



National Audit Office

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## **Report**

by the Comptroller  
and Auditor General

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**Department for Transport**

# Crossrail

## Key facts

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**£14.8bn**

available infrastructure  
funding for the Crossrail  
programme

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**£5.2bn**

contribution for Crossrail  
infrastructure set aside by  
the Department for Transport

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**£1bn**

estimated cost of  
Crossrail trains

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- December 2019** Crossrail full opening date
- 14 years** the time from Crossrail Bill being presented to Parliament,  
to Crossrail opening fully
- 43.7 per cent** of the Crossrail infrastructure works complete against a target  
of 45.2 per cent, as at September 2013
- 42** kilometres (26.2 miles) of new Crossrail tunnels under London
- 24** Crossrail trains per hour which will run in each direction on the  
central section at peak times
- 9** new stations being built

# Summary

**1** The Department for Transport (the Department) is jointly sponsoring, with Transport for London, the Crossrail programme to deliver a new rail service for London and the South East. When complete, the new line will run from Maidenhead and Heathrow Airport in the west, to Abbey Wood and Shenfield in the east.

**2** Crossrail Limited, a wholly-owned subsidiary of Transport for London, is delivering the programme, with Network Rail undertaking work to improve existing surface infrastructure to meet the needs of the new service. About half of the infrastructure work is now complete, which is just behind schedule, but Crossrail Limited remains confident that it will meet the planned delivery date. Forecast costs remain within available funding of £14.8 billion and Crossrail Limited has taken steps to improve the progress against schedule. In summary, the programme involves:

- building a new underground railway across central London, improving existing tracks on the western and eastern branches, building nine new stations and improving 29 existing stations;
- buying a fleet of new trains and a maintenance depot, with an estimated cost of £1 billion; and
- appointing a company to operate the service.

**3** The Department and Transport for London have established a £14.8 billion funding package to build the infrastructure. The funding is a combination of direct grant funding from both bodies, borrowing by Network Rail and Transport for London, and contributions from businesses, including a supplement to London business rates. The Department's contribution is likely to be £5 billion.

**4** Both the Department's and Transport for London's decision to invest is based on forecast growth to the population in London and the South East, and resulting increased demand for public transport. The business case for the line estimates that Crossrail will produce £1.97 of benefit for every £1 of cost, through reduced journey times, reduced crowding on public transport and quicker interchanges between services.

## **Scope of the report**

**5** This report, our first on the programme, examines whether the Department has protected the taxpayers' interests in its investment in Crossrail, in relation to the programme's:

- development (Part One);
- funding (Part Two); and
- oversight of progress to date (Part Three).

Although the programme is jointly sponsored by the Department and Transport for London, we have focused on the Department's role as we are not Transport for London's auditors.

**6** Our audit approach and methods are described in Appendices One and Two.

**7** Crossrail is a major engineering programme cutting through the complex geography of London and integrating with several existing rail systems. It is being built at a time when the Department has a challenging programme of rail infrastructure and other major programmes to manage. In assessing whether the Department is an effective sponsor, we have examined the extent to which it:

- established that there was a strong case for investment in Crossrail;
- set the programme up on a sound basis with clearly defined and agreed roles and responsibilities, and objectives and scope;
- put in place an appropriately skilled and capable team in the Department, and in Crossrail Limited;
- established an appropriate level of funding based on robust estimates, and provided certainty of funding; and
- maintained oversight of the programme as a whole.

**8** The programme's oversight arrangements are integrated and the two sponsors have worked closely together to place the programme on a firm footing, establish Crossrail Limited and monitor progress. This means that for some issues, such as assurance over progress to date, it is not possible or appropriate to separate the Department's role from that of Transport for London. Where this is the case, we refer to both sponsors jointly.

## Key findings

Establishing that there was a strong case

**9 Despite a consensus on the need to increase capacity on the London and South East rail network, it took eight years for the government and Parliament to be convinced that Crossrail would be a cost-effective means of addressing this need.**

A Strategic Rail Authority review in 2000 found that new rail links were needed to relieve congestion on east–west routes across London. The government’s initial business case for Crossrail, in 2003, found that the line would reduce crowding by more than 25 per cent on a number of London Underground lines. The Secretary of State commissioned an independent review of the business case, in 2004, which confirmed the need for Crossrail but raised concerns about the scheme’s deliverability. The government introduced the Crossrail Bill in 2005. The Bill did not gain royal assent until 2008 (paragraphs 1.8 to 1.11).

