



National Audit Office

The Procurement of the National Roads Telecommunications Services



SUMMARY

Background

1 The strategic road network in England consists of 4,800 miles (7,700 km) of trunk roads and motorways. The Highways Agency (the Agency), an executive agency of the Department for Transport, is responsible for the network. In the past, the Agency's focus was on building and maintaining roads rather than managing their operation. In 1998, the Government announced that the role of the Agency was to change to that of a network operator with objectives to reduce traffic congestion through improved traffic monitoring and travel information.

2 The Agency considered that it needed improved motorway telecommunications systems to carry live data about traffic conditions. Most of the Agency's existing systems were the result of nearly 40 years of piecemeal development. Along the motorway network, the telecommunications systems used copper cable to carry voice and data signals, but transmission capacity was limited. By 1998, the Agency had installed fibre optic cable along half of the motorway network, principally to carry CCTV camera images. Parts of the network had been upgraded to digital technology, but most areas used obsolete analogue equipment which was no longer supported by the telecommunications industry. If left unaddressed, the continued use of analogue technology would have left the Agency with insufficient capacity to fulfil its role as a network operator.

3 The Agency decided to upgrade all its telecommunications systems to digital technology. The work would include laying 278 km of high transmission capacity, fibre optic cables to the existing 2,222 km fibre optic cable network (**Figure 1 overleaf**). After receiving first round bids, the Agency, on affordability grounds, reduced the amount of cable laying to 110 km. Some omitted lengths were not dropped from the project but transferred to a programme of future investment that the Agency can call off from a pre-priced schedule of additional works, when the work is needed and funding is available. By the time of the award of the contract, other lengths had been completed by the Agency (**Figure 2 on page 7**).

4 In September 2005, the Agency and GeneSYS Telecommunications Ltd, a special purpose company owned by Fluor Corporation and HSBC, signed a 10½-year Public Private Partnership (PPP) contract to upgrade, operate and maintain the telecommunications cables and transmission equipment located alongside the English motorway network. The Agency structured the contract so that:

- Upgrading and operating the telecommunications systems were captured in a PFI type structure. As is common with this type of arrangement, GeneSYS agreed to finance the upgrade works and in return will receive a contractually set, monthly charge of £3.7 million (2004 prices) from the completion of the upgrade through to the end of the contract, provided the services meet the Agency's performance requirements.
- The Agency can order changes to the telecommunications systems (including extensions to the coverage of the fibre optic cabling) from the pre-priced schedule of additional works. Under the related provisions, GeneSYS's prices cover the direct costs of all the work required to implement the ordered changes.

The eventual lifetime cost of the contract therefore depends on the number and value of additional services ordered from GeneSYS. At contract award, the Agency assumed that the 2004 present value of its payments under the contract would be £385 million, the mid-point of a range from £255 million to £515 million (2004 prices), depending on the value of the called-off additional works.

5 From October 2007, following a two-year upgrade of the cable network, roadside devices such as message signs and CCTV cameras may now be linked to traffic control centres through up to date digital telecommunications systems. This project is known as the National Roads Telecommunications Services (the NRTS).

Findings

6 We examined the procurement of the project. Our main findings are as follows.

7 **The Agency had good value for money grounds for transferring the risks of major cost and time overruns inherent in such a large telecommunications project.**

The Agency procured the project as a PPP because it transferred risk to a contractor that had borrowed money to upgrade the systems and had something to lose if things went wrong.

8 **At the pre-qualification stage, two of the higher scoring potential bidders withdrew from the tendering process.**

Six potential bidders for the project were identified early on but interest wavered during the extended time taken to produce the bid documents. Concerned that some of the potential bidders might be losing interest, the Agency took the unusual step of issuing a second advertisement. Two of the higher scoring potential bidders did not re-apply. Later on in the tendering period, the competitive field reduced further when two bidders that had responded to the second advertisement dropped out of the running, one because of doubts over the financial viability of a consortium member and the other because of doubts that its proposed technical solution could be developed sufficiently. These withdrawals left two bidders in the competition.

