYA) post opening evaluation study completed in October 2011.