National Audit Office

Report
by the Comptroller
and Auditor General

Department for Transport

Procuring new trains

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Department for Transport

Procuring new trains

Report by the Comptroller and Auditor General

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Comptroller and Auditor General
National Audit Office

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This study examines whether the Department for Transport is well placed to get value for money from the procurement of new train services for the Thameslink and Intercity Express programmes.

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Key facts

£7.65bn

the estimated total amount train operators will pay for using the new Intercity Express trains over 27.5 years (2014 prices, present value)

£2.8bn

the estimated total amount train operators will pay for using the new Thameslink trains over 20 years (2014 prices, present value)

2,006

the total number of new train carriages, of which 1,140 is for Thameslink, and 866 – 369 for the Great Western Main Line and 497 for the East Coast Main Line – are for Intercity Express

13	the total number of new, reconstructed or refurbished depots being delivered by the contractors: two for Thameslink, eleven for Intercity Express
24	trains per hour through the core Thameslink route upon completion of the programme
4	trains per hour between London and Bristol on the Great Western Main Line upon completion of the Intercity Express programme – twice the current number of services
1.42	benefit–cost ratio for the Thameslink programme (trains and wider infrastructure programme)
2.7	benefit–cost ratio for Intercity Express
3	years of delay to the Thameslink programme (trains and wider infrastructure programme)
2.5	years of delay to Intercity Express

Summary

1 The Department for Transport (the Department) has awarded contracts for both the Intercity Express and the Thameslink programmes to private sector consortia to supply, finance and maintain new trains. Train operators on the Great Western Main Line, East Coast Main Line and an expanded Thameslink network will pay the consortia to use the trains, subject to specified performance and availability levels being met. The Department estimates future payments will be around £7.65 billion for Intercity Express and £2.8 billion for Thameslink (2014 prices, present value) over 27.5 and 20 years respectively.

2 The procurements comprise the following:

- **Thameslink** – 1,140 new train carriages to provide increased capacity, reliability and frequency of service; two new train maintenance depots; a maintenance contract lasting up to 30 years with options to break at the first franchise change after year ten of the contract and every franchise change thereafter; financing; and a contract which incentivises the consortia to provide and maintain reliable trains.
- **Intercity Express** – 866 new carriages in total – 369 for the Great Western Main Line and 497 in total for the East Coast Main Line – to replace ageing fleets; four new or reconstructed maintenance depots and seven refurbished depots; maintenance and cleaning of both rolling stock and depots for the 27.5 year lifetime of the contract; financing for the transaction; and a contract which incentivises the consortia to provide and maintain reliable trains.

Scope of the report

3 This report, our first on Intercity Express and second on Thameslink, examines whether the Department is well placed to achieve value for money from these two major procurements. It focuses on:

- the programmes' objectives (Part One);
- the procurements (Part Two);
- the contracts (Part Three);
- managing current and future risks to value for money (Part Four); and
- the decision to order more trains for the East Coast Main Line part of the Intercity Express programme (Part Five).

4 We summarise our audit approach and evidence base in Appendices One and Two.

Key findings

The Department's objectives and approach

5 **There was good evidence of the need for new trains to increase capacity for both programmes.** Our June 2013 report on Thameslink showed that in 2002 the Thameslink route was already the most crowded commuter route in London, and that demand was set to increase significantly. On Intercity Express, existing intercity trains were reaching the end of their expected time in service and the business case for Intercity Express showed that, by 2015-16, many trains would be operating well above capacity. Value for money will depend, in part, on passenger demand forecasts being met (paragraphs 1.5 and 1.6).

6 **Through these procurements, the Department was attempting to minimise the effects of some of the long-standing issues with the rail industry, for example by reducing long term costs to the whole rail system.** The Department had identified that train operating companies were not incentivised to consider long term costs to the whole rail system when deciding which trains to use. In addition, the Department's 2004 White Paper also stated that charges paid by train operators to Network Rail bore little relation to the maintenance costs for tracks. The Department therefore included the objective to minimise these broader costs in both procurements. Following the 2011 McNulty report on the value for money of UK rail, which stated that these systemic issues had not been resolved, the Department has begun to work with industry and the rail regulator to address them (paragraphs 1.7 to 1.11).

7 **These structural issues and the scale of the procurements led to the Department's decision to lead the procurements itself despite not having led a major rolling stock procurement before.** In the case of Thameslink, the Department also cited the fact that the trains would operate over multiple existing franchises as a reason why a single operator could not lead the procurement. Having enough staff with the right skills and experience is vital to manage such programmes. As we have reported on other major programmes run by the Department, the Department's teams are often stretched and this was the case again, although it made extensive use of consultants and advisers, and train operating companies were involved in the design of the train specifications, the procurement requirements and the contracts (paragraphs 1.12 to 1.16).

8 **Better strategic planning of infrastructure and train needs could have prevented the significant changes which occurred to the Intercity Express programme.** Buying trains depends on the nature of the infrastructure on which they will run. The Department told us that its decision on the specification for Intercity Express was made against a backdrop of rapid change in design and technology and in recognition of infrastructure as a contributor to economic growth. Because the Department began the Intercity Express programme when it considered that there was not a case for a major electrification programme it was reasonable for the Department to introduce flexibility to the programme and to procure self-powered (diesel) trains, trains that are powered by overhead electric lines and trains which can use both forms of power (bi-mode). However, in 2009 – just two years after the procurement began – the Department decided to electrify the Great Western Main Line, which meant that diesel trains were no longer needed (paragraphs 2.2 and 2.3).

9 **It is not clear, with differing views, whether the decision to carry out two procurements at similar times, combined with the decision to procure all the required trains in single, large procurements to achieve economies of scale, impacted on the market's appetite to respond.** The Department and some manufacturers are of the view that rolling stock manufacturers operate in a global market and that the timing and size of procurements have little or no bearing on the level of competition achieved. Moreover, the Department contends that the timing of the procurements was based on the ageing profile of the trains that needed to be replaced in the case of Intercity Express, and upgraded for Thameslink to provide increased capacity in the interest of passengers. However, others contend that achieving value for money requires manufacturers to have greater clarity of demand and avoiding peaks and troughs. The level of competition achieved compares favourably with that achieved for rolling stock procurements in recent years, although bidders did drop out during the procurements for their own commercial reasons, and on Intercity Express, two major manufacturers decided to join a single bidding consortium (paragraphs 2.5 to 2.11).

10 **The Department concluded that for both procurements, the preferred bidders had offered significantly better value for money and that the second placed bidder was unlikely to be able to improve its bid enough to overcome this gap.** On both Thameslink and Intercity Express, the Department's evaluation of the bids was in line with evaluation criteria set out in the invitation to tender (paragraph 2.12).

11 **The Department decided to proceed with a significantly revised bid from its preferred bidder for Intercity Express without going back to the market.** The Foster Review into the value for money of Intercity Express, commissioned by the Secretary of State in March 2010, stated that he was "not convinced that all the potentially viable and possibly preferable alternatives to IEP (Intercity Express programme) have been assessed alongside it, on an equal footing". In September 2010, the Department received a revised proposal from its preferred bidder, Agility Trains, to provide fewer trains with a revised design at a lower price. The Department carried out extensive analysis of a range of options and concluded that Agility Trains' revised bid offered better value for money than the other options, which would have involved reopening the procurement (paragraphs 2.14 to 2.17).

12 **The Department adopted a Private Finance Initiative-type approach to both procurements but, in the case of Thameslink, it did not explore the costs and risks of financing the procurements from the public purse.** The Department did consider a publicly funded option for Intercity Express but dismissed it on the basis that the Department, as owners of the trains, would retain too much risk. In the case of Thameslink, the Department did not consider public funding as it decided it did not want to absorb the cost of this project at the expense of other transport priorities, and that, as a result, private finance was the only practical option given the existing industry structure (paragraphs 1.19 to 1.20 and 2.20).

13 **The Department concluded both deals at a time when there were difficulties in the financial markets, but it does have the opportunity to improve value for money by refinancing both deals when it judges that conditions are more favourable.** Overall, final costs for both projects were lower than at the initial bid stage (paragraphs 2.19 to 2.29).

14 **The Department awarded both contracts more than three years later than intended, largely due to pauses to the procurements and the challenge of securing finance.** On Thameslink, the contractors will provide trains in line with the programme's revised infrastructure timetable for completion by 2018, which is also three years later than originally planned. The Department forecasts that the last trains for Intercity Express will enter service in 2020, nearly two and a half years later than planned (paragraphs 1.4, 2.24 and Figure 2).

15 **In our opinion, the Department has not handled relationships with bidders well during the procurements, which increased the risk of legal challenge.** The Department kept bidders informed about progress following appointment of the preferred bidder, but this was primarily through the media, Parliament and public meetings rather than communicating directly with them. On Intercity Express, we consider that the Department could have done more to explain to the unsuccessful bidder the features of the Agility Trains' revised bid which led the Department to proceed with that bid. In our view, this increased the risk of legal challenge (paragraph 2.18).

16 The Department secured contractual terms that incentivise the suppliers to provide and maintain reliable trains, in line with its key objectives. However, contractual provisions for Intercity Express give the Department an extensive oversight role, which could slow down decision-making and increase costs for compliance if not managed well. In contrast, the Thameslink contractual structure includes more immediate incentives for the owner and maintainer to improve value for money such as break clauses to facilitate potential competition around maintenance (paragraphs 3.1 to 3.5).