9 **Having selected GeneSYS as the preferred bidder, the Agency negotiated the final details of the deal without conceding an increase in price or reallocation of risks.**

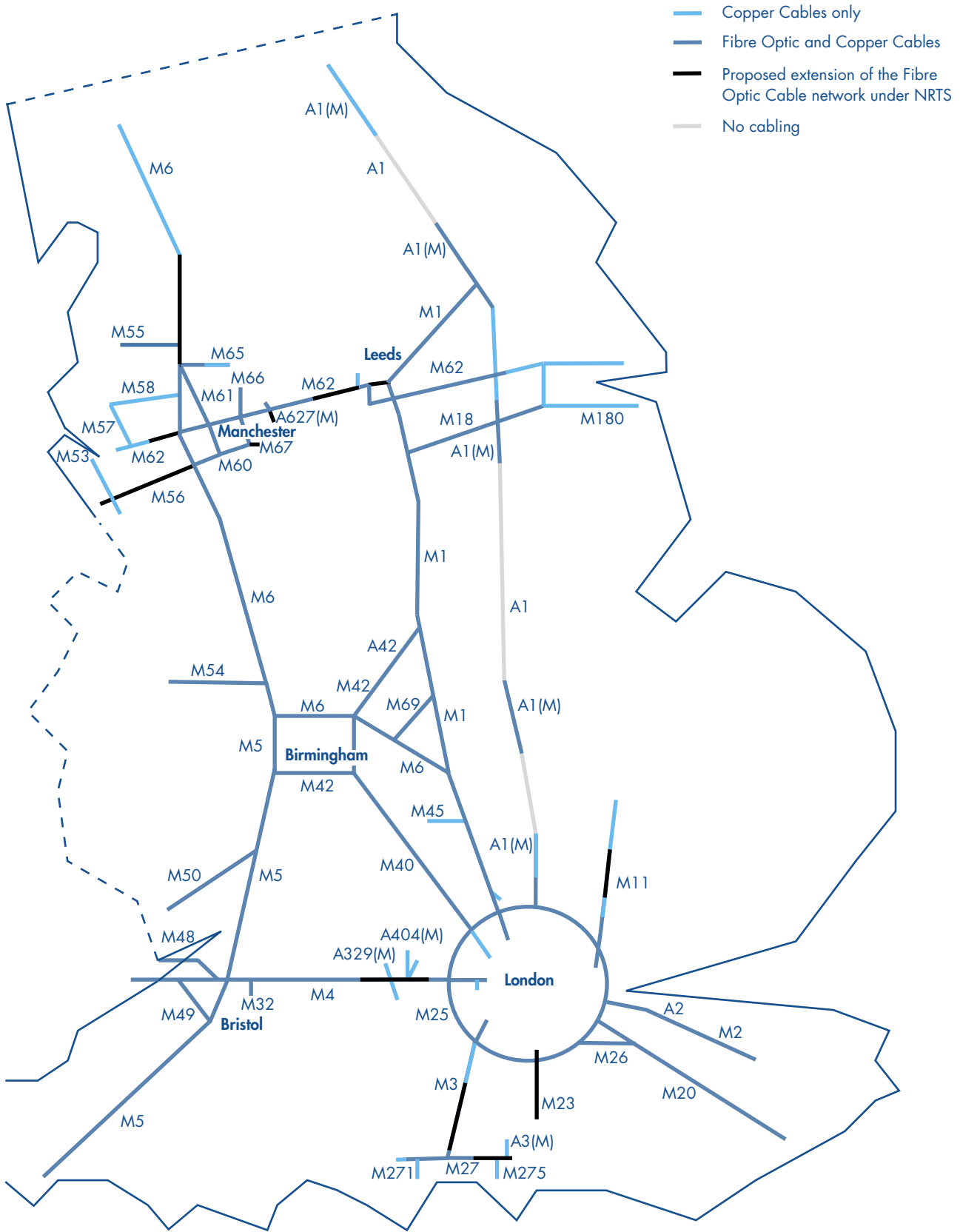
The preferred bidder stage lasted nearly 10 months, which was five months below the average for PFI projects that closed between 2004 and 2006 (Figure 9 in the National Audit Office's report *Improving the PFI tendering process*, HC 149, Session 2006-2007). During this stage, GeneSYS's bid price fell by £2 million, without changes to the allocation of risks. The outcome of these negotiations demonstrates that price rises during the preferred bidder stage of a PPP procurement are not inevitable.

10 **The tendering phase lasted more than four years, over two years longer than originally planned and the cost of professional advice at £15.5 million exceeded the Agency's estimates by £10 million.**

There were a number of external events and major changes in scope that lengthened the timetable. The majority of the lengthening was due to the Agency's requirement for high quality contract documents. As a consequence, the advisers' costs increased. The frequent revisions of the budget for the advisers (Appendix 5) suggest that the Agency struggled to quantify the amount of work needed to complete the procurement.

