





# Croxley Rail Link

## Procurement Strategy

Croxley Rail Link

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Hertfordshire County Council

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# 1 Introduction

The Croxley Rail Link is a proposed diversion of the Watford Branch of the Metropolitan Line to Watford Junction station via Watford High Street station. New stations will be provided on the new rail link at Ascot Road, which forms a strategic park and ride site for the area, and Watford General Hospital. As part of the scheme the existing Metropolitan Line alignment to the current Watford terminus on the suburban fringe will be closed, with services diverted to serve Watford Junction station.

Hertfordshire County Council is the Project Sponsor.

The scheme comprises:

- A viaduct and embankment linking the current Metropolitan Line 1.3km south of the existing Watford terminus to the disused Croxley Green Branch Line (CCG/WCG) between Croxley Green and Watford High Street junction.
- Reinstatement of double track on the disused Croxley Green Branch Line alignment, including the reinstatement of the Watford High Street junction on the Watford Junction to London Euston DC route (CWJ).
- Work to bring the bridges, cuttings and embankments on the disused Croxley Green Branch Line into operational use, to LU Standards.
- New stations at Ascot Road and Watford Hospital on the Croxley Green Branch Line
- Works to the existing Network Rail stations of Watford High Street and Watford Junction.
- Works to the existing Network Rail DC Lines infrastructure between the reinstated Watford High Street junction and Watford Junction station (CWJ)
- An additional rolling stock unit to deliver the extended services.



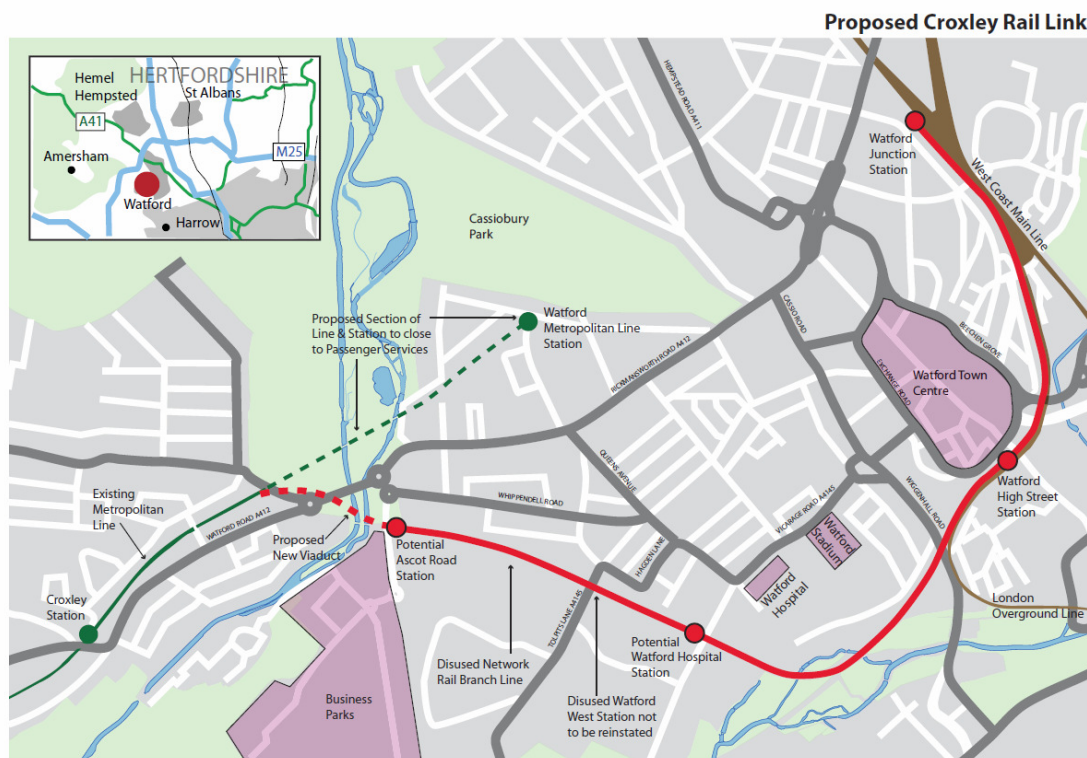


Figure 1: Proposed Croxley Rail Link

This strategy paper sets down the options, issues and proposals in relation to high level procurement of all aspects of the Croxley Rail Link project.

It examines separately optional strategies for:

Section 1	The existing Metropolitan Line Section. This Section is currently owned by LU and will remain in their ownership throughout and after construction.
Section 2	The new viaduct, embankments and bridges connecting Sections 1 and 3
Section 3	<p>The disused Croxley Green Branch Line (CCG/WCG). The ownership of the disused branch will transfer to Hertfordshire County Council prior to construction work taking place. It includes the proposed new stations of Ascot Road and Watford Hospital.</p> <p>Upon transfer, HCC will commission enabling works to include Japanese knotweed and other environmental, or ground investigations, required to facilitate the main contract.</p>
Section 4	The Network Rail DC Lines (CWJ). This Section is currently owned by Network Rail and will remain in their ownership throughout and after construction, although there may be some LU owned and operated infrastructure on it. It includes the existing stations of Watford High Street and Watford Junction.

This paper does not deal with specific Contract Forms for packages.

Recommendations are currently being sought from Turner and Townsend on the appropriate standard form of contract to adopt, but the contract will be set on a contractor 'design and build' basis with a pain-gain target cost feature.