17 The Department's decision in July 2013 to exercise an option in the original contract with Agility Trains to add 270 carriages to its Intercity Express order at a cost of £1.4 billion[1] has created confusion in parts of the industry about the Department's role. The Department considered that exercising the option offered better value for money than any of the options available to bidders through the franchising process. The option expired in August 2013 and the Department also considered that it would be more likely that the East Coast franchise would be let according to schedule in February 2015 if it exercised the option. This meant that it did not leave it to train operating companies to purchase the trains through the franchising process. The Department's stated policy is that it will leave future train procurement to industry, although it reserves the right to intervene where scale and complexity make it necessary. Its decision to exercise the option and to initiate procurements of additional trains to bridge service gaps prior to completion of the Thameslink programme appear to us to stretch this policy (paragraphs 2.34 and 5.1 to 5.6).

18 On both programmes, the Department needs to continue to manage risks going forward and maintain an effective oversight role. A particular risk that the Department will need to monitor on Intercity Express, is progress on electrification works, which has been identified as a significant risk and which is currently over budget. Once trains are operational, as well as ensuring that parties, including operators and the consortia, are meeting their obligations under the contracts, it will have to encourage cooperative and efficient working relationships particularly between the owner, maintainer and train operator and Network Rail (paragraphs 4.1 to 4.7).

Conclusion on value for money

19 The Department had broad objectives for both procurements to minimise the effects of long-standing issues in the rail industry, including reducing the long term costs to the whole rail system and improving the reliability and availability of trains by transferring risk to the train service suppliers. The Department has signed contracts for the provision of new train services in line with these objectives. The Department has begun working with industry to address the issues around long term, whole system costs more generally.

1 Cost expressed in 2014 prices, present values.

20 We are not able to conclude fully on value for money on either project until the new trains are in service and benefits are being realised. This is dependent on the Department and train operators managing the contracts and the wider programmes effectively, and assumptions, such as passenger demand forecasts, holding true. We are concerned that in the case of Intercity Express, the Department decided to proceed with a revised bid without competition, which means that the Department's view that no other manufacturer could offer better value for money is untested. The Department has the opportunity to gain from future reductions in the cost of financing for both procurements to improve value for money.

Recommendations

a **The Department should act to ensure that the industry understands its policy on the procurement of trains and that its actions are seen to be consistent with the stated policy.** At the moment there is a gap between the Department's stated desire to only play a strategic role and how it is acting, particularly following the decision to exercise an option in the contract to order more trains. A clear understanding of the Department's role will help the industry make plans, and will reduce costs associated with uncertainty.

b **To improve its planning of major procurements, the Department should:**

- produce a detailed, integrated plan which brings together infrastructure, rolling stock and franchising strategy;
- understand what the project will involve before fixing the timetable and starting the competition; and
- identify a critical path and key tasks and their dependencies, and actively manage key risks.

c **The Department should increase and maintain competitive pressure in future procurements.** Sustaining competitive tension is central to getting value from competitions. Where possible, the Department should limit changes once it has chosen a preferred bidder and the time spent on this phase.

To ensure that it achieves the intended benefits for both programmes, the Department should:

d **Make use of its opportunity to refinance both deals in a way which maximises value for money.** The Department should work with Agility Trains and Cross London Trains to monitor closely developments in the debt finance markets before choosing when to refinance the deals.

e **Build on the contract terms by supporting collaborative working between the train operators and the consortia supplying the trains.** The Department must monitor the consortia, franchisees, and others to encourage them to work to reduce whole system costs. It should continue to consider bidders' ability to work collaboratively when it selects franchisees and drafts the franchise agreements.

f **Maintain appropriate oversight and interventions when managing the contract.** It should:

- not impede flexibility between the owner, operator, manufacturer and Network Rail, which could increase the risk of additional cost and delay;
- determine whether all parties are acting collaboratively as the Department envisages, and act to encourage this if required; and
- monitor the financial markets to determine whether there is an opportunity to reduce the cost of the projects' debt in the future.

Part One

The Intercity Express and Thameslink programmes

1.1 This report focuses on the Department for Transport's (the Department's) recent procurement of:

- new intercity high speed train services including availability of trains, maintenance and cleaning to replace ageing existing fleets on the Great Western and East Coast mainlines (**Figure 1** on pages 14 and 15 shows the routes). This is the largest element of the Intercity Express programme, although there are also some associated infrastructure works and timetable changes; and
- new train services, including availability of trains and maintenance, to increase service frequency and capacity on the Thameslink route north to south through central London. The Thameslink programme involves a major upgrade and expansion of the Thameslink network, including reconstructing Blackfriars, Farringdon and London Bridge stations and introducing new signalling technology. In June 2013, we reported on progress with the broader Thameslink programme.

1.2 For both programmes the Department has awarded contracts to private sector consortia to supply, finance and maintain new trains. Agility Trains, led by Hitachi Rail will supply 866 Super Express train carriages for the Intercity Express programme. Cross London Trains, which comprises Siemens, infrastructure investment group Innisfree, and 3i Infrastructure plc will supply 1,140 new train carriages for the Thameslink programme. There are differences between the contracts, which are set out in more detail in Part Three, but the main responsibilities of the parties to the contracts are set out below:

- The Department has procured the new trains and provided guarantees to the train owner that a franchise operator will enter into contracts to use the trains for specified lengths of time: 20 years for Thameslink and 27.5 years for Intercity Express.
- Agility Trains and Cross London Trains are responsible for financing the trains, and working with operators to introduce them into service. Agility Trains is also responsible for manufacturing, maintaining and overnight cleaning of the Intercity Express trains; whereas, on Thameslink, Siemens will manufacture and maintain the trains and the operator will clean them.

- Train operating companies will pay Agility Trains and Cross London Trains to use the trains, subject to the consortia meeting specified performance and availability levels. The Department expects the cost of these payments and additional revenues generated by the new trains and the additional outputs they deliver to be taken into account by train operators as part of their franchise bids made to the Department.
- Two new Thameslink depots will be funded and built by Siemens and leased to the operator, and Agility Trains is building or reconstructing four new depots and refurbishing a further seven.

1.3 The Department estimates that future payments (in 2014 prices, present value) for the train services will be around £7.65 billion for Intercity Express and £2.8 billion for Thameslink.[2]

Procurement timetables

1.4 The original plans were for the Intercity Express trains to enter service between 2013 and 2017, and the Thameslink trains by the end of 2015. The Department completed both procurements much later than originally planned. The delays were largely due to pauses – due to the government's review of all infrastructure projects during the spending review, and an independent review of Intercity Express – and the challenge of securing finance as a result of the financial crisis and euro crisis between 2008 and 2012. More details are set out in Part Two. In the case of Intercity Express, delays will result in trains entering into service later than planned (**Figure 2** on pages 16 and 17):

- For Thameslink, the Department issued the invitation to tender for the trains in November 2008, estimating that it would take around 16 months to complete the procurement and award the contract. In fact it took over four and a half years, with the Department finally awarding the contract in June 2013. The Department expects Cross London Trains and the train operator to work together to deliver trains into full service between early 2016 and June 2018. This is in line with the programme's revised infrastructure timetable, set in 2010 as part of the spending review, which is also three years later than originally planned.
- Likewise on the Intercity Express programme, the Department originally expected to award the contract in April 2009, 17 months after issuing the invitation to tender in November 2007. In the event, the Department closed the contract to supply trains for the Great Western and East Coast mainlines some four and a half years later in July 2012. It subsequently took an option to award a further contract to supply trains for the East Coast Main Line, and in April 2014, financed the contract to supply trains on the East Coast Main Line. The Department currently expects Agility Trains to deliver the first new trains ready for initial service in June 2017 and the last train in 2020, around two and a half years later than originally planned.

2 The programme cost is expressed as the total payments the train operator will pay over the lifetime of the contract in 2014 prices (present values).