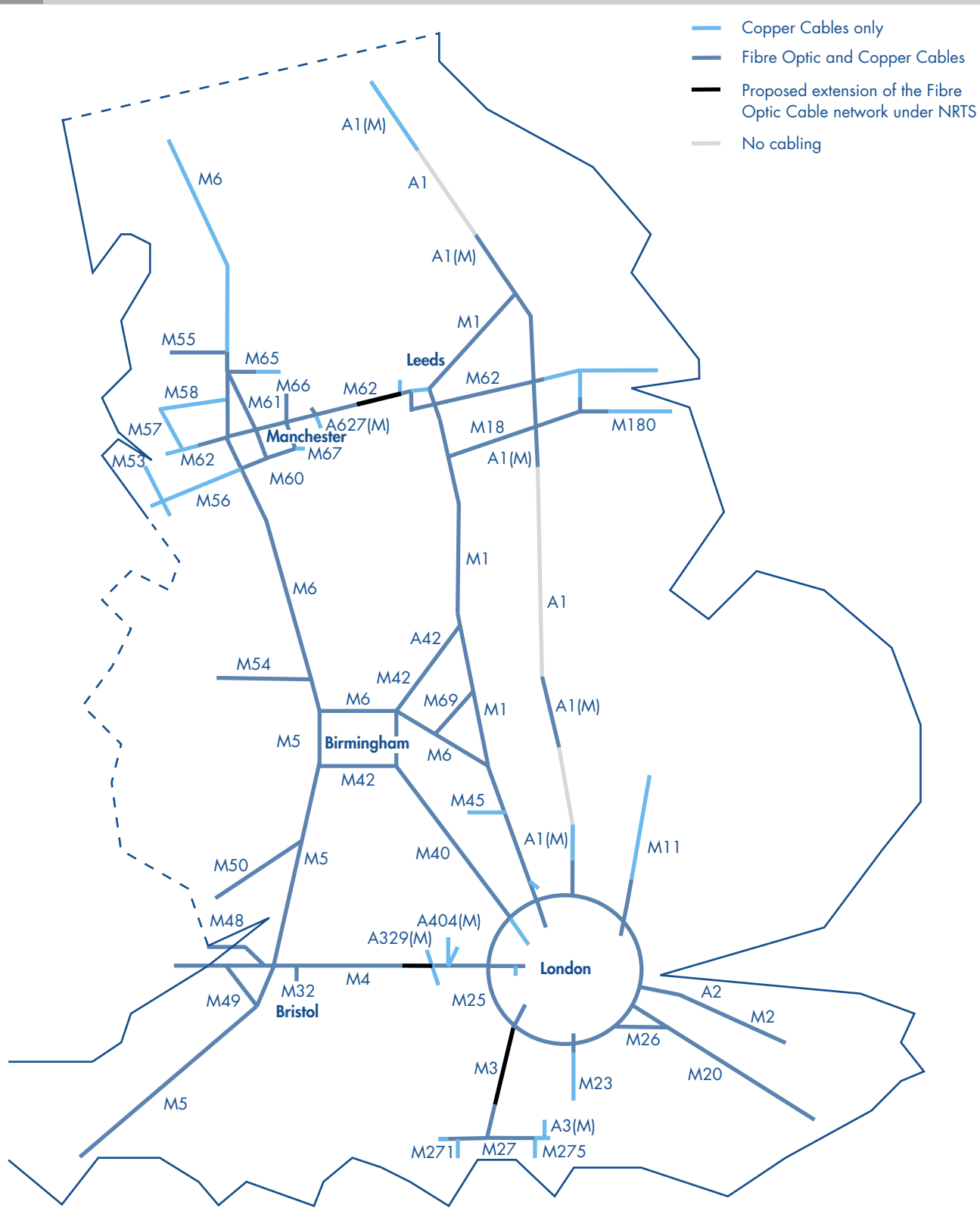
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In 2003, the original tender documents included extending the Agency's fibre optic cable network by 278 kilometres



Source: Highways Agency

2 On affordability grounds, the Agency reduced the extension to its fibre optic cable network under the NRTS contract from 278 kilometres to 110 kilometres



Source: Highways Agency

NOTE

1 Between 2003 and the award of the NRTS contract in September 2005, the Agency installed 168 kilometres of fibre optic cable under its then existing contractual arrangements. Some of this work included lengths omitted from the NRTS project under the affordability review, including lengths along the M3, the M4 and the M62.

11 At contract award, the Agency's estimate of the present value cost of the Public Sector Comparator (PSC) (£415 million in 2004 prices) was marginally more expensive than the PPP deal (£385 million in 2004 prices). While negotiating the deal, the Agency sought to benchmark the cost of the PPP by estimating, in the PSC, what a conventional procurement might cost. The PSC was designed to produce a single figure comparison for a given quantity of work and included an upward adjustment of £85 million for risks. The purpose of the risk adjustment was to inform the Agency's decision on whether to pursue a PPP deal or a conventional procurement for the complex NRTS requirements. In calculating the risk adjustment for this novel project, and given the inevitable uncertainties, the Agency relied on the experience and judgement of its advisers. In our view, for most PPP contracts involving the construction of fixed assets, it is preferable to provide a range for the costs for the comparator, as opposed to a single point estimate. We would also expect to see allowances for events turning out better than expected.

