

POPE of Major Schemes Summary Report

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|---------------------|---------------------------------|
| Scheme Title | M25 Junctions 27 to 30 Widening |
| Opening Date | May 2012 |
| POPE Stage | One Year After |

Scheme Description

The M25 Junctions 27 to 30 (section 4) widening scheme is a Highway's Agency major project which was completed in May 2012. The scheme section runs between the M25 at Junction 27 near Epping to Junction 30 near Aveley. The scheme widened this section of the motorway from three to four lanes in both directions along the length of the route.

Prior to the scheme, this section of the M25 operated as a three lane motorway in each direction with full width hard shoulders. This section suffered from increasing congestion levels and unpredictability of journey times. The scheme is part of an overall strategy for the M25 comprising a series of widening schemes and smart (managed) motorway schemes.

In addition to widening, gantries were erected along the M25 between junctions 27 and 30. This part of the M25 has operated as a controlled motorway (mandatory variable speed limits to reduce stop-start congestion during busy periods) since March 2014.

Scheme Objectives

| Objectives | Objective Achieved? |
|---|-----------------------|
| Deliver trunk road improvements | ✓ |
| Improve journey time reliability | ✓ |
| Improve safety | Too early to conclude |
| Reduce congestion | ✓ |

Key Findings

- Comparing pre and post opening data shows that traffic flows on the M25 between junctions 27 and 29 have increased by 1% whereas the section between junctions 29 and 30 has seen a 1% reduction.
- Observed traffic flows are consistently lower than the forecast traffic flow changes. This is due to an over estimation of background traffic growth in the appraisal. The general pattern of traffic flow changes is consistent between forecast and observed.
- Average journey times along the scheme section have reduced compared to pre-scheme, though the reduction in journey times has not been as high as was forecast in the appraisal.
- Some improvement in journey time reliability has been observed since the scheme opened.
- There has been a 14% (13.8 collisions per year) reduction in the annual average number of collisions observed in the collision data, although this is not statistically significant.
- Economic benefits are lower than forecast due to the observed journey time benefits being lower than forecast.

Summary of Scheme Impacts

Traffic

- Since the scheme opened, the average weekday traffic volumes on the M25 have increased by 1% between junctions 27 and 29, and a reduction of 1% has been observed between junctions 29 and 30.

- Average weekday peak hour traffic flows were predicted to increase in the range of 4% to 7% along the scheme section. This can be compared to observed changes in peak hour traffic flows of between -1% and 4%.
- The scheme's impact on traffic patterns was reasonably consistent with the forecast. Having said that, traffic flows are generally slightly lower than forecast.
- Since scheme opening, average journey time reductions in the AM (morning) and interpeak periods have been in the range of 1% to 2%. The reduction in journey times is greater in the PM (evening) peak with reductions of between 4% and 13%.
- The scheme appraisal forecasted an average journey time saving of one minute whereas the observed savings are between 13 and 33 seconds.
- Following the scheme's introduction the standard deviation of journey times along the scheme has reduced - particularly in the busiest hours. This provides an indication that journey time reliability has improved as a result of the scheme.

Safety

- The annual average number of collisions along the scheme's section and the wider study area has seen a 14% and 5% reduction respectively (after accounting for the background reduction in collisions which has occurred in the UK over recent years).
- The appraisal for the scheme forecast an increase in collisions with a net expected increase in the opening year of 27.2 collisions. The observed collision data has shown an annual average net saving of 13.8 collisions since the scheme opened.
- The severity of collisions has increased slightly since the scheme opening for the M25 scheme section, but remains consistent across the wider study area. This is an early indication only at this One Year After stage since this is based on a small sample size and a clearer picture will be available at the Five Years After stage.
- The small amount of data available post opening shows a positive benefit for safety in the study area. However, statistical analysis of the change in collision rates shows that at present the improvements in safety are not statistically significant- indicating that the forecast may be inaccurate, although a longer period of data is required before drawing firm conclusions on accuracy.

Environment

- The noise and local air quality impacts of the scheme are generally as expected, whilst greenhouse gas increases are better than expected due to lower than forecast traffic flows.
- Landscape impacts are worse than expected due to the majority of planting not being as established as would have reasonably been expected at this stage.
- All aspects of the heritage mitigation measures have been addressed.
- Biodiversity impacts are as expected, although unless the maintenance regime undergoes required adjustments in the near future, it is unlikely that habitats will develop in the long term as intended.
- Water quality and drainage impacts are as expected.

Accessibility and Integration

- As expected, the scheme has not had an impact on the provision of public transport interchange.
- This scheme integrates well with regional and national transport policies and most local policies.

Summary of Scheme Economic Performance

| All monetary figures in 2002 Prices and values | Forecast | Outturn Re-forecast |
|---|----------------|---------------------|
| Journey Time Benefits | £638.9m | £204.5m |
| Vehicle Operating Costs | £-19.1m | £-2.4m |
| TEE impacts during construction | £6.7m | |
| TEE impacts during maintenance | £56.2m | |
| Safety Benefits | £-80.1m | - |
| Journey Time Reliability | £88.9m | £77.6m |
| Noise | £-0.1m | |
| Carbon | £-4.8m | £-0.7m |
| Total Present Value Benefits (PVB) | £686.7m | £341.8m |
| Investment costs (Construction) | £377.7m | £272.4m |
| Future Maintenance costs | £-23.9m | |
| Indirect Tax Revenue | £-40.5m | £-5.1m |
| Total Present Value Costs (PVC) | £313.3m | £243.3m |
| Benefit Cost Ratio (BCR) Indirect Tax as Cost | 2.2 | 1.4 |
| Benefit Cost Ratio (BCR) Indirect Tax as Benefit | 2.1 | 1.4 |

- The outturn reforecast journey time benefits are 32% of that forecast owing to lower than expected traffic flows and journey time savings.
- The scheme was not expected to reduce the number of collisions over the 60 year appraisal period. Whilst the observed collision data shows a slight reduction in collisions, statistical tests show that the change observed at this stage is not significant. As such the monetary safety benefits are reforecast to be £0m.
- The outturn investment cost is 28% lower than forecast.
- The outturn Benefit to Cost Ratio (BCR) is lower than forecast, despite the cost being lower than forecast, owing to the much lower than expected benefits.
- The scheme is likely to facilitate wider economic benefits through increased capacity, improved journey times and reliability, although it is too early to quantify at this stage.

This document summarises the findings of the post opening evaluation study completed in December 2014.