Figure 1

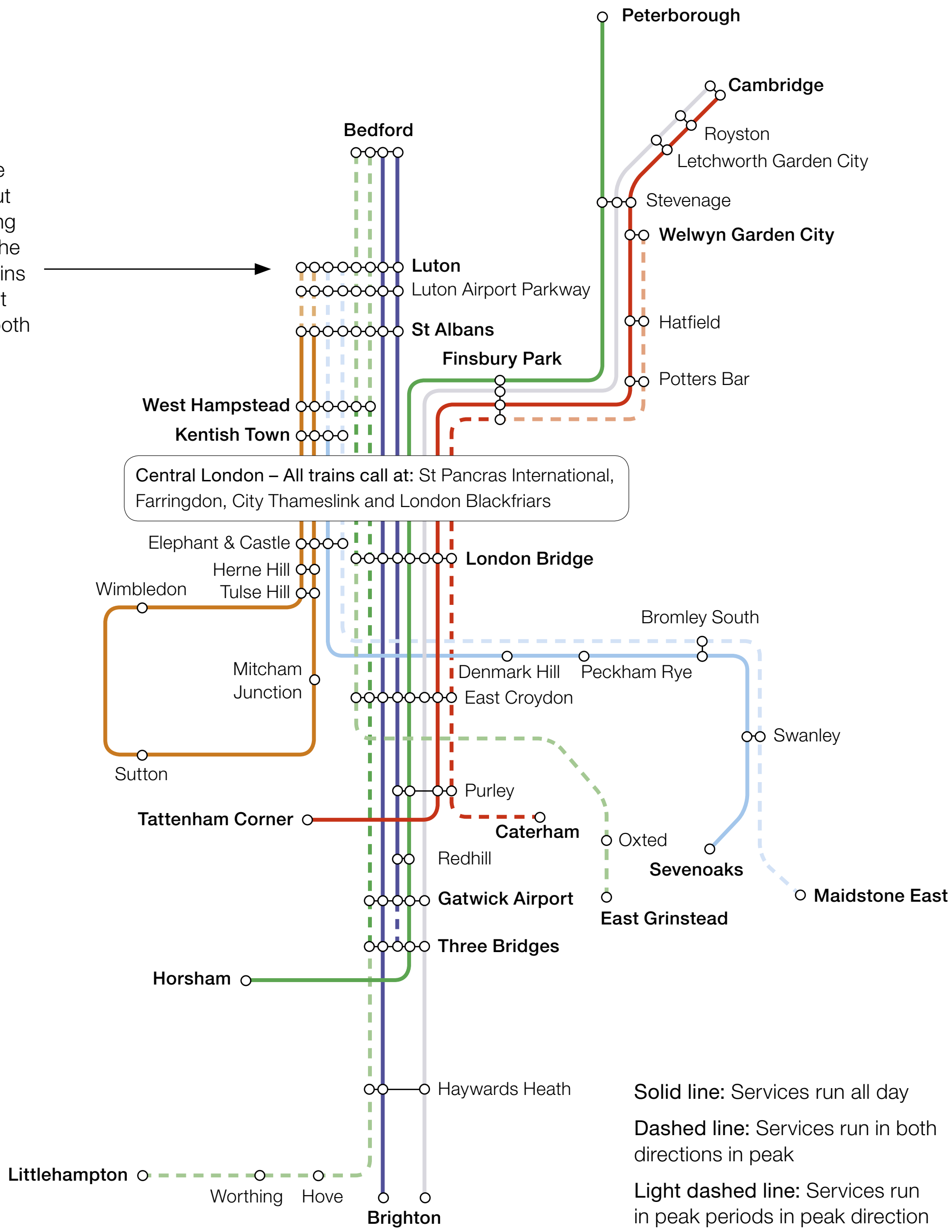
Thameslink and Intercity routes

Proposed Thameslink service pattern

Weekdays, December 2018 onwards

Each line represents a half-hourly service in each direction. Only principal calling points are shown – some services will call at more intermediate stations. Proposed service pattern subject to change as timetable development continues.

Wimbledon Loop services originate from Luton in the morning peak, but terminate at St Albans in the evening peak. The position is reversed for the Kent services. This results in 12 trains per hour at Luton and Luton Airport Parkway, in the peak direction, in both the morning and evening peaks.



Solid line: Services run all day

Dashed line: Services run in both directions in peak

Light dashed line: Services run in peak periods in peak direction

Figure 1 *continued*
Thameslink and Intercity routes

This map shows the principal Intercity Express routes. The trains are also expected to call at other destinations including Bradford, Hull, Lincoln, Exeter and Torquay

Source: Department for Transport

Figure 2

Timelines for the procurement phases for both projects against plan

Thameslink programme

Original timetable for the programme

- **Nov 2008** Invitation to tender issued to bidders
- **Apr 2009** Closing date for bids
  Oct 2009 Preferred bidder selected
- **Mar 2010** Contract to be awarded
- **Jul 2013** First 14 trains in service

Timeline for the programme

- **Nov 2008** Invitation to tender issued to bidders
- **Jun 2009** Bids received from Siemens, Bombardier and Alstom
- **Jun 2010** Spending review Thameslink paused
  Nov 2010 Thameslink programme reconfirmed
- **Jun 2011** Siemens and Cross London Trains announced as preferred bidder
- **Jun 2013** Contract award

2007	2008	2009	2010	2011	2012	2013

Intercity Express programme

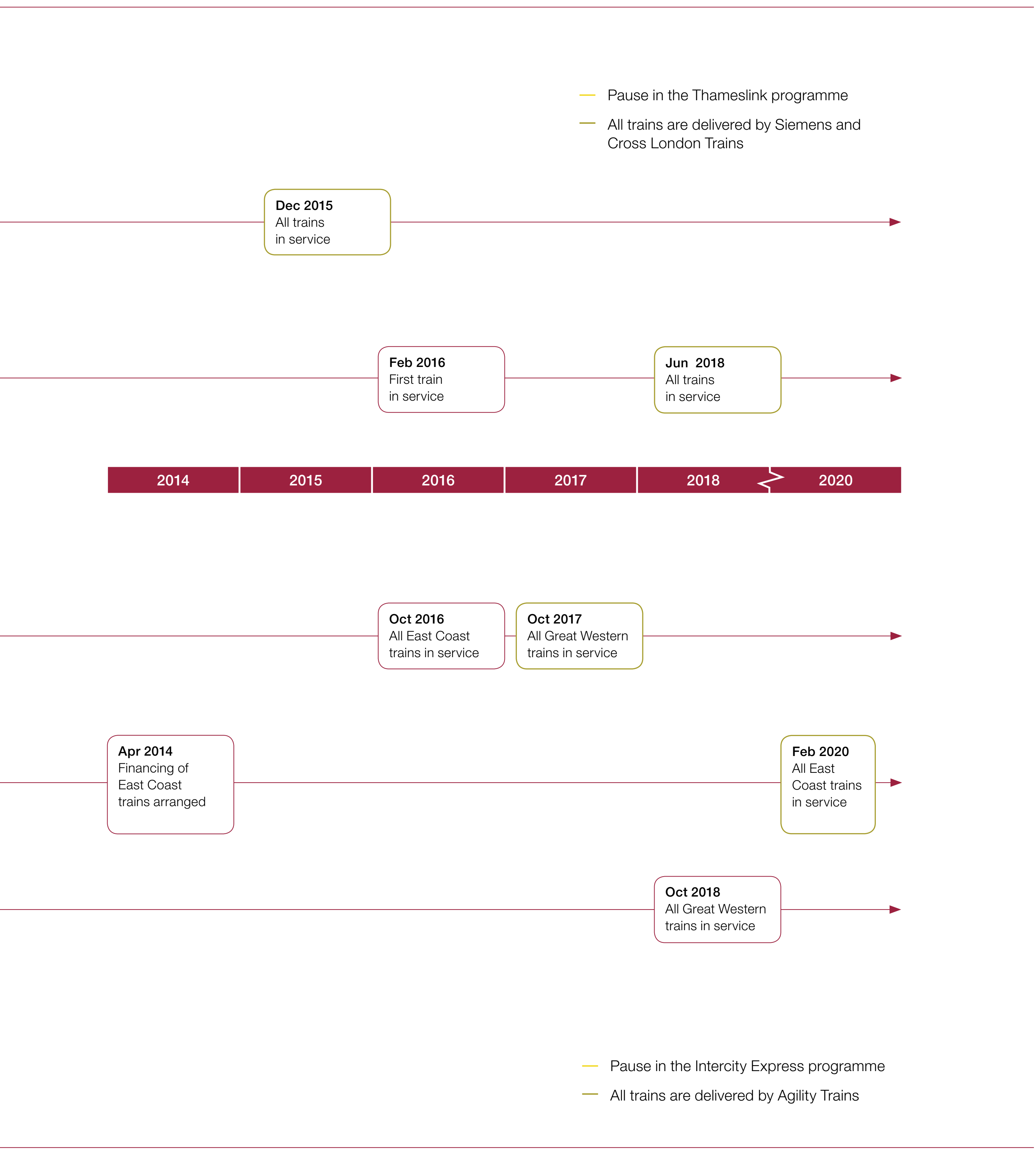
Original timetable for the programme

- **Nov 2007** Invitation to tender issued to bidders
- **May 2008** Closing date for bids
- **Apr 2009** Contract to be awarded

Timeline for the programme

- **Nov 2007** Invitation to tender issued to bidders
- **Jun 2008** Bids received from Express Rail Alliance and Agility Trains
- **Feb 2009** Agility Trains announced as preferred bidder
- **Feb 2010** Programme paused pending review of VFM by Sir Andrew Foster
- **Sep 2010** Agility Trains revise their bid
- **Mar 2011** Decision to proceed with Agility Trains' revised bid
- **Jul 2012** Contract awarded to Agility Trains, financing arranged for Great Western trains
- **Jul 2013** Department takes up option for additional East Coast trains

Source: National Audit Office analysis of the Department for Transport's documentation


Pause in the Thameslink programme
All trains are delivered by Siemens and Cross London Trains
Dec 2015 All trains in service
Feb 2016 First train in service
Jun 2018 All trains in service
2014
2015
2016
2017
2018
2020
Oct 2016 All East Coast trains in service
Oct 2017 All Great Western trains in service
Apr 2014 Financing of East Coast trains arranged
Feb 2020 All East Coast trains in service
Oct 2018 All Great Western trains in service
Pause in the Intercity Express programme
All trains are delivered by Agility Trains

Business cases and objectives

The need for new trains

1.5 The Thameslink procurement is part of a broader programme to provide congestion relief and capacity for growth on an expanded network. The business case for Thameslink sets out clearly that new trains were required to provide the frequency of service necessary to provide this capacity (24 services per hour in both directions between Blackfriars and St Pancras International). Our June 2013 report on Thameslink showed that in 2002 the Thameslink route was already the most crowded commuter route in London, and that demand was set to increase significantly.

1.6 In the case of Intercity Express, there was a need to replace existing intercity trains that were reaching the end of their expected time in service, having been brought into service between 1976 and 1982. There was also a need to increase capacity to meet forecast demand growth. The Department's business case when the programme was initiated shows that in 2005-06, a number of trains were only just providing sufficient seating capacity to handle demand and that by 2015-16, without increased capacity, many trains would be operating well above capacity.

