



National Audit Office

**REPORT BY THE
COMPTROLLER AND
AUDITOR GENERAL**

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Highways Agency

Procurement of the M25
private finance contract

Summary

Introduction

1 The Highways Agency (the Agency), established in 1994, is an executive agency of the Department for Transport (the Department). The Agency is responsible for operating, maintaining and improving England's network of motorways and all-purpose trunk roads. Its objectives include managing traffic, tackling congestion, providing information to road users, and improving safety and journey time reliability.

2 The M25, completed in 1986, forms a 125-mile orbital route some 20 miles from the centre of London. The Dartford Crossing, two tunnels and a bridge crossing the Thames at Dartford, completes the loop. The M25 is the major route around London, carrying international traffic between entry points and the rest of Britain. It also forms the hub of the English motorway system, and serves as a commuter route for local traffic.

3 The Agency needed a solution to high levels of congestion and poor journey time reliability on the M25. In May 2009, the Agency signed a 30-year private finance contract with Connect Plus. The contract requires Connect Plus to widen two sections of the M25 (around 40 miles), and to refurbish the Hatfield Tunnel. Connect Plus must also operate and maintain the M25, including the Dartford Crossing, plus 125 miles of connecting roads at junctions. It is also required to design a solution for congestion for two further sections of the M25 (around 25 miles). The contract has a present value cost of £3.4 billion. Of this total, the widening of the initial sections has a present value construction cost of £900 million and delivers £2.3 billion present value benefits.

Figure 1 shows the organisations involved in the contract.

Scope of the report

4 This report focuses on the Agency's decision-making, to assess whether it has procured a value for money solution to congestion and poor journey time reliability on the M25. It had a number of key decisions to make including whether to:

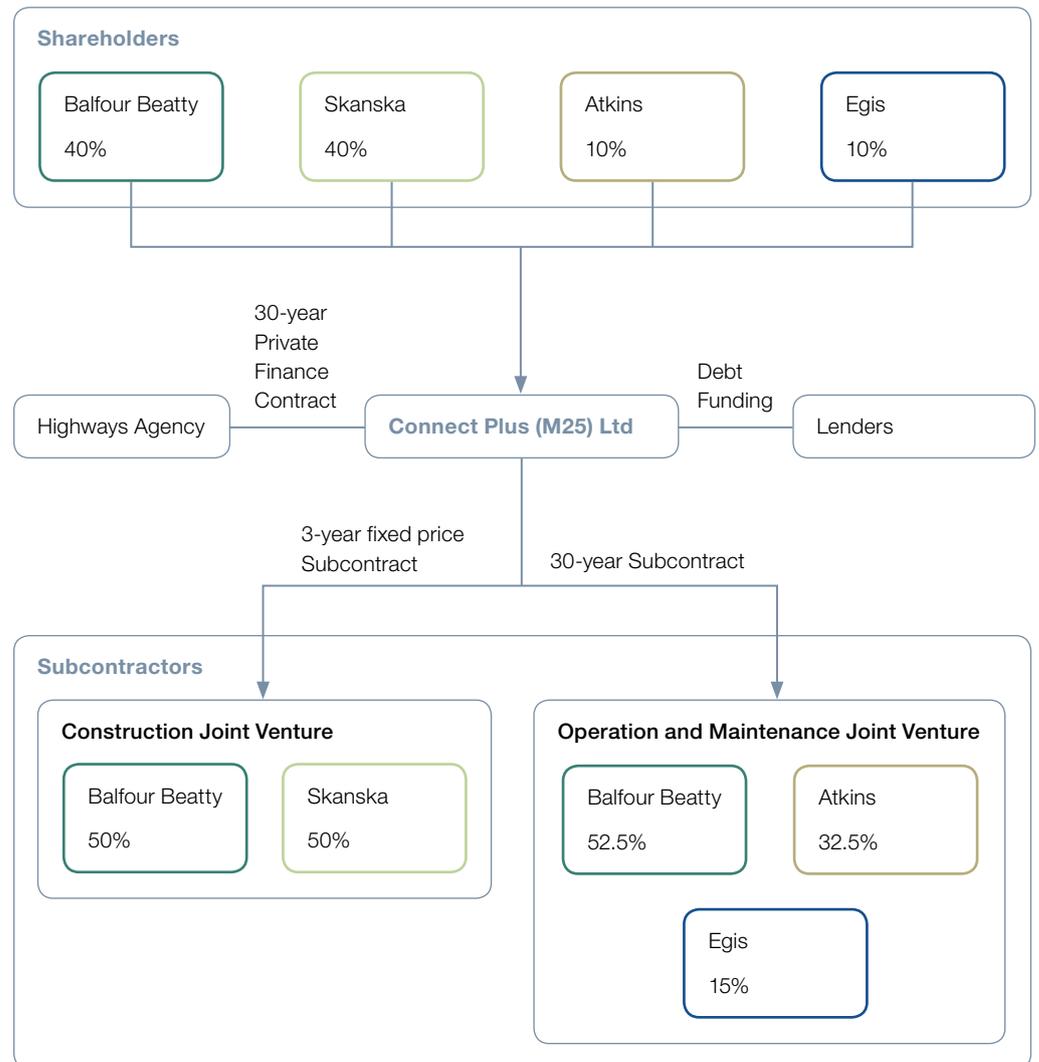
- deal with congestion through road widening or hard shoulder running;
- use private finance or conventional procurement; and
- let the contract during the credit crisis.

