

1. Commercial Case

1.1 Purpose

The purpose of the Commercial Case for the East Coast Main Line (ECML) Enhancements Programme is to assess the commercial viability and attractiveness of the recommended option for implementation.

There is an opportunity to better serve Long Distance High Speed (LDHS) passenger markets on the ECML by reducing journey times, increasing service frequencies and seating capacity and serving new destinations. The drivers for the ECML Enhancements Programme are set out as part of the Strategic Case.

On the basis of industry consultation, existing franchise plans and the development of the business case, the outcomes the Department requires from the ECML Enhancements Programme are as follows:

- Long Distance High Speed (LDHS) seating capacity into London increased by 38% from approximately today's 2900 to 3950 seats per hour;
- An increase in capacity from 6 to 8 LDHS services between London King's Cross and Doncaster and from 5 to 6 LDHS services between Doncaster and Newcastle per hour;
- Maintain freight capacity for current and Freight Market Study¹ forecast demand, using diversionary routes as far as practicable; and,
- A reduction in journey times for the fastest LDHS services in each hour to 4 hours between London and Edinburgh and 2 hours between London and Leeds.

At this point in time, these outcomes are conditional and trade-offs will need to be made as further work is completed by Network Rail (NR) to develop the timetable for May 2021. Since the Outline Business Case (OBC), an Industry Planning Group (IPG) has been convened by NR, involving Department for Transport (DfT) and operators, to begin to develop the new timetable.

1.2 Output Specification

The Programme consists of a number of infrastructure interventions along the line of route, which fall into three specific categories:

- IEP enabling works: These schemes are mostly delivered and consist of the works required in order to physically operate the Government-procured IEP rolling stock when it is introduced in 2018, replacing the ageing East Coast franchise fleet. This includes gauge clearance to ensure that the trains are compatible with the existing infrastructure, platform lengthening, balises and depot connections.
- Power supply upgrades: A power supply upgrade at the south end of the route is already delivered. An additional intervention will provide an increase in the capacity of the power supply north of Doncaster, enabling LDHS and local services to operate in electric on the East Coast.
- Capacity enabling works: This consists of a number of schemes focusing on resolving known bottlenecks at locations along the line of route, delivering an increase in track capacity for LDHS services. This includes the grade separation of Werrington Junction, enabling an uplift in passenger and freight services on the route.

A more detailed description of the Programme is set out in the Management Case.

¹ Network Rail Freight Market Study, 2013

1.3 Procurement Strategy

1.3.1 Infrastructure Enhancements

Infrastructure enhancements will be managed through the extant CP5 process, and CP6 process, as refined by the Hendy and Bowe reviews and in line with the DfT and NR Memorandum of Understanding (MOU) signed in March 2016² and clarified in the Rail Network Enhancements Pipeline guidance published in March 2018³. The governance approach is set out in the management case.

Delivery of rail infrastructure enhancements is the responsibility of NR and its sub-contractors whilst rolling stock procurement is normally the responsibility of the relevant franchisee. There is a critical interface with the DfT's Intercity Express Programme (IEP) which is overseeing the procurement of high speed electric and bi-mode trains that will be used by the East Coast franchisee. The TransPennine Express (TPE) franchise is separately procuring equivalent bi-mode trains that will operate on the ECML.

The infrastructure enhancements required by the Programme are set out in the NR Enhancements Delivery Plan and the Management Case. The outputs require a combination of power supply upgrades, alongside new and remodelled track, gauging and platform lengthening work.

NR Sponsor teams will deliver the required enhancements primarily through NR's Infrastructure Projects organisation. Contractual arrangements have been developed on a scheme by scheme basis by NR and are subject to NR's investment governance processes. The arrangements for the key schemes are set out in section 1.4 below.

1.3.2 Franchises and Freight

The Programme will require franchise changes alongside infrastructure interventions to achieve the planned outcomes and benefits. A proposed train service has been used in this business case to test whether the infrastructure enhancements are value for money. The awarding of the actual capacity on the East Coast will be a matter for DfT's Passenger Services in conjunction with NR and the ORR. Implications for franchises will be considered by the relevant Passenger Services commercial managers.