Wider objectives

1.7 The Department aims to achieve wider objectives through the two programmes. **Figure 3** sets out the overall objectives of the programmes, which include both the train procurements and infrastructure elements. These objectives were largely driven by features of the wider rail system. For example, the type of trains procured is dependent on the characteristics of the infrastructure and, for Intercity Express, the Department originally intended to procure a fleet of trains with a range of modes of power: self-powered (diesel); trains that are powered by overhead electric lines; and trains which can use both forms of power (bi-mode), so that they could be deployed across the network to meet future needs.

1.8 Additionally, as trains incur significant running costs through, for example, energy consumption and maintenance, on both procurements the Department aimed to reduce the long term costs of the trains to the whole rail system, rather than focus solely on their capital costs. A March 2011 report commissioned by the Department and the Office for Rail Regulation shows that around 40 per cent of the total cost goes on maintaining and operating trains over their lifetime.[3]

3 Arup, *Rail value for money study: Rolling stock whole life costs*, March 2011.

Figure 3

Intercity Express and Thameslink objectives

Intercity Express programme	Thameslink programme
Increased carrying capacity per train	Longer trains can run on the route through central London, with improved reliability and frequency
A fast, reliable journey time	Passengers have less need to change trains or use London Underground to complete their journeys
Meet other customer requirements	Links with the wider transport network are improved, including Crossrail, the Channel Tunnel rail link at St Pancras, and Luton and Gatwick airports
Improve safety	Optimise value for money of the trains, taking a long term whole system approach
Provide an environmentally sustainable solution	
Minimise long term costs to the whole rail system	
Offer flexibility of deployment	

Source: Department for Transport

1.9 The Department also wanted to reduce wear caused by trains to tracks over time. The business case for Intercity Express states that some trains procured by train operators since privatisation had been excessively heavy, resulting in high levels of track wear, increases in the frequency with which tracks need to be replaced, and therefore high maintenance costs to Network Rail. There is also wider evidence to show that the weight of trains introduced to the network has been increasing since privatisation.

Incentives to train operating companies

1.10 The objective to reduce long term costs to the whole rail system was an attempt to address long-standing issues in the rail industry. The Department's 2004 White Paper *The Future of Rail* stated that the charges paid by train operating companies to Network Rail to access tracks bore little relation to the costs, such as those for repairing damage caused to tracks by the operators.[4] Sir Roy McNulty's 2011 report, *Realising the Potential of GB Rail*, showed that this issue had still not been resolved, stating that train operating companies have no incentive to minimise Network Rail's costs.[5] The Department is currently working with Network Rail and the wider industry to improve understanding about trains' impact on track maintenance costs in order to incentivise operators to consider leasing trains which minimise wider costs.

1.11 In 2010 the Department considered awarding longer franchises to operators as a means of incentivising them to consider long term costs and encourage investment in, for example, new, improved trains. However, following the cancellation of the Intercity West Coast Main Line in 2012, the Department reconsidered its approach in response to a review led by Richard Brown. The Department concluded that the franchise terms should be determined by the circumstances and size of each individual franchise.

4 Department for Transport, *The Future of Rail – White Paper*, Cm 6233, July 2004.
5 Sir Roy McNulty, *Realising the potential of GB rail: final independent report of the rail value for money study*, May 2011.

The Department's decision to lead the procurements

1.12 The Department's decision to lead the procurements itself meant a major departure from the system set up for train procurement after privatisation which intended that:

- train operating companies would procure trains, based on their own commercial judgements and requirements for their franchise set out by the Department; and
- rolling stock companies would provide the finance and own the trains, and then lease them to the operator.

The Department has, however, reserved the right to intervene in some circumstances, for example where the procurements cross franchises or are particularly large.

1.13 The Department decided to lead both procurements itself at an early stage in the programmes. On Thameslink, the Department made the decision because:

- the new trains would be used on three existing franchises where services would need to be amended as a result of the Thameslink programme; and
- the procurement was on a scale that exceeded the capacity of any single rolling stock company.

1.14 For the Intercity Express procurement, the key factor was its size, which was made particularly big by the decision to replace existing intercity trains with a homogenous fleet across a number of routes. The business case for Intercity Express states that a further reason for not leaving the procurement to industry was that, as set out above, operators were not incentivised to consider the long term costs to the whole rail industry.

1.15 The Department consulted with the industry throughout about its approach to both procurements. It also involved operators and representatives of the manufacturing industry in the design of the trains and the procurement requirements. Whereas the Department achieved good buy-in from the industry in its approach to Thameslink, it did not convince some parts of industry about the rationale for its approach to the Intercity Express programme, as evidenced by negative comments in the rail press.

1.16 The Department's decision to lead the procurements, which were larger than any in a generation, was despite not having led major rolling stock procurements before. To fill the gap in skills, it made extensive use of legal, technical, commercial and financial consultants and advisers. Having enough staff with the right skills and experience is vital to manage such programmes. As we have reported on other major programmes run by the Department, the Department's teams are often stretched and this was the case again.

Option appraisal

1.17 For both programmes the Department appraised different options for meeting its chosen objectives:

- **Thameslink**

  The Department commissioned a review, which compared the passenger volumes to be carried and the merits of buying trains already in the marketplace, to ordering a brand new fleet. The Department concluded that it would need a new fleet to run services through central London, given the high frequency of service.

- **Intercity Express**

  The Department's early business cases compared three broad options for improving services on intercity routes. These were: new intercity express trains; upgrades to existing intercity trains; and buying new trains based on designs already in service. This showed that the estimated long term cost to the whole rail system of running each new Intercity Express train would be higher than that of an upgraded existing high speed train, but that the Intercity Express train had higher long term benefits. Therefore, the Department concluded that buying new intercity express trains was the best option, because the benefit–cost ratio was higher than that of the other options.

Economic cases

1.18 For both programmes – which cover both infrastructure and rolling stock procurement – the Department forecasts that the benefits will outweigh the costs, but benefit–cost ratios have narrowed since they were initially approved (**Figure 4** overleaf). Benefit–cost ratios fluctuate as business cases are revised, reflecting, for example, changes in economic growth forecasts. The narrowing of the benefit–cost ratios for Intercity Express and Thameslink is partly because of increased estimated costs for the programme as a whole, and reduced estimates of passenger demand because of the financial crisis of 2008, which reduced forecasts of long term economic growth. The latest benefit–cost ratio for the Thameslink programme (trains and wider infrastructure programme) is 1.42, and for the Intercity Express programme it is 2.7. These benefit–cost ratios do not include any potential wider economic benefits.

Figure 4

Benefit-cost ratios of the two programmes (trains and wider infrastructure programme)

Thameslink

Date	Benefit–cost ratio[1,3]
2007	2.1
2009	1.4
2010	1.67
2012	1.64
2013	1.42

Intercity Express

Date	Benefit–cost ratio[1,2,3]
December 2006	5.0
May 2009	1.2
December 2009	2.0
June 2012	2.7

Notes

1 The benefit–cost ratios for each of the procurements are not directly comparable as they have been carried out at different times and are therefore based on different assumptions, for example on passenger demand forecasts.

2 The quoted benefit–cost ratios show the combined figure for the routes that trains were eventually procured for the Great Western Main Line and the East Coast Main Line, but exclude the contractual option to order further trains for the East Coast Main Line.

3 Benefit–cost ratios do not include wider economic benefits.

Source: Department for Transport business cases

Financing

1.19 On Intercity Express, the Department commissioned consultants to consider financing options for procurement of the Intercity Express trains. The subsequent report showed that a public sector option scored highly in some categories, but concluded that this option would not be value for money because the Department, as owners of the trains, would retain too much risk. For Thameslink, the Department did not explore what the costs and risks would be if the procurements were to be funded from the public purse. It considered that private financing was the only practical option because train procurements have been financed by the private sector since privatisation, and it decided it did not want to absorb the cost of this project at the expense of other transport priorities.

1.20 For both procurements the Department decided to procure a new consortium to build, finance and maintain the trains using a PFI-type approach. It decided not to use existing means of providing finance because it:

- considered that the size of the deals for each procurement was such that rolling stock companies would be unable to finance them on their own;
- considered that conventional leasing arrangements whereby rolling stock companies are paid regardless of how the trains perform did not provide value for money or incentivise high performance; and
- wanted to encourage new sources of finance into the rolling stock market.

However, the Department did not exclude rolling stock companies from joining bidding consortia, and one rolling stock company did join bidding consortia on both Thameslink and Intercity Express.

Part Two

The procurements

Scope and specification of the procurements

2.1 From the start, the Department defined the Intercity Express procurement more broadly than that for Thameslink, with key aspects of the Intercity Express procurement open to variation:

- The initial procurement notice in the Official Journal of the European Union stated that the Department would require between 500 and 2,000 carriages – a very wide range.
- The invitation to tender required bidders to submit proposals for six routes so that the Department could decide the routes for which it would buy trains, based on the prices and value for money of the bidders' proposals. This meant that train manufacturers and the Department spent time and money producing and evaluating bids for routes which were then excluded, although the information requirements for those routes were less onerous.

2.2 The Department told us that this was against a background of fast moving technical and design changes in the electrification of rail with the potential for cost reductions and a growing recognition of the investment priority of capital infrastructure as a contributor to wider economic growth. This changing landscape meant that the Department felt it was important to build flexibility into the Intercity Express programme, so that it could make changes to the procurement in response to changes in, for example, its approach to electrification. The Department told us this approach allowed bidders to show how they would deliver broad objectives such as reducing long-term costs to the rail system, and would enable the Department to base its decision on which routes to procure train services for on proposals submitted by bidders and to build into the procurement the ability to change the rolling stock type – for example, within an overall total it could change the profile of electric and diesel (or bi-mode) trains. However, in our opinion, this lay behind subsequent problems in the procurement. Our 2011 guide, *Initiating Successful Projects*, states that "a pre-condition for…running an effective competition for commercial partners is that everyone involved in delivering the project needs to clearly understand what must be delivered."[6] It also states that failure to do this can lead to scope creep and create confusion across the supply chain.