We have considered both:

- the decisions which the Agency took based on the evidence it had available at the time it made those decisions (Appendix 1); and
- whether the Agency had the right information to make optimum use of taxpayer resources.

Figure 1

Organisations involved in the M25 contract



Source: National Audit Office analysis of Highways Agency data

5 We used the following value for money criteria:

- Did the Agency consider all options and select a value for money solution in deciding to widen the road using a private finance contract? (Part One)
- Did the Agency manage the procurement of the widening deal effectively? (Part Two)
- Did the Agency give appropriate consideration to alternative solutions? (Part Three)

6 Our study methodology can be found in Appendix 2.

Key findings

Decisions leading to the procurement of the contract

7 The Agency's decision to widen the M25 has the potential to deliver benefits.

The M25 suffers from high levels of congestion and poor journey time reliability, and the Agency's objectives include improving these. It intends the widening to increase average speeds in the opening year by 10 miles per hour, and reduce the accident rate by 1.5 per cent. These benefits are assessed as approximately £2.3 billion.

8 In 2003, the Agency and the Department decided to widen the M25 rather than adopting a flexible procurement strategy which could also accommodate other solutions. The Agency wanted a clear solution to address congestion on the M25. At that time it had insufficient evidence of the effectiveness of alternatives to widening, such as hard shoulder running. Hard shoulder running allows drivers to use the hard shoulder at times of peak congestion, providing additional capacity, although this is likely to be less than that provided by widening as speed limits are needed to ensure safety. This technique, which was first trialled in Europe in 1996, is cheaper as it requires less construction; it also delivers fewer benefits. The Agency had announced its intention to trial this technique in 2001 and, in 2003, let a contract for the development of a trial section on the M42. A procurement strategy for the M25 project that kept both widening and hard shoulder running as serious options would have given more scope for a full assessment of both solutions before a contractual commitment.

9 We reported in 2004 that the Agency had been slow and too risk-averse in testing new congestion measures. We recommended that the Agency should carry out more trials at more sites to increase its chance of success with new methods.¹ The Agency continued its trial of hard shoulder running but, as it did not have the trial results, it decided in 2005 to specify a road widening solution when it advertised the procurement competition for the M25 contract.

Management of the procurement: the widening project

10 The Agency ran a generally effective and competitive procurement for the widening deal it advertised in 2005. The project was attractive to the market due to its size and the opportunity to operate a major road system for 30 years. The Agency consulted with industry, responded to feedback and learned lessons from earlier procurements.

¹ *Tackling congestion by making better use of England's motorways and trunk roads*, HC 15, November 2004.

11 There was, however, some slippage in the timetable. The Government announced its intention to proceed with the widening of five sections of the M25 in July 2003 and asked the Agency to carry out further development work. The schemes entered the targeted programme of improvements in April 2004. The Agency's initial 2004 timetable anticipated construction of the first section starting in May 2007 which we consider was a reasonable timetable. When the Agency drew up its 2004 timetable it had not decided on the procurement strategy. During industry consultation in May 2005, following its decision to widen four of the sections using private finance, the Agency revised the date when it would award the contract and construction would start to May 2008. The Agency said that this start date reflected a reasonable programme for the procurement. The contract was not, however, let until May 2009. The delays in both preparing and executing the procurement before the credit crisis added around 18 months to the Agency's initial 2004 timetable.

12 Exposing the project to risk for longer than was expected resulted in the Agency encountering the credit crisis which added £660 million to the price. The credit crisis in 2008, which the Agency could not have foreseen, made raising finance difficult. When it arose, the Agency worked hard to obtain financing for this project. This helped to deliver market confidence for completing the private financing of subsequent projects across government. As we have recently reported², these projects bore much higher financing costs than before the credit crisis. The delays, which we consider could have been avoided, exposed the project to risk for longer than anticipated. As a result, the present value cost increased from £2.7 billion in May 2008 to £3.4 billion by contract award in May 2009, mainly due to the higher financing costs banks required during the credit crisis. We estimate that the Agency may recover around £100 million if the project is refinanced, but there is no certainty this will occur. The Agency hopes to achieve a higher level of gains through refinancing.