**10 Crossrail’s expected benefits outweigh its costs.** The benefit–cost ratio in the latest update of the business case, in 2011, is 1.97. This is within the Department’s definition of ‘medium’ value for money, a range of 1.5 to 2. If estimated wider economic benefits are included, the benefit–cost ratio increases to 3.1. Transport for London and the Department are developing a plan for realising the benefits of Crossrail (paragraphs 1.12 to 1.14).

**11 The Crossrail route currently terminates in the west at Maidenhead; the sponsors are considering whether it should run to Reading.** The Department expects that this change would result in a slight reduction in the construction costs of the Crossrail programme, largely because some works at Slough and Maidenhead would no longer be required. The cost of electrifying the Great Western Main Line and of redeveloping Reading station is being paid for as a separate project. In addition to the relative costs and benefits of each option under consideration, the Department will need to consider the impact on the programme schedule (paragraph 1.14).

Setting up the programme on a sound basis

**12 It took three years to set up the programme, and the Department together with Transport for London and Crossrail Limited did so thoroughly, setting a strong foundation for the programme, which has stood it in good stead.** In his March 2013 report on the management of major programmes, Lord Browne, the government’s lead non-executive director, emphasised the need to hold projects to a very high standard of scrutiny before proceeding. The Crossrail programme has adhered to this principle by, for example:

- Clear formal agreements signed by the relevant parties, setting out the roles and responsibilities of sponsors, the approach to delivering the programme and Network Rail’s involvement.

- Crossrail Limited earned its autonomy to deliver the programme by passing a series of challenging review points at the outset to demonstrate that the programme was sufficiently well-developed to proceed.
- There was strong internal and external challenge to Crossrail Limited from the Project Representative, a team of senior engineers that reviews and challenges Crossrail Limited's work on behalf of sponsors, and from the Major Projects Review Group in the Cabinet Office.
- Either sponsor could withdraw from the programme and the programme could be cancelled up until the final review point, which concluded in April 2011. We believe that this stopped the review points from becoming a formality and meant that real progress had to be made.
- The scope was clearly defined. To date, sponsors have proposed only ten changes to the programme, of which four have been implemented. If, however, sponsors decide to extend the western section of the route from Maidenhead to Reading, as discussed in paragraph 11, this will constitute a further scope change (paragraphs 1.15 to 1.18).

### Skills and capability

**13 As with other Department for Transport programmes, the Department's senior representatives overseeing the programme have changed frequently, reflecting the number of programmes that the Department is sponsoring and a scarcity of staff with the right skills and experience.** The impact of this has been lessened, however, because a small number of departmental staff have worked in rotation on the Joint Sponsor Board. In addition, there has been continuity in Transport for London staff on the programme, and Crossrail Limited's senior team has a strong track record (paragraphs 3.4 and 3.11).

### Establishing appropriate funding based on robust cost estimates

**14 Both sponsors and Crossrail Limited did well to reduce construction costs when they threatened to escalate in the early years of the programme, although they were facilitated in this by the Spending Review 2010 and the recession.** In 2007, the Department and Transport for London agreed to make £15.9 billion available for the programme. This was based on costings developed by Cross London Rail Links. In 2009, the anticipated cost of the programme had escalated to £17.8 billion, and Crossrail Limited initiated a project to reduce costs and risks. Against the background of the government-wide need to reduce expenditure, sponsors worked with Crossrail Limited to further reduce costs. This resulted in the anticipated cost of the programme being reduced to £14.8 billion. To do this, the schedule for opening the railway has been extended. This has had little impact on the benefit–cost ratio, but the sponsors' decision not to extend the payment schedule to Crossrail Limited has resulted in a large cash balance, which could have been put to more effective use (paragraphs 2.1 to 2.10).

**15 In addition to grants, sponsors also agreed significant funding from businesses which stand to benefit from the railway, but the Department's direct contribution is likely to increase since it expects that not all of it will be delivered.**

Around £5.3 billion of the funding package is expected to come from businesses in and around London, mainly through an increase in business rates. The Department for Transport's planned direct contribution was £4.8 billion but it set aside £5.2 billion of grant funding in case it failed to secure funding from private sector sources. In the event, failure to secure all the expected funding from Heathrow Airport Limited is likely to result in the Department's direct contribution being closer to £5 billion. In addition, the Department's rationale for agreeing the amount the City of London Corporation would contribute is not clear (paragraphs 2.11 to 2.17).

**16 The £14.8 billion funding package covers only the construction of the railway.**

Costs outside the £14.8 billion funding package include the estimated £1 billion cost of buying trains, the majority of which will be funded directly by Transport for London, with the Department providing £100 million. The Department also contributed £175 million of the £316 million cost to develop plans for the railway, with Transport for London paying for the remainder. Other additional costs are funded by Transport for London, Network Rail or will be met by the future Crossrail operating company (paragraphs 2.18 to 2.21).