6 National Audit Office, *Guide: Initiating Successful Projects*, December 2011.

2.3 The Department's requirements for Intercity Express changed during the procurement. In 2009 – sooner than envisaged – the Department decided to electrify the Great Western Main Line, which meant that there was no longer a need for self-powered trains. The Department's early business cases show that when the invitation to tender was issued in 2007, the case for electrification was weak. The Department told us that by 2009, reductions in the cost of electrifying rail routes meant that it became a viable option. Electrification also reduced the number of trains required and, therefore, the cost of the programme.

2.4 For Thameslink, the Department required bidders to revise their bids three times as a result of external factors, including:

- changing their depot proposals due to problems obtaining planning permission; and
- structuring their proposed financing in two or more batches due to difficulties in the financial market.

Although these changes were, in our view reasonable, this delayed the procurement process by around ten months in total.

Level of competition achieved

2.5 We found that there are different views on what is the optimal procurement strategy to achieve value for money in the rolling stock market. One view is that smoothing demand could help to generate value for money. For example, the Strategic Rail Authority's consultation for its 2003 Rolling Stock Strategy stated that manufacturers strongly suggested smoothing new orders. Sir Roy McNulty's 2011 report *Realising the potential of GB rail* also said that value for money from procurement of trains depends in part on manufacturers having greater clarity of demand and the avoidance of peaks and troughs.[7]

2.6 Historically, there has been a pattern of peaks and troughs in demand. Numbers of new train carriages introduced to the network increased from around 150 in 1999 to over 1,300 in 2004, before falling to 210 in 2006 and only 15 in 2007. The Intercity Express, Thameslink and Crossrail procurements alone will introduce nearly 2,600 new carriages between 2016 and 2020.

2.7 We found that others, including some manufacturers and the Department, point to the fact that there is a global market for trains and that manufacturers are used to big orders. We were told that the manufacturers' response to competitions will depend more on their commercial considerations and what is happening in the market worldwide rather than concerns about capacity. Moreover, they believe that big orders can be helpful in introducing step changes in train design and in introducing new players to a market.

7 Sir Roy McNulty, *Realising the potential of GB rail: final independent report of the rail value for money study*, May 2011.

2.8 The Department's business case for Intercity Express showed that it was concerned that the rate and scale of production might result in manufacturers forming consortia, which could have an adverse effect on the level of competition. The Department sought assurances that bidders had the manufacturing capacity required, but this did not include an assessment of how winning multiple contracts at around the same time would affect capacity.

2.9 The procurements did attract interest from the main manufacturers that have supplied trains in the UK in recent years, and the level of competition compares favourably with that achieved for rolling stock procurements led by train operating companies since 2000. The trend for previous procurements had been for between one and three manufacturers to bid to supply rolling stock in the UK.

- The Department received five expressions of interest for both Thameslink and Intercity Express. The Department excluded two bidding consortia from the competition for Intercity Express and one from Thameslink because they did not meet the criteria required to be shortlisted.
- The Department received three full bids for the Thameslink procurement and two for Intercity Express, following the withdrawal of one of the shortlisted bidders from each competition.

2.10 Bidders did, however, form consortia and withdraw from the competition during the course of the procurements:

- **Thameslink**

  Although Thameslink received three bids, Hitachi Rail withdrew before putting forward a bid as it wanted to concentrate on delivering existing commitments, which included delivering the financing solution for Intercity Express, and bringing into service the domestic trains for the high speed line from London St Pancras to Kent.

- **Intercity Express**

  Two major manufacturers, Siemens and Bombardier, chose to produce a joint bid for Intercity Express, rather than forming separate consortia.

2.11 Siemens dropped its bid for Crossrail after it won the Thameslink contract, as well as other contracts, stating that another contract of Crossrail's scale could affect its ability to deliver its existing commitments. The Crossrail procurement received three bids.

Selection of preferred bidders

2.12 On both Thameslink and Intercity Express, the Department's evaluation of the bids, in accordance with evaluation criteria set out in the invitations to tender, concluded that the leading bidder had offered significantly better value for money, and that the second placed bidder was unlikely to be able to improve its bid enough to overcome this gap. On both procurements, the Department appointed the leading bidder as the 'preferred bidder', indicating that it was likely to award the contract to that bidder.

2.13 The time between the choice of a preferred bidder and contract award was much longer than normal. Absence of competition means substantial changes should not be made after this point. Both projects were delayed by continuing problems in the global financial markets, which affected the ability of the consortia and their supporting banking groups to raise finance, and by the 2010 Comprehensive Spending Review. There were other causes of delay that were particular to each project:

- Agility Trains was selected as preferred bidder for Intercity Express in February 2009. The contract was awarded in July 2012. This delay was partly caused by the decision to commission and respond to an independent review of the programme by Sir Andrew Foster.
- Cross London Trains was selected as preferred bidder for the Thameslink procurement in June 2011. The contract was awarded two years later, in June 2013. The Thameslink procurement was particularly affected by the eurozone crisis from 2010.

The Foster Review of the Intercity Express programme

2.14 In March 2010 the Secretary of State for Transport commissioned the former head of the Audit Commission, Sir Andrew Foster, to review the value for money of the Intercity Express programme and potential alternatives, putting it on hold in the meantime. The government did not consider it appropriate to enter a long term commitment in the immediate run-up to the 2010 general election, and paused the procurement because of:

- a reduction in the capacity of the financial markets to provide finance;
- lower than expected passenger growth, affecting the economic case for the programme; and
- the 2009 decision to electrify the Great Western Main Line, which changed the requirement and required extended contractual negotiations with Agility Trains.

2.15 Sir Andrew published his report in June 2010. One of the report's main findings was that the Department had not adequately assessed all the potentially viable alternatives and that it should do so before proceeding. The report also noted some criticism around the Department's procurement management model and its engagement and communication with the railway industry. However, the report stated that "the professionalism, skill and effectiveness of the independent expert advice and consultancy services it has commissioned have been of a good standard."[8]

2.16 Agility Trains approached the Department to discuss revising its bid for Intercity Express, and in September 2010, Agility submitted a revised proposal which claimed a 38 per cent reduction in costs. The cost reductions were achieved by a reduction in the number of trains to meet specified services, a revised and simplified train design, and a revised financing package. The Department told us that if Agility had not submitted its improved proposal, it is likely that it would have had to cancel the procurement.

2.17 Upon receipt of Agility Trains' revised proposal, the Department carried out extensive analysis of the revised proposition. This considered, among other things, a range of alternatives including those suggested by Sir Andrew Foster, the costs and delay to benefits from reopening the procurement, analysis of the likelihood and impact of a legal challenge, and the Department's view that another manufacturer would have been unlikely to produce a bid that could sufficiently close the gap with Agility Trains and offer better value for money. In March 2011, the Secretary of State announced that the Intercity Express programme would be resumed using Agility Trains' revised bid. However, because the Department did not reopen the competition and allow the other bidder (or anyone else) to submit further bids, the Department's view remains untested.

2.18 It is good practice to act transparently and quickly when dealing with unsuccessful bidders. For example, departments should promptly provide unsuccessful bidders with clear reasons why they have not been successful, and why the successful bidder had been awarded the contract. In the case of both Thameslink and the Intercity Express programme, the Department, in our view, could have done more to inform bidders directly of the features of the successful bids that led to them being awarded the contracts. On Intercity Express, for example, the Department kept bidders informed about progress but this was primarily through the media, Parliament and public meetings rather than communicating directly with them. In the event, a challenge to the Intercity Express procurement was raised but subsequently withdrawn.

8 Department for Transport, *Review of the Intercity Express Programme by Sir Andrew Foster*, June 2010.

Securing finance

2.19 The process of securing finance for these two very large procurements was particularly difficult because of their timing, during and immediately after the global financial crisis of 2007-08. Throughout the period of global economic instability and recession that followed, the availability of finance for infrastructure projects was severely limited. The scale of initial financing required on both procurements was unprecedented in the UK infrastructure project finance market. Intercity Express required £4.7 billion of initial financing in total (with £2.5 billion for the Great Western part of the procurement, and £2.2 billion for the East Coast part), while Thameslink required £1.8 billion. By the end of 2008, the Department recognised that neither project would be able to secure finance in its current form.

2.20 Despite worsening economic conditions, including the start of the eurozone crisis in early 2009, the Department continued to lead the projects itself and seek private finance. The Department did explore alternative options. For example, the Department explored using finance from HM Treasury's Infrastructure Financing Unit, which was set up to provide finance to PFI projects that were struggling to raise finance on the open market. However, the Department determined that it could still close the deals using its chosen approach. The Department considered that using public funding was not possible because budgets had been set at the previous spending review and the Department decided not to absorb the cost of this project at the expense of other transport priorities. Problems in the financial markets persisted, which meant lengthy delays on both projects throughout 2009 and the first half of 2010. During this time the Department faced a risk that it would have to cancel the projects due to the lack of available finance.

2.21 The Department has stated that while both projects were subject to continual challenge and reappraisal, it determined throughout 2009 and the first half of 2010 that their continuation remained a better solution for value for money than cancellation. On Intercity Express we could not find evidence that the Department considered options before the Foster review to change the scope of the procurement or break it down into smaller schemes, given the difficulties in obtaining financial support for the project. On Thameslink, the need for a full scale fleet to be delivered in coordination with the upgraded infrastructure meant that changing the scope of the project was not a viable option.