12 The new services are now up and running and benefits for road users from other Agency projects dependent on the NRTS are beginning to be realised. The upgraded telecommunications systems went live in October 2007. Enhancements to existing means of communicating with road users are beginning to come on stream and new means are planned. It is, however, too early to make a full assessment of operational performance or of the effectiveness of the pre-pricing arrangements for additional works.

Value for Money Conclusion

13 In respect of the value for money of the procurement alone, there are inevitable uncertainties in the estimated costs of a PSC, but the Agency has secured, through competition, a PPP with fixed prices and in-built flexibility for a cost similar to the Agency's financial estimate of a conventional project. During the preferred bidder stage, the Agency did not concede either an increase in price, or reallocation of risks. Unlike conventional procurements, a PPP has the potential value for money advantage of transferring risks to the private sector. Some risks have already materialised and have been borne by GeneSYS, rather than by the taxpayer. The relatively short elapse of time since the new services went operational in October 2007 precluded collection of sufficient material for us to judge the value for money of the operational delivery of the services.

14 The overall value for money of the NRTS project depends on how useful the new telecommunications systems prove to be in relation to the Agency's implementation of other projects now enabled by these new systems.

Recommendations

- i** Encouraging market interest in a PPP project is crucial to the creation of competitive tension. Some of the Agency's higher scoring, pre-qualified bidders did not respond when the Agency re-advertised the project nearly a year after it had first invited parties to express an interest in bidding. **Delaying going to the market until the scope and structure of a project are clear should result in a more realistic time table.**
- ii** In putting together the PPP deal, the Agency negotiated a range of contractual terms designed to protect value for money, including the pre-priced schedule of additional works that the Agency can call off as and when required. **Authorities should always consider carefully whether the expected scale of future changes to the services they require make a standard PPP contract suitable. If not, they should consider introducing protections similar to those negotiated by the Agency for the NRTS.**
- iii** Current Treasury guidance recommends that authorities use a public sector comparator in the early stages of a project to assist in the selection of the best procurement route. Inevitable uncertainties in pricing a comparator project, particularly adjustments for risk, mean that authorities should not rely on a single figure public sector comparator but should consider a range of values. **Public sector comparators should not be used as the sole test of value for money for a particular procurement route. Instead, authorities should conduct wider analyses of the costs and benefits of each available procurement route.**
- iv** The procurement team's preparations for the preferred bidder negotiations included acquiring extensive knowledge of GeneSYS's financial model and the underlying costs. During the competitive phase of the procurement, the Agency required bidders to submit their financial models and input costs as part of their bids. Later, the Agency incorporated GeneSYS's financial model and the costs into the contract to aid in the evaluation of future changes not covered by the pre-priced schedule of works. **Authorities should follow the Agency's example. They should obtain and analyse their bidders' price build ups, as well as the bidders' financial models, to assess the reasonableness of the tendered prices. Authorities should also ensure that they retain an understanding of the bases of their contractors' prices sufficient to test the value for money of any variations to the services.**
- v** While authorities will always require high quality professional advice to get good value for money when procuring a PPP deal, it is equally important that costs are monitored carefully. This is particularly important where a project, such as the NRTS, undergoes major changes in scope and structure. **Authorities should produce realistic procurement budgets and timetables, especially for the use of professional advisers and prepare realistic updates for any agreed changes in project scope.**
- vi** During the procurement, the NRTS project experienced two major changes. The first brought the operation and maintenance of local connections between over 14,000 roadside devices and the national trunk cable network into the scope of the project. The second transferred some upgrades of the network, which were not immediately required, out of the proposed initial works and into the call-off arrangement for pre-priced additional works. While the Agency had justifications for the changes, the case for change may not be so clear in future PPP projects. **When a project is to undergo major changes in scope, Authorities should formally evaluate the impact of the changes on the overall value for money of the project.**
- vii** The Agency's practice of delegating day-to-day management of projects to advisers meant that we have not been able to access all the information we required from the Agency in a timely manner. Changes in staff within an authority and in advisory firms will occur over time and it would be unacceptable if, in future years, nobody understood the background to the key characteristics of a PPP deal. **Authorities should always have easy access to key documents and maintain, in-house, a good understanding of the contractual and operational issues associated with their projects.**