### Maintaining oversight of the programme

**17 The Department has a clear view of Crossrail Limited's progress, and has asked for more information on progress with work being undertaken by Network Rail.** The Department's oversight benefits from:

- its role on the Joint Sponsor Board;
- the presence of a Department-nominated non-executive director on the board of Crossrail Limited;
- the Project Representative, who reviews and provides commentary on Crossrail Limited's regular progress reports, as well as carrying out focused reviews of particular aspects of the programme. These reports help the Department and Transport for London to engage with and challenge Crossrail Limited effectively; and
- clear, high quality monthly and semi-annual reports on progress, which, on the whole, focus on the main issues of interest for sponsors.

Crossrail Limited receives detailed information on Network Rail's works, and includes a summary of this in its regular reports to sponsors. The Department – which is responsible for costs of the Network Rail programme above £2.3 billion – has asked for greater clarity and detail on progress with the elements of the programme delivered by Network Rail (paragraphs 3.1 to 3.10).

**18 The information available allows both sponsors to monitor progress and to challenge Crossrail Limited.** Crossrail Limited uses a probability-based approach to forecasting the delivery date and final cost, and to monitor and manage risks. The approach is regarded as good practice in major engineering projects. This allows the sponsors and Crossrail Limited to identify when there are risks to delivery and to take action to mitigate those risks. Costs are forecast to be at or below £14.51 billion, with a 95 per cent probability, compared to the available funding for infrastructure of £14.8 billion (paragraphs 3.6 and 3.12 to 3.20).

**19 The infrastructure element of the programme is well advanced but a number of significant risks and challenges remain.** The process of awarding the contract for the trains that will run on the line has suffered some delay due to a change in the approach to funding the procurement. Sponsors are focused on achieving the April 2014 deadline for awarding the contract but failure to do so could result in delays to some services starting and a reduction in the programme's benefits. Crossrail Limited has been planning how the railway will operate since it was established, and the process for appointing an operator for the railway is under way. Although the Department is not funding the trains or the operator, it needs to maintain oversight of the total programme to ensure that its investment is protected (paragraph 3.21).

### **Conclusion on value for money**

**20** On the whole and to date, the Department together with its co-sponsor Transport for London and its delivery body, Crossrail Limited, have done well to protect taxpayers' interests in the Crossrail programme. In the early years, they took effective action to stop costs escalating and to obtain more competitive rates from suppliers during the recession. During the construction phase, the governance arrangements and oversight of the project have ensured tight management of the programme so that delivery to both cost and schedule are well managed. The late decision to change funding of the rolling stock introduced a new delivery risk, but this is now being managed. The strategic need for Crossrail has become clearer over time as forecasts of population and employment growth in London have increased. The Department forecasts that Crossrail will bring £1.97 of transport benefits for every £1 of cost. Overall, if progress to date can be maintained, and risks managed, Crossrail is on track to achieve value for money.

## Recommendations

**21** To build on the strong foundation of the Crossrail programme and the good progress to date, the Department now needs to:

- a** **Finalise its plans for the development of governance arrangements as appropriate for the transition from construction to operations, over the next five years.** The Department should work with Transport for London, Crossrail Limited and Network Rail to produce a transition plan of similar clarity to the founding programme agreements.
- b** **Work with Transport for London to continue to develop and then implement a clear plan to monitor the delivery of the expected benefits of Crossrail, including both the transport benefits and the expected wider economic benefits.**
- c** **Enhance scrutiny of Network Rail programme management information, to assure itself that information provided to Crossrail Limited and onwards to sponsors sets out a clear picture of progress and risk.** This is particularly important for the Department because it is responsible for funding any increase in Network Rail's costs beyond the £2.3 billion available funding.

In delivering future major projects, the Department should:

- d** **Do more to secure private sector funding contributions.** The Department should ensure that when it negotiates contributions to projects from businesses and other organisations, these are based on robust and realistic calculations of the benefits to business. The Department should also work to understand private sector funders' interests in its projects and how these may affect the certainty of funding.
- e** **Consider how to achieve greater continuity in departmental officials' oversight of major programmes.** The Department should identify how it will manage staff assignments to its various programmes, ideally to appoint officials for longer periods, and to manage the 'handover' process, where necessary, to achieve a smooth transition.
- f** **Monitor all costs on major programmes including development, start-up and sponsorship costs so that it can develop an understanding of the true costs of major programmes, to help it keep these costs under control. We would expect all government departments to do this on their major programmes.**
- g** **Ensure that programmes have sufficient cash available to provide security and flexibility to the delivery body, while minimising opportunity costs.**