2.22 The Department did take steps to make it easier for bidders to secure finance in smaller tranches, in the expectation that market conditions would eventually improve:

- **Thameslink**

  The Department issued the invitation to tender in November 2008 with a requirement for each bidder to demonstrate committed finance for 30 per cent of the total financing requirement (compared to the 100 per cent required for Intercity Express). Its rationale was that the successful bidder would obtain the remaining 70 per cent of finance from the funders previously tied to the other bidders following its selection as preferred bidder. The Department also introduced 'batching' provisions in early 2009, breaking down the financing requirements into smaller batches, each of which could be secured separately.

- **Intercity Express**

  The Department also introduced batching provisions in January 2009, with the East Coast portion of the programme broken down into three funding tranches, spread over three years.

2.23 On both projects, batching exposed the Department to the risk of having to pay 'break costs' if the later tranches could not be financed. On Intercity Express break costs were estimated at up to £400 million. Ultimately batching was not needed on either project. By mid-2010, when the spending review paused both projects, neither had obtained committed finance for the initial debt tranche.

2.24 Both Thameslink and the Great Western element of Intercity Express reached financial close more than three years behind schedule. The East Coast element of Intercity Express reached financial close in April 2014 following the decision to exercise an option to order more trains (Part Five). On Thameslink, because the delivery timescale for the infrastructure upgrade has also been lengthened, delivery of the new trains remains aligned with infrastructure completion and introduction of the enhanced services, despite the delays. However, on Intercity Express, the delays will have a knock on effect on the timing of delivery of the benefits of the project and will have led to additional costs to the Department and bidders. For both projects we consider that the Department underestimated the time and level of resources that would be required to negotiate and finalise the contracts. The Department has pointed out that it faced exceptional circumstances on both procurements, which were entirely unforeseen in the financial markets.

2.25 The Intercity Express procurement resumed in March 2011. It reached financial close 16 months later, in July 2012, once Agility Trains had put together a viable funding package that made use of support from the Japanese Bank for International Cooperation, the European Investment Bank and from banks that were accustomed to working with the train manufacturer, Hitachi. The scale, the novel nature of the transaction as a PFI-type arrangement not previously adopted in the UK rolling stock market and the number of banks involved meant that the negotiation and agreement of financing terms required more time than would be expected for less complex, smaller transactions.

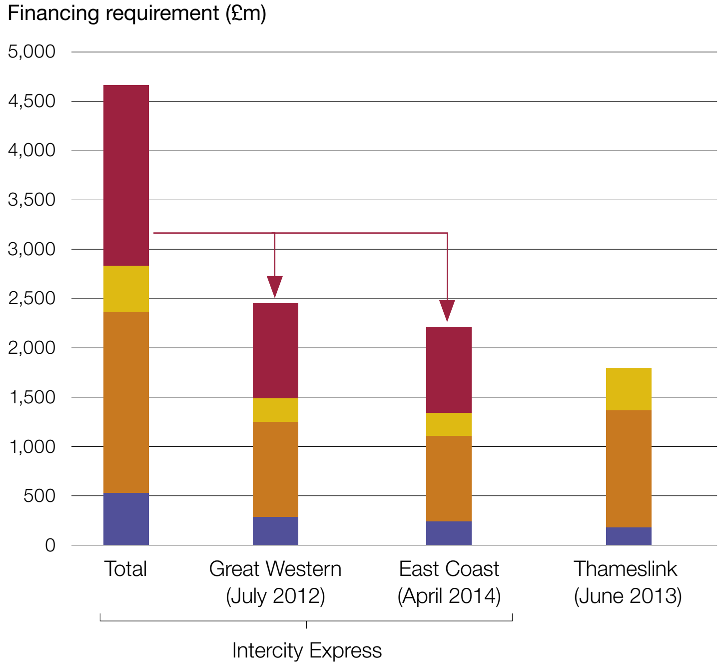
2.26 On Thameslink, Cross London Trains found it a challenge to obtain enough committed funding from its mainly European lending banks, given the ongoing crisis in the eurozone. Following Cross London Trains' appointment as preferred bidder with Siemens in June 2011, prospective lenders and their advisers concluded that the proposed contractual support from Siemens was insufficient, and they requested additional support. In mid-2012 Cross London Trains secured an additional contractual guarantee from Siemens' parent company, Siemens AG. In late 2012, the Department and Siemens held a workshop with some prospective financiers to explain the programme, and to enable the Department to satisfy itself that these financiers were willing to proceed. These measures helped, and by the first quarter of 2013 the Thameslink programme debt financing was oversubscribed, enabling the project to proceed to financial close in June 2013. In our view, the changes made to contract and price after the preferred bidder stage led to an increased risk of legal challenge, although no challenge was raised.

2.27 The Department eventually closed two very large deals in challenging market conditions. The Intercity Express programme was separated into two stages, as had been planned from the beginning, with financing for Great Western Main Line trains arranged in July 2012, and for the East Coast Main Line trains in April 2014. Financing for all Thameslink trains was arranged in June 2013. The financing requirements of both deals are shown in **Figure 5** overleaf.

Figure 5

Comparison of financing requirements for the projects

Intercity Express and Thameslink financing requirement at financial close



	Total	Great Western	East Coast	Thameslink
Debt – Japanese Bank for International Cooperation	1,827	963	864	
Debt – European Investment Bank	470	235	235	425
Debt – Commercial lenders	1,836	968	868	1,188
Equity finance	528	285	243	183
Total (£bn)	**4.7**	**2.5**	**2.2**	**1.8**

Source: National Audit Office analysis of Department for Transport data

Cost of the deals

2.28 The Department has provided analysis showing how the total costs of each deal (presented in terms of the present value of total contract payments due to the consortia over the lifetime of each project) have changed over time.[9] This indicates the following:

- **Thameslink**

  The costs proposed within Cross London Trains' initial bid in June 2009 were higher than the final costs at financial close. The most significant reductions came about as a result of lower financing costs although these were partially offset by later cost increases due to minor scope changes and a deteriorating euro exchange rate.

- **Intercity Express**

  Agility Trains reduced the cost of its bid significantly following the Foster Review in mid-2010. Thereafter, the value of the contract payments remained broadly similar until the award of the Great Western and East Coast contracts, with adjustments to reduce risk (which increased payments due to Agility) largely offset by improving financing conditions. The Department's decision in July 2013 to exercise an option for 270 additional carriages for the East Coast Main Line (see Part Five) then resulted in an increase in overall contract value, although the impact of the increased order was partially offset by a price reduction offered by Agility for the extended East Coast order.

2.29 The Department has put in place the option on both projects to require the supplier consortia to refinance either procurement at a later date and will receive the majority of the resulting benefits if this happens. This could improve value for money on both projects, given that cheaper financing is likely to become available if the trains demonstrate good performance and financing market conditions continue to improve.

2.30 For Intercity Express, we understand that, based on a comparison of the combined capital and maintenance costs per carriage, the fleets are more expensive than other broadly comparable new train types. This is a function of the Department procuring a new design for the trains that would deliver long term benefits, which the Department expects will outweigh the higher costs. **Figure 6** overleaf, sets out the cost of the deals, based on the total payments over the lifetime of the contract.

2.31 Thameslink contract payments comprise estimated payments over the 20-year usage guarantee period under three separate sets of contracts: train leasing payments; train service payments (i.e. maintenance); and depot lease payments.

9 Please note we are unable to publish details of these costs for reasons of commercial confidentiality.

Figure 6
Total value of the deals

	Intercity Express Total	Intercity Express Great Western	Intercity Express East Coast	Thameslink
Lease duration (years)	27.5	27.5	27.5	20
Present value of total contract payments (£m)[1]	7,646	4,098	3,548	2,759
Number of carriages in fleet	866	369	497	1,140
Total contract payments per carriage (£m)[2,3]	8.8	11.1	7.1	2.4

Notes

1 April 2014 prices.

2 The contract payments for the programmes are not directly comparable, as explained in paragraphs 2.31 and 2.32.

3 On Intercity Express the payments per carriage are higher for Great Western than for East Coast due to:
- a reduction in contract price offered by Agility for the additional East Coast fleet as a result of the Department exercising the option to procure an additional 270 carriages (see Part Five);
- lower costs of finance on East Coast due to this part of the deal reaching financial close in April 2014, when economic conditions and the Japanese yen to pound sterling exchange rates were more favourable; and
- a higher proportion of miles done by bi-mode trains in the Great Western fleet, which are more expensive to manufacture and maintain than the electric variants.

Source: National Audit Office analysis of Department for Transport data

2.32 Intercity Express contract payments comprise payments over the 27.5-year usage guarantee period under the Master Availability and Reliability Agreement. This entails leasing and maintenance of the trains and depots for the duration of this period. The contract payments on Intercity Express are higher than on Thameslink due to a number of factors including:

- a longer usage guarantee period than on Thameslink;
- payments include overnight cleaning and insurance of the trains (neither of which are included in Thameslink contract payments);
- the higher total annual mileage of the Intercity Express fleet, as well as a greater geographical range of operation with more depots being utilised, both of which increase maintenance costs;
- diesel engine traction for around 40 per cent of the Intercity Express carriages with bi-mode capability, which increases manufacturing and maintenance cost; and
- the design and layout of train interior to a higher specification than on Thameslink to cater for longer-distance passengers, which also increases manufacturing and maintenance costs.