During CP5, the Department has let four franchises which use the ECML: Govia Thameslink Railway (GTR), Virgin Trains East Coast (VTEC), Northern and TPE. In the case of all of these franchises, there is an expectation of increasing the number of services in operation over the ECML during late CP5 and early CP6 (in addition to CrossCountry who already operate on a significant portion of the route).

Virgin Trains East Coast

The VTEC franchise is the main passenger franchise delivering services on the ECML. Due to current financial concerns, the Department is in negotiation with VTEC over the approach to the remaining franchise term. The Department expects interim arrangements to be put in place from mid-2018 to 2020, either as a direct award to the incumbent or through the Operator of Last Resort.

During this interim period to 2020 there are no significant planned increases in services other than service extensions to Edinburgh, Bradford, Harrogate and Lincoln from May 2019.

In 2020, the Department plans to put in place an East Coast Partnership between NR and a new passenger franchise operator. A significant uplift in passenger services is planned for May 2021

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509545/mou-dft-network-rail-rail-enhancements.pdf dated March 2016

³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691719/rail-network-enhancements-pipeline.pdf dated March 2018

which will see additional services to and from London. This is reflected in the infrastructure outcomes which will see the capacity increase to allow up to eight long distance high speed paths per hour into and out of King's Cross.

Govia Thameslink Railway

The GTR franchise was let as a management contract due to the nature of completing the Thameslink Programme, particularly in relation to the completion of the London Bridge station upgrade. As a result, the DfT takes on all revenue risk from changes to services.

New Thameslink and Great Northern services will be introduced progressively onto the ECML from May 2018, affecting the route south of Peterborough. In particular, the completed power supply work on the south of the route supports the introduction of these services as well as the introduction of the new IEP trains.

The franchise is due to be re-competed in 2021.

TransPennine Express

The TPE franchise, awarded in December 2015 for the period April 2016 - March 2023, sets out in the Franchise Agreement contractual commitments to increase the level of services TPE operates north of York, first to Newcastle before extending to Edinburgh. The TPE franchise commitments deliver benefits across the north of England that the Rail North organisation of 25 local authorities has signed up to and is aligned with the Northern Powerhouse agenda that the Government has promoted.

[REDACTED] TPE is currently operating two trains per hour north of York but this is only on a temporary basis. TPE have yet to apply for these rights in the long term and they did not form part of the ORR's May 2016 decision on ECML access. TPE plan to procure a new bi-mode train fleet on the basis of electric power being available.

Northern

As part of their bid, Arriva aspired to provide an additional Northern service from Middlesbrough to Newcastle via Durham (and therefore the ECML). [REDACTED]

[REDACTED]

Other franchised operators

The CrossCountry franchise utilises the ECML from Doncaster to Newcastle and Edinburgh. There are no committed changes to CrossCountry services. However, as this franchise is due for renewal in 2019, there is a potential opportunity to review CrossCountry services north of York.

Although operating predominantly on the Midland Main Line, East Midlands Trains operate some services from Sheffield to Leeds in the early morning and late evening peaks. They also operate a sizable local service that interacts with the ECML, serving Grantham, Newark, Skegness, Lincoln, Grimsby and Spalding therefore providing greater connectivity than those locations immediately along the line of route. The long distance Norwich to Liverpool service also traverses the ECML near Peterborough.

Freight

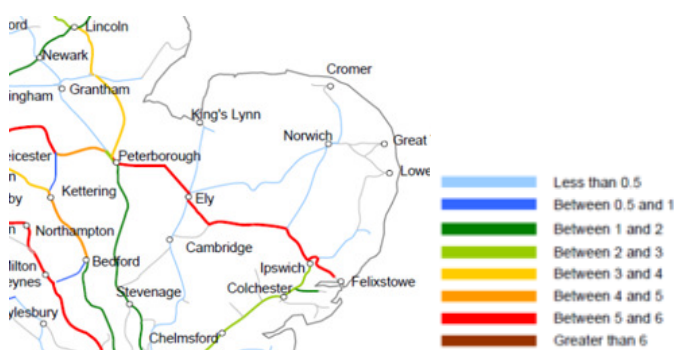
Analysis conducted since the OBC has shown that the assumption of two freight paths per hour along the length of the ECML is significantly in excess of the current freight usage and, in places, is in excess of the future freight forecasts.