13 The Agency used a benchmark cost model but did not intend this to be an estimate of the cost of a privately financed solution. In January 2008, the Agency assessed quality compliant bids against a benchmark cost model. The Agency's cost model was up to 27 to 43 per cent higher than the bids. The main difference was that operational and maintenance costs in bids from the two remaining bidders were substantially lower than the Agency's lowest estimate. While the Agency satisfied itself that the bids were robust and in line with market rates, it did not, however, produce an analysis of the reasons for the differences between the bids and its cost model. In our experience, an accurate 'should-cost' model for private finance projects can help in planning financial resources and bid negotiations. It can also identify ways in which comparison with a conventional procurement can be improved.

2 *Financing PFI projects in the credit crisis and the Treasury's response*, HC 287, July 2010.

14 The savings between the privately financed widening deal and the same project conventionally procured are not as clear cut as the Agency calculated.

Before closing the deal, the Agency compared the present value cost of the contract (£3.4 billion) against its updated estimate for procuring the widening conventionally through multiple contracts (£3.4 billion-£4.2 billion). The comparator was updated from the Agency's 2004 estimate, which was £3.6 billion in equivalent prices, drawing on information in its benchmark cost model. We are concerned about the credibility of the comparison because the Agency had not taken up the earlier opportunity to investigate the difference between the bids and its benchmark cost model. Consequently, the updated comparator, in our opinion, was not a sufficiently robust guide to likely costs under a conventional procurement.

Management of the procurement: consideration of alternative solutions

15 The Agency, taking account of the initial result of trials for hard shoulder running and acting on legal advice, did not pursue potentially cheaper variant bids for this technique.

Private finance projects usually define the outputs required allowing flexibility over the solution. The Agency, in its 2005 procurement advertisement, had specified only widening. It considered it was unable to ask for bids on hard shoulder running until it had obtained robust trial data and identified appropriate operating and engineering standards. In 2007, one of the bidders wanted to submit a hard shoulder running option. The Agency was initially interested in exploring this option with all bidders, but decided not to. Its decision was based on: legal advice that such a change risked exposing the Agency to legal challenge; and results from the initial trials of hard shoulder running on the M42 which the Agency considered did not give compelling evidence for using hard shoulder running.

16 The initial trials indicated that there would be a loss of benefits from hard shoulder running, compared to widening, although there was variation in these results.

Using the technique at 60 miles per hour would secure 80 per cent of the benefits of widening, but at 50 miles per hour only 35 per cent. The Agency did not have a detailed assessment of the benefits that would arise when using the technique on the M25 sections that it was widening. It doubted, however, the technical suitability of hard shoulder running for one of the two sections which had high traffic flows. The Agency reached a similar conclusion in 2008 when the new Secretary of State requested reassurance from the Agency that motorway widening remained the best solution. This assessment also took into account calculations (which we consider cautious) that this new approach would not deliver cost benefits and concern about the adverse consequences of aborting the procurement.

17 In July 2008, seven years after it had announced its intention to trial hard shoulder running, the Agency was finally satisfied with the general benefits and savings potential of this approach which it is now putting into use.

In 2009, shortly before letting the widening contract, a programme of hard shoulder running became part of the Department's policy for managing motorways and major trunk roads. The value of this work under way or planned on ten major roads is £3.7 billion. Although the

Agency kept under review the possibility of using the approach for the two sections of the M25 targeted for widening, the Agency continued to doubt that the approach was technically suitable for one of these sections. The Agency now plans to use the approach to relieve congestion and improve journey time reliability on two other sections of the M25.

18 We consider that, through a faster assessment of the costs and benefits of hard shoulder running and a more flexible procurement approach, the Agency could have adapted its project to give serious consideration to the technique.

The Agency was never in a position to consider seriously hard shoulder running as an alternative to its planned widening of the M25. To have seriously considered hard shoulder running during the procurement, the Agency would have needed to: complete earlier its general assessment of hard shoulder running; consider the cost and benefits of using it on the M25; and keep its options open longer. Even in late 2008 and early 2009, when the Agency had satisfied itself on the general benefits and savings of hard shoulder running, we believe it should have given greater consideration to hard shoulder running in its final decision to let the widening contract.

19 The Agency did not thoroughly assess the savings that an acceptable conventionally procured hard shoulder running solution could provide, savings we estimate as potentially ranging from £400 million to £1.1 billion.