Consequences of delay

2.33 As set out earlier, both procurements suffered significant delays, which increased the Department's costs and, in the case of Intercity Express, delayed the realisation of benefits, including:

- for both procurements, extra costs for staff and external advisers to manage the procurements;
- on Thameslink, extra costs for the train operator on the franchise to assist with the procurement and delivery of the new trains;
- on Thameslink, £34 million on top of the price of the procurement at preferred bidder stage to account for delays;
- inevitably, there will also have been increased costs for all the bidders, as a result of them having to keep bid teams together for long periods of time; and
- on Intercity Express, delays have resulted in the realisation of benefits being deferred.

2.34 The delay in delivering the trains for Thameslink also has implications for the Department's plans for the wider network. The Department initiated additional procurements for 286 carriages through Southern Railway to bridge the gap in train availability to allow existing Thameslink and Southern trains to be used as planned for electrification projects, and to increase capacity elsewhere within the southern franchise area. We previously reported that the incremental cost of leasing, operating and maintaining the first 170 of these carriages until the end of the current franchise would be £50 million and that the cost of the other 116 carriages was undetermined as the procurement process had not finished.[10] This remains the case, as the financing of the most recent order has not been completed. The Department expects this to be partially netted off by increased revenue and reduced operating costs. The Department expects that these trains will have a future use elsewhere on the network after the delivery of the new Thameslink trains.

2.35 On Thameslink, the Department avoided a potential further delay of 12 months by signing an Advanced Works Agreement with Siemens, enabling it to progress works on the maintenance depots before the contract was signed.

10 Comptroller and Auditor General, *Progress in the Thameslink Programme*, Session 2013-14, HC 227, National Audit Office, June 2013, Figure 9.

Part Three

The contracts

Obligations and risks under the contracts

3.1 On both programmes, the Department has put in place a contractual structure that puts the obligations and risks associated with the fulfilment of the following key objectives on to the suppliers:

- **Passenger capacity**

  The suppliers are responsible for the financing and manufacture of new train fleets that comply with the Department's output specifications, which require sufficient carriages and seats to operate the specified timetables and provide the required capacity.

- **Minimising long term costs to the whole rail system**

  The trains must comply with design and operational requirements designed to minimise costs. These include energy efficiency requirements and measures to reduce infrastructure wear and damage. All of the relevant train design characteristics will be subject to validation through the contractual acceptance criteria. On both projects, this is a prerequisite for the suppliers receiving any usage payments for the trains.

- **Ensuring fleet reliability**

  The owners will only be paid once the train operator receives the trains ready for use. Payments will be reduced if they fail to meet demanding performance and reliability criteria (which are not features of standard rolling stock contracts). Moreover, like rolling stock leasing companies, the owner consortia on Thameslink and Intercity Express will still own the trains after the end of the contracts. This means that they have an incentive to maintain the trains to a high standard, to get the most value from them after the contract ends. This differs from normal PFI procurements, where the asset reverts to public ownership when the contract ends, although it is normal practice in UK rail for rolling stock assets to remain in private hands.

3.2 The risks that remain with the Department for the two programmes are appropriate since they are within the Department's control, due to its wider role in the rail sector:

- The Department guarantees that the trains will be leased for 20 years on Thameslink and 27.5 years on Intercity Express. It intends to ensure that this happens by requiring franchisees to use the trains as part of the franchise letting process for the respective routes, as it has with the new Thameslink – Southern – Great Northern franchise.
- The Department carries some risk relating to the operators. For example, if an operator fails, it would be likely that the Department would need to make lease payments until it can appoint a new operator. The Department can mitigate these risks by ensuring it appoints competent and financially robust operators to the relevant franchises.
- The Department carries some risk if Network Rail should fail to deliver infrastructure upgrades that are needed to run the new trains. If the infrastructure upgrades are delayed, the Department will have to make lease payments for trains which cannot be used until the infrastructure work is complete. The Department is continuing to work with Network Rail to manage this risk as the programmes progress. This is discussed further in Part Four.

Contrasts between the contracts

3.3 On Intercity Express, Agility Trains is directly commissioned by the Department to provide the trains and the associated depot capacity under the Master Availability and Reliability Agreement. This gives the Department a 'hands-on' role in designing, testing and the acceptance of the new trains, with rights to withhold approval and request amendments to, for example, train design, or recommend alternatives. The Department considers that it needs to maintain long term control of the contracts to mitigate risk that the operator modifies the fleets in a way that could adversely impact the long term usability or flexibility of the trains. Such extensive Department involvement could, however, slow down decision-making, adding time and cost for all parties involved in the programme. By involving existing operators the Department has taken steps to mitigate this risk to date, but it will need to continue to effectively engage operators in the process and take a proportionate approach that avoids unnecessary compliance procedures.

3.4 The Thameslink contracts are more flexible, which we consider is likely to support more efficient decision-making to help reduce costs by giving those involved more options to develop the train service:

- The Department retains an oversight role through the Umbrella Agreement; this regulates key aspects such as the usage guarantee, contractual variation procedures and refinancing or termination scenarios.
- The Thameslink franchise operator can terminate its maintenance contract with Siemens at the first franchise change after year 10 of the 30-year contract and at every franchise change thereafter. This allows the introduction of competition for the maintenance contract, and incentivises existing or prospective maintainers to develop options for approaches that improve value for money.
- The Thameslink depots are funded and delivered under separate contracts from those for the rolling stock manufacture. The Department was therefore able to bring forward work on the depots, reducing the risk that delay might affect the introduction of the trains into service.

3.5 The contractual structures of both deals are complex and the Department will need to manage them closely and effectively to get value for money. This is discussed in more detail in Part Four.

Part Four

Managing risks to value for money

4.1 Beyond procuring the trains, the Department has other responsibilities that will affect whether the Intercity Express and Thameslink rolling stock programmes are value for money, these include:

- coordinating the delivery of the trains with infrastructure improvements on the routes;
- ensuring franchise operators and Network Rail have the right incentives to support demand growth, improve train performance and minimise costs; and
- managing the contracts for the delivery of the trains.

In addition, delivering value for money depends on other factors including passenger demand forecasts holding, and the benefits of the new trains, such as reductions in long term costs to the whole rail system being realised.

Coordinating the delivery of trains and the infrastructure

4.2 Both programmes require upgrades to the rail infrastructure for the new train fleets to operate to their full capacity:

- We reported on the Thameslink infrastructure programme in 2013,[11] when the programme was broadly on course to be completed by late 2018. The latest programme reports from Network Rail, which is carrying out the work, show that the programme is still on schedule.
- For Intercity Express, the most significant infrastructure upgrade is Network Rail's electrification of 235 miles of the Great Western route. This covers the routes between London Paddington, Bristol and Swansea. Half of the Great Western Intercity Express fleet (189 carriages in total) will run solely on electric power.[12] The electrification work must be completed in time for these trains to be introduced as planned in early 2018. We understand this work is currently over budget and the Department has highlighted it as a key risk. If the electrified sections are not available, the Department may have to pay any losses Agility Trains incurs as a result, which the Department estimates could be up to £0.4 million per day. The Department has sought to reduce this risk by scheduling delivery of the 'bi-mode' trains capable of operating without electrified infrastructure before the electric trains are delivered.

11 Comptroller and Auditor General, *Progress in the Thameslink Programme*, Session 2013-14, HC 227, National Audit Office, June 2013.
12 The rest of the new Great Western fleet will be 'bi-mode' trains capable of using either electric or diesel power.

4.3 An additional risk to the Department relates to works to connect the new Intercity Express train depots to the main lines. Network Rail is building the connections, but the Department would be liable for any losses if the trains cannot access the network if the connections are not complete. The Department told us that these works are currently planned to be delivered in advance of when they are needed. Should trains not be able to enter service as a result of delays to infrastructure enhancements, the Department estimates these liabilities at up to £0.8 million per day for the Great Western fleet and £1.0 million per day for the East Coast fleet.

Getting the right incentives for the train operators

4.4 Train operating companies will lease and operate the new trains under the following rail franchises:

- In June 2014, the Department awarded the Thameslink – Southern – Great Northern franchise, under which all services using the new Thameslink rolling stock will operate, to Govia Thameslink Ltd.
- For Intercity Express, the Department aims to award the East Coast franchise in November 2014 and the Department is yet to finalise its approach to renewing the Great Western franchise once the current franchise finishes in September 2015.

4.5 The Department must ensure that the availability contracts for both deals work as designed and achieve the desired level of train performance and cost management. To do so, the Department will need to ensure that the supplier consortia, Network Rail and the train operating companies work together and that their incentives and objectives remain aligned. The Department has embedded a number of measures within the different contracts to encourage the parties to work together cooperatively:

- The Thameslink rolling stock contracts place a clear onus on the future franchise operator to work with Cross London Trains, the manufacturer (Siemens) and Network Rail to ensure manufacture, delivery and acceptance processes are effective.
- The contractual documentation for the new Thameslink – Southern – Great Northern franchise, requires bidders to:
  - specify how they will work with Cross London Trains and the Department to successfully introduce the new trains;
  - appoint a dedicated project manager to manage the franchisee's contractual obligations for the new trains, report to and liaise with the Department to provide assurance that the trains are being delivered to programme; and
  - present proposals around operational testing and integration of the new trains, driver training and operational plans.

For Intercity Express, bidders for the East Coast franchise must set out how they will bring the new trains into service. The Department plans to require the next Great Western franchisee to do the same.

Managing the contracts to deliver the trains

4.6 After awarding the contracts to supply the trains, the Department needs to maintain its knowledge of the contracts and keep vital staff to manage them until the trains are delivered. On both projects the Department has retained the consultant who led the negotiations on each contract to oversee the contractual relationships. It has used civil servants to work alongside the consultants throughout the negotiation periods.