Freight usage on the south of the route (King's Cross – Peterborough) connects the deep water London container ports with destinations in the Midlands and the North. The maps below, which show the ECML running through Stevenage, Peterborough and Grantham, summarise the 2013 Freight Market Study Central Case forecasts of freight demand over the next 30 years on the southern end of the route (in total freight train paths per hour):

2023/24 Forecast



2043/44 Forecast



The ECML south of Peterborough, and the route between Peterborough and Doncaster via the GN/GE line, have the potential to accommodate an uplift in freight traffic. By 2043, traffic from the port at Felixstowe is expected to rise significantly, increasing utilisation of the GN/GE line to Lincoln and further north. Capacity released by the opening of HS2 Phase 2b in 2033 presents an opportunity for the ECML to accommodate further freight growth but future investment may be required to facilitate this. Grade separation of Werrington Junction will allow the forecast near-term growth in freight traffic to access the GN/GE route without conflicting with fast passenger services on the ECML, thus maximising the return on the Government's CP4 investment in upgrading the GN/GE route.

Between York and Newcastle the ECML provides connections with the ports at Teesside, Sunderland, Tyneside and Blyth with a mix of heavier and lighter container freight traffic. The freight flows are greater between York and Northallerton where much of the freight connects from the east. North of Northallerton there is less demand with forecasts showing that this will remain less than one train per hour.

The infrastructure proposals in this Programme seek to maintain the capacity currently used by freight as well as making provision for the forecast growth in demand out to 2043.

Future Franchise Competitions

Competitions for the East Coast Partnership, which is expected to commence from late 2020, and the re-letting of the CrossCountry franchise, planned for 2019, will be developed on the basis of the ECML Enhancements Programme plan at the time of the respective invitations to tender. Network Services and Passenger Services will work closely together to ensure the specifications for the East Coast Partnership and CrossCountry franchise reflect the actual delivery of infrastructure and take into account the risk of slippage or cancellation in infrastructure projects.

1.4 Sourcing Options

Infrastructure enhancement works will be delivered by NR who have developed commercial strategies for each scheme. Hub and spoke models have been used for the key schemes in the Programme. This approach sees NR Infrastructure Projects acting as the design and delivery integrator for the schemes with a number of prime contractors in place to lead on the various areas of infrastructure e.g. signalling, overhead lines or civils work.