This range of possible savings compared to the privately financed widening of the M25 represents 12-32 per cent of the widening contract price. Savings would have been available through lower construction and financing costs. The top end of our savings scale is reached if the Agency's lowest estimate of conventionally procured operation and maintenance costs is reduced by £400 million to match the costs expected by Connect Plus (Appendix 3). The Agency considers that these efficiencies in operation and maintenance costs could not have been achieved through short term conventional contracts.

Management of advisers

20 We consider that the Agency was overly reliant on its advisers. The Agency spent £80 million (7.5 per cent of the capital value) on advice and support from external organisations, including £45 million on technical advice of which £24 million related to design works. The Agency has not reviewed the total costs of its procurement to identify lessons for future projects. The Agency continues to rely on advisers for contract management support and documentation about the procurement. The Agency's reliance on advisers has built up over time and in part reflects insufficient commercial and technical skills within the Agency. The Agency risks advisers controlling projects and having little incentive to transfer knowledge back to the Agency. The Agency is now addressing these issues.

Securing the benefits of the widening

21 **Maintaining the long-term benefits of the project depends on completion of separate demand management techniques which have taken a long time to develop.** Previous experience shows that new road capacity rapidly fills, reducing the benefits of making more road available. When the Agency committed to widening the road it was approved on the understanding that measures to manage demand would be developed in parallel. However, in 2010 the Agency is still testing the viability of the demand management measures it started considering in 2003. It does not expect results until May 2012, just before the planned completion of the first sections of widening. The Agency sees the demand management project as delivering additional benefits in reducing M25 congestion at additional costs. We believe, however, there are risks to maintaining the long-term benefits of the widening project and its potential value without the early implementation of demand management.

Value for money conclusion

22 The Agency's aim was to relieve congestion and improve reliability through securing a private sector partner to widen the M25. It ran a generally effective and competitive procurement in pursuit of that aim and worked with Connect Plus to obtain financing at market rates during the difficult financing conditions in early 2009. Throughout, the Agency assessed the value for money of the project based on the available information relevant to its specified objective of widening the M25. We note, however, that delays in preparing and finalising the project exposed the project to risk for 18 months longer than expected with the result that it incurred higher financing costs in the credit crisis. This increased the net present cost of the deal by £660 million (24 per cent) to £3.4 billion.

23 In considering the Agency's approach, we looked at whether the Agency could reasonably have been expected to achieve a better outcome, in terms of the use of public funds, to secure increased capacity on the M25 at times of peak congestion. We believe that the Agency could have achieved a materially better value for money outcome by a more agile approach to procurement, recognising the potential cost saving implications of hard shoulder running and keeping the contracting approach open to allow its use. In addition, by driving the whole procurement process forward more promptly, we consider the Agency could, and would, have avoided the cost effects of the financial crisis.

24 The Department acknowledges that the procurement process did extend beyond its 2008 target for signature, which reflected time spent on finalising complex tender documents, on a limited rebid, and on the finance competition during the credit crisis. However, the Department does not accept that hard shoulder running is simply a lower cost solution, but is one that offers materially lower benefits for the reduced cost. Ministers deliberately chose to provide higher benefits and pay the higher costs given the M25's strategic importance.

Recommendations

The Agency and Department

- a The Agency's estimate of expected costs was 27-43 per cent higher than the bids it subsequently received.** The Agency should investigate why its estimates were much higher than the bids, and identify lessons to improve future estimates. In future projects the Agency needs to use its recently improved processes to ensure it is putting together robust estimates of costs. This is particularly important where the Agency relies on them to demonstrate value for money and to plan how much money is available for other projects.
- b The Agency continues to rely heavily on advisers at considerable cost.** Within current budgets, the Agency needs to build its in-house commercial and technical capability for considering alternative technical solutions, procurements and contract management, and reduce its reliance on advisers. It must ensure it has good internal knowledge of projects.
- c The Department is testing demand management techniques to maintain the benefits of the widening over the longer term, but does not expect results until 2012.** The Department must ensure that it has a robust benefits realisation plan for the widening, with appropriate measures to obtain maximum benefit. The Department and the Agency should develop a strategy, by 30 June 2011, for managing the risks to introducing demand management.

To all departments

- d The Agency did not allow itself the flexibility to explore alternative solutions to achieve its aims.** Departments need to explore all reasonable options thoroughly, and include a full evaluation of the benefits and disadvantages of credible options. Large or complex procurements may take a number of years to complete. Departments should, therefore, allow themselves flexibility when advertising procurements to consider emerging technologies which may prove to be value for money, taking account of both costs and benefits.
- e By exposing the project to risk for longer than had been expected the Agency incurred higher financing costs in the credit crisis.** Departments should endeavour to remain on timetable to take advantage of good market conditions as these are not guaranteed to continue. Where market conditions have deteriorated, or are expected to, departments should assess the benefits and disadvantages of continuing, deferring or abandoning the procurement.