4.7 Once the trains are delivered, the train operators will be responsible for a large part of the day-to-day management of the contracts. During the operational period of the contracts it is likely that the operators and the owners (Cross London Trains/Agility) will wish to modify the trains to improve the passenger service offering, for example by adjusting the seat layout or amending catering facilities, as well as to improve the reliability or performance of the trains. There are provisions within the contracts limiting the scope for operator-led modifications or requiring explicit change control and approval processes to be followed. It is important the Department applies these selectively, and that in the long term it maintains a proportionate and flexible approach that avoids any risk of impeding operators or train service providers from implementing measures that support demand growth or reduce operational cost.

Part Five

The decision to order more trains for the East Coast Main Line

5.1 Up until 2009, the Department had intended to replace all the East Coast Main Line trains as part of the core order. This would mean replacing two existing fleets, one diesel powered and one powered by electricity. It then decided to separate the replacement of the electric trains from the core order because the weak economy reduced passenger forecasts and led to higher interest costs, undermining the case for replacing all the East Coast trains as soon as possible.

5.2 In July 2013, a year after signing its original contract with Agility Trains for Intercity Express, the Department exercised the contracted option to include 270 carriages at a cost of £1.4 billion,[13] to more than double the size of the fleet purchased for the East Coast Main Line from 227 to 497 carriages in total. These carriages replace the electric trains on the East Coast Main Line, which entered service in 1990. The option would have lapsed in August 2013.

5.3 The alternative to exercising the option would have been to leave it to train operating companies to decide whether to replace the electric trains. The Department's decision to exercise the option was informed by an analysis of costs and benefits of the options that bidders might consider such as refurbishing the existing trains or buying new trains. The Department drew on its own industry knowledge and cost information provided via an unsolicited proposal from Eversholt Rail Group (which owned the trains that would now be replaced), with input from East Coast Main Line Ltd.

5.4 The Department considered the Eversholt proposal to be the option most likely to be chosen by bidders if the Department did not exercise the option in the contract. Eversholt proposed to buy new locomotives and refurbish existing carriages rather than buying new trains. The Department's analysis suggested that the Agility option would provide slightly better long term value for money than the Eversholt proposal, after taking into account a 7.5 per cent cost reduction offered by Agility Trains and consideration of the likely benefits that future operators would gain from having a single, homogenous fleet on the East Coast Main Line, though this judgement was sensitive to changes in the Department's assumptions.

13 Cost expressed in 2014 prices, present values.

5.5 The Department considered two other factors in deciding to exercise the Phase 2 option:

- Agility Trains offered to upgrade all the trains, at no extra cost, to allow them to run at 140 miles per hour on the electrified network. This capability is subject, however, to infrastructure improvements on the East Coast and Great Western lines which the Department does not currently plan to undertake.
- The Department believed that exercising the option would give bidders for the East Coast Main Line franchise greater certainty about the trains they would be using. In addition, given that bidders would have needed time to engage with manufacturers and potential financiers exercising the option also gave the Department a better chance of meeting its commitment to let the franchise by February 2015. Specifying the trains would reduce the complexity of the franchising process, as recommended by the National Audit Office and the Brown Review following the breakdown of the West Coast Main Line franchise process in 2012.[14]

Impact of the decision on industry

5.6 The Department recognised that it was departing from its existing policy on rolling stock procurement. In March 2012, the Department announced that as a general principle, potential franchisees would have greater flexibility over rolling stock decisions in order to make the most of private sector expertise. The government's role in the rail system would be to set high-level strategic priorities (without specifying in detail how the priorities would be met), and to incentivise the industry to implement the strategy. The Department took steps to explain to rolling stock companies and train manufacturers its reasons for exercising the option. However, the Department has not convinced parts of the industry, which has led to questions about the Department's commitment to its stated policy.

14 National Audit Office, *Lessons from cancelling the InterCity West Coast franchise competition*, HC 796, Session 2012-13, 7 December 2012; Department for Transport, *The Brown Review of the Rail Franchising Programme*, Cm 8526, January 2013.

Appendix One

Our audit approach

1 This study examines whether the Department for Transport is well placed to get value for money from the procurement of new train services for the Thameslink and Intercity Express programmes. Our key areas of review were:

- the rationale and objectives for proceeding with the procurements;
- the procurement of the trains;
- the contracts to provide the trains;
- the risks to securing value for money; and
- the case for the order of additional trains under the Intercity Express programme in 2013.

2 Our audit approach is summarised in **Figure 7**. Our evidence base is described in Appendix Two.

Figure 7
Our audit approach

The objective of government

The Department for Transport's objectives are:

- to increase capacity on the Thameslink route by running higher frequency, longer trains on an expanded network; and
- to replace an ageing fleet of intercity trains on the Great Western and East Coast Main Line routes.

How this will be achieved

The Department for Transport will procure the trains under PFI-type arrangements. The successful bidders will design, build, finance and maintain the trains and be paid for their usage by train operators, subject to meeting specified performance and availability levels.

Our study

The study examines whether the Department is well placed to deliver value for money from the procurement of rolling stock for the Thameslink and Intercity Express programmes.

Our evaluative criteria

Was there a clear rationale for the procurements?

Was the procurement of the trains managed efficiently and effectively?

Are risks to securing value for money being effectively managed?

Was there a clear rationale to support the decision to order more Intercity Express trains?

Our evidence

(see Appendix Two for details)

We assessed the Department's rationale for the procurements by:

- reviewing **departmental documents** including the business cases;
- **interviewing** key staff at the Department, HM Treasury and industry stakeholders;
- reviewing the findings of **internal and external challenge**; and
- drawing on **our previous work**.

We assessed the Department's management of the procurement process by:

- reviewing **departmental documents**;
- **interviewing** key staff at the Department, its advisers, HM Treasury and bidders;
- reviewing the **contracts**; and
- reviewing the findings of **internal and external challenge**.

We assessed the Department's management of the contracts and risks by:

- reviewing **departmental documents**; and
- drawing on **our previous work**.

We assessed the Department's decision to order more trains by:

- reviewing **departmental documents**; and
- **interviewing** key staff at the Department and industry stakeholders.

Our value for money conclusions

The Department had broad objectives for both procurements to minimise the effects of long-standing issues in the rail industry, including reducing the long term costs to the whole rail system and improving the reliability and availability of trains by transferring risk to the train service suppliers. The Department has signed contracts for the provision of new train services in line with these objectives. The Department has begun working with industry to address the issues around long term, whole system costs more generally.

We are not able to conclude fully on value for money on either project until the new trains are in service and benefits are being realised. This is dependent on the Department and train operators managing the contracts and the wider programmes effectively, and assumptions, such as passenger demand forecasts, holding true. We are concerned that in the case of Intercity Express, the Department decided to proceed with a revised bid without competition, which means that the Department's view that no other manufacturer could offer better value for money is untested. The Department has the opportunity to gain from future reductions in the cost of financing for both procurements to improve value for money.

Appendix Two

Our evidence base

1 Our independent review of the Thameslink and Intercity Express programmes was completed following analysis of evidence collected between October 2013 and April 2014.

2 We considered how well the Department is placed to achieve value for money from the contracts it has signed for the Thameslink and Intercity Express programmes. Our audit approach is outlined in Appendix One.

3 We assessed the clarity of the Department's rationale and objectives for the procurements:

- We reviewed departmental documents including submissions to the board and other decision-makers to understand the basis for the Department's decisions to lead on both procurements and to adopt a PFI-type arrangement.
- We interviewed key staff at the Department and HM Treasury to obtain further information about the Department's rationale for leading on the procurements, its adoption of a PFI-type arrangement, and its objectives for the procurements.
- We interviewed train manufacturers to obtain information about their understanding of the Department's decisions to lead on the procurements and to adopt a PFI-type arrangement.
- We reviewed the Thameslink and Intercity Express procurement business cases against HM Treasury best practice.
- We reviewed the results of internal and external challenge to establish whether findings and recommendations on the development of the business cases had been acted upon.
- We drew upon our past work on Progress in the Thameslink Programme.

4 **We assessed the Department's management of the procurement process:**

- We reviewed departmental documents relating to the key stages of the procurements. These included the invitation to tender, correspondence with bidders and a description of the procedure used to evaluate bids.
- We reviewed departmental documents submitted to the Department's decision-makers to understand the basis for decisions taken at each stage of the procurement.
- We reviewed the legal, financial and technical advice provided to the Department by its external advisers.
- We interviewed key staff at the Department, its external advisers and HM Treasury to obtain information about the Department's involvement in how the procurements were to be financed and its understanding of bidders' cost assumptions.
- We interviewed bidders to obtain further understanding of how the Department engaged with them during the procurement process, particularly on the evaluation of their bids, and on the financing of the procurements.
- We reviewed the contracts to analyse the extent to which the Department achieved its original objectives and minimised its potential liabilities.
- We reviewed the results of internal and external challenge to establish whether findings and recommendations on the management of the procurements had been acted upon.

5 **We assessed how effectively the Department is managing the contracts and risks to securing value for money:**

- We reviewed departmental documents including its risk registers to understand how the Department was managing the range of dependencies on which the realisation of the benefits of the new trains will rely.
- We drew upon our past work looking at large PFI projects, for example our studies on the M25 and the Future Strategic Tanker Aircraft Programme.

6 **We assessed the clarity of evidence supporting the Department's decision to order more trains under the Intercity Express programme in 2013:**

- We reviewed departmental documents to understand the scope of the assessment it undertook in reaching its decision.
- We interviewed key staff at the Department to obtain further information about the case for proceeding with the order for more trains.
- We interviewed train manufacturers and rolling stock companies to understand the implications for industry of the decision.

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