1.4.1 Werrington Scheme

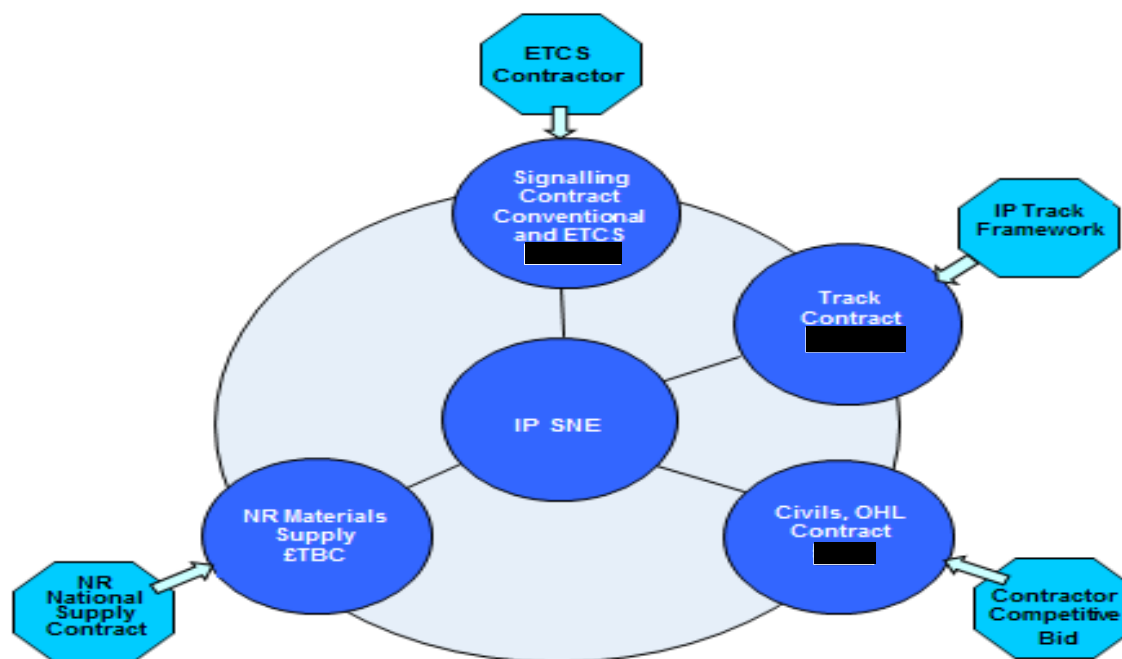


Figure 1 Werrington Contracting Approach

NR has let a single framework for the two projects to deliver the design, construction and Overhead Line Equipment works requirements of the scheme. Jacobs is acting as the lead design integrator on behalf of NR and Morgan Sindall has been appointed as the primary civil contractor.

A framework has been set up to cover the Werrington scheme under which time-limited packages of work will be let by discipline. This allows flexibility of approach and timescale from NR whilst reducing any further burden of a tendering process.

Firm prices have been sought for the design contracts. The Civils and other works are to be procured on the basis of an agreed set of framework rates with resource and activity plans. These contractor submissions have been through rigorous reviews by both the NR project and commercial teams as well as external comparison with other comparable schemes. The estimates have also been subject to an Independent Assurance Review by DfT. The independent review clarified the assumptions and detailed costings for the scheme and in particular set out the work required to take commit to deliver decisions for the schemes as well as what was required in GRIP 4 for the scheme. The recommendations in the independent review are being progressed by NR and jointly monitored with DfT clients.

The contracting approach was taken based on the following considerations:

- presenting a tender scope that provides appropriate incentives to the supply chain, in terms of works, timescales and value;
- optimum Contractor engagement in the early development of the projects - these are key lessons learned from evaluating procurement of similar works on Crossrail and Thameslink;
- flexibility to accommodate emerging project scope;
- creating a single supplier for the Peterborough area driving efficiencies for access, logistics, application of Common Safety Method and interface management;
- creation of a collaborative relationship;

- core management team responsible for GRIP3-8 delivery strategy providing continuity from 'Approval in Principle' to completion;
- collaboration with Jacobs at the design stage to enable informed transition to the delivery phase; and
- efficiencies in NR resource during procurement and delivery phases.

NR have assessed whether a further competitive tender process between the design and delivery stages would provide better value for money. They have concluded that whilst there might be some financial savings on delivery costs this is likely to be outweighed by the risks of transferring designs between contractors and that the delivery contractor might not accept the designs as produced, incurring further cost and delay.

1.4.2 Power Supply Upgrades

The power supply upgrades will be delivered through the Rail Electrification Alliance (REAL). This Alliance has been used to successfully deliver the power supply upgrade works between King's Cross and Bawtry (near Doncaster) and will now lead on the further power supply upgrades north of Bawtry (PSU2).

The Alliance comprises the following:

- NR
- Siemens - traction power design, supply, installation and SCADA (Supervisory Control and Data Acquisition)
- J Murphy and Sons - civil works and structures, cable and cable routes
- VolkerRail - overhead line equipment works and signalling works
- TSP Projects Limited - professional consultancy and design support
- Jacobs - professional consultancy and design support

PSU2 has moved into the detailed design phase of the contract with the Alliance. The option selection, design and works for each stage of phase 2 have been split into the following contracts:

- GRIP 3 – fixed price contract
- GRIP 4 – fixed price contract
- GRIP 5-8 – target cost contract

Separate contracts will be awarded for each stage with the relevant Distribution Network Operator (DNO) for the works required on their infrastructure.

Contract awards will be staged based upon funding availability and ongoing achievement of performance metrics by the REAL Alliance.

The strategy to use the REAL Alliance is consistent with the original NR strategy and will enable the project to enact lessons learned from earlier phases. By working through GRIP 3-8 with the same contracting entity, the project will also be able to act on best practice from other alliancing projects across NR, where audits and reviews found that early ownership of the design by the alliance led to decreased risk as the projects developed.

There is a proposed break point in 2020 when the scheme will be transitioning to GRIP 5 ahead of delivery.

1.4.3 Other ECML Schemes

Stevenage works are at the GRIP 3 stage and NR plans to award the GRIP 4 work to a framework contractor and to competitively tender the GRIP 5-8 work.

King's Cross Remodelling is in the GRIP 4 stage and NR plans to award a multi-disciplinary GRIP 5-8 contract through their existing frameworks in June 2018. The signalling element is being contracted separately through NR IP Signalling.

Peterborough Down Slow is currently in the detailed design stage which is being conducted by Atkins. The scheme will be delivered (GRIP 6-8) through NR Infrastructure Projects and will be governed by an internal NR works agreement.

IEP enabling works are largely complete or in final delivery.

1.4.4 Train services

Delivery of the new train services and benefits to customers will be enabled through the franchise agreements (Intercity East Coast, TPE, XC, GTR and Northern) as well as through open access operators (GC, HT and FG). This includes the introduction into service of the new rolling stock such as the IEP.

1.5 Risk Allocation and Transfer

Risks relating to the Programme's outcomes will be managed between DfT's Intercity team, major projects teams, franchise teams and NR as appropriate. Ultimately the Department will continue to hold the majority of risks regarding services, franchising, rolling stock and infrastructure issues, irrespective of which organisation is best placed to manage those risks.

The management of risk processes applied to the Programme are set out in the Management Case.

Technical and commercial risks relating to the delivery of the infrastructure enhancements will mostly be managed by NR. Costs are ultimately likely to fall to the Department so the overall risk is still held by DfT. Significant risks are reviewed through the ECML Programme Board.

NR will seek to transfer technical and delivery risks to its contractors, where possible, through incentivisation contracts. The NR delivery contracts include pain / gainshare clauses to incentivise delivery to time and cost. The key projects will award target cost contracts once approval has been given for delivery.

The Department has visibility of contingency allocation within the various projects and will actively manage this with NR during the delivery phase of works to ensure value for money.

1.6 Human Resource issues

NR already has a multidisciplinary team working on the ECML Enhancements Programme, with extensive experience of operations on this route and the infrastructure options available.

There are key technical skill areas where resource is an issue and these are managed closely by NR. This includes technical expertise relating to power systems and signalling. NR has investigated procurement of further resource and is managing the issue on a national basis.

1.7 Implementation (Contract) Milestones

Milestones/Deliverable	Dates
Revised ECML Enhancement Delivery Plans – ACHIEVED	Sept 2016
Outline Business Case for ECML Enhancements Programme - ACHIEVED	May 2017
Full Business Case for ECML Enhancement Programme	May 2018
Thameslink enabling works completed and enhanced Thameslink services introduced	May 2018
Introduction of IEP Electric Rolling Stock Starts	Dec 2018
Enhanced ICEC timetable introduced	May 2019
AT300 new rolling stock introduced on Trans Pennine route	Sept 2019
ECML Timetable Increment – 8 Long Distance High Speed Paths from King’s Cross	May 2021

1.8 Contract Management Approach

Significant work has taken place between NR and DfT to synchronise progress and financial reporting. The two organisations are now moving to a more active, contractual approach to the delivery of the Programme’s outcomes.

1.8.1 Programme Delivery Statement (PDS)

The PDS will set out the commitments of NR and DfT, in terms of general roles and responsibilities, specific deliverables, costs, behaviours and any other appropriate commitments. The PDS will be signed by Network Services Director (DfT) and Route Managing Director (NR), giving a formal commitment from both organisations to keep to its terms, or for any change in its terms to proceed through an agreed change control process (which will be outlined in the PDS). This approach has already been implemented on the Midland Main Line Enhancement Programme.

The PDS will be authored with the intent of maintaining commitment by NR and DfT to the principle of the joint MOU which was entered into on 17 March 2016.

The core principles of the MoU, following the recommendations of the Bowe Review, are:

- clarification of the Department’s role as the funder and client on the Government’s behalf for infrastructure investments, and Network Rail’s role as the system operator and principal delivery partner;
- agreed documentation on the scope, costs, outcomes and benefits of all projects;
- new arrangements for the control of costs and the management of change;
- a revised governance structure founded in improved management information and arrangements for the early identification of problems and their resolution; and
- joint responsibility for continuous improvement, value for money and efficiency.

Accordingly the PDS will “contractualise” these requirements between NR and DfT, specifically for the ECML Enhancements Programme. The intent is that the PDS will be signed within one month of the FBC scope being finalised and approved by the Secretary of State for Transport.