## 2 Methodology of Arriving at Procurement Strategy Decisions

In order to reach agreement between Hertfordshire County Council (HCC), London Underground (LU) and Network Rail (NR) on relevant procurement strategies for the various sections, a procurement strategy meeting was held on 18th May 2011 attended by the following:

Name	Organisation
Mike Younghusband	HCC
Juliet Cromack	HCC
Steve Godman	Mouchel
Steve Parkinson	Mouchel
Kim Wilson	Mouchel
David Leboff	LU
Rob Tamkin	LU
Paul Hillier	LU
Ander Broadman	NR

The structure of the meeting was to consider the various options available for each Section, and to reach agreement on the option acceptable to all parties and best for the project.

## 3 Infrastructure Procurement Options by Discipline

### 3.1 Introduction

Options for the procurement strategy for each of the disciplines are detailed below. The options for each discipline are broken down initially either by Section or discipline depending upon whether the works can be carried out independently within each Section or, by their nature, need to be spread over different Sections and cannot be considered on an individual Section by Section basis.

The preferred procurement strategies are then summarised in section 6 of this report.

### 3.2 Civil Engineering (including Station Structure Works)

#### 3.2.1 Section 1 - Metropolitan Line

##### Options

This work could be carried out through the existing LU frameworks or added into the Section 2 and 3 contracts.

##### Issues

Issues involved in the decision are assurance, in terms of achieving required quality for LU purposes; value for money by letting larger contracts if possible; and use of contractors acceptable to LU.

##### Proposed Strategy

It is proposed to include infrastructure for the Metropolitan Line with the package for the Sections 2 and 3, but to use an LU approved contractor. This is considered to provide value for money as well as meeting Assurance requirements. Assurance issues are dealt with in section 3.13 of this paper.

#### 3.2.2 Section 2 and 3 – New Viaduct and Disused Croxley Green Branch Line

##### Options

This work could be let to a civil engineering contractor, or be undertaken by a specialist rail contractor.

##### Issues

Issues involved in the decision are assurance, in terms of achieving required quality; and value for money by letting the contract to a civil engineering contractor if possible, as a specialist rail contractor with additional overheads and more highly regulated assurance procedures is likely to be more costly. The land ownership transfer will be completed before construction starts (NR will advise the Office of Rail

Regulation of the change of land use from Operational Property to Freehold Sale for the purposes of constructing a new rail link).

#### Proposed Strategy

It is proposed that infrastructure for this Section should be let by HCC to a suitable civil engineering contractor. This would give greater value for money. Assurance issues are dealt with in section 3.13 of this paper.

### 3.2.3 *Section 4 – Network Rail DC Lines*

#### Options

This work could be let with the Section 2 & 3 work or through a Network Rail framework contract.

#### Issues

There is a need for this work to go through the Network Change and Station Change (Industry) processes in order for the enhancements to proceed beyond GRIP 4 (Single Option Development). These processes are required to gain TOC/FOC acceptance of the proposed changes and without their acceptance the enhancements cannot be delivered and brought into service. This can be achieved by using a Network Rail approved contractor.

#### Proposed Strategy

It is proposed to include infrastructure for the Network Rail Section 4 with the package for Sections 2 and 3, but to use a Network Rail approved contractor. This would provide greater value for money as well as meeting Assurance requirements. Assurance issues are dealt with in section 3.13 of this paper.

#### Conclusion

A single contractor approved by LUL and NR shall undertake all civil engineering works. The contractors will be requested to identify how they will engage mainstream civil engineering skills and practices to deliver the works in Section 2 and 3 within their quality bid to avoid the traditional premiums charged for railway works.

## 3.3 **Permanent Way**

### 3.3.1 Options

Section 2 and 3 could be undertaken through an HCC procured contract, with LU and Network Rail procuring Sections 1 and 4 respectively. Alternatively, all permanent way works could be undertaken by a single Network Rail/LU approved contractor procured by HCC, or alternatively by a single Network Rail or LU contractor direct.

### 3.3.2 Issues

The main issue is one of Assurance, although value for money is relevant in relation to size of contract to be let, as well as minimisation of interfaces to reduce risk, simplification of approvals processes and compliance with CDM.

### 3.3.3 Proposed Strategy

It is proposed to include all permanent way works within the HCC infrastructure contract and for work to be undertaken by an LU/Network Rail approved contractor. This addresses all of the above issues and results in value for money from the point of view of size of contract, although this results in use of a rail contractor who would typically be more expensive than a non rail civils contractor. It was decided that a single contract would be better than splitting civils and permanent way works due to interface risks and programming constraints.

## 3.4 **Gatelines and Ticket machines**

Prestige currently has an agreement with LU to supply and fit all gatelines and ticket machines on the LU network. New gatelines and ticket machines are required at the new LU stations at Ascot Road and Watford Hospital on Section 3. It is not practical for third parties to procure these works. Consequently this work will need to be undertaken by Prestige.

## 3.5 **Information Systems and Train Radio/Station Radio**

Connect currently has an agreement with LU to supply and fit all information systems and train / station radio systems on the LU network. Options for dealing with these works in all Sections are for them to be undertaken by Connect, who maintain them, or for the works to be undertaken by a third party with Connect buy-in and in accordance with their requirements.

In order to minimise interface issues it would be preferable to incorporate this work into the main HCC contract. Consequently the second course of action is proposed.

## 3.6 **Traction Power**

### 3.6.1 Options

UK Power Network Services Powerlink (formerly EDF Powerlink) is responsible for managing, operating, and maintaining the electrical power network for LU.

Work could be undertaken by Powerlink through LU for Sections 1, 2 and 3, with Network Rail undertaking their own procurement for Section 4, or by a contractor procured by HCC, with Powerlink and Network Rail adopting.

### 3.6.2 Issues

The main issue is one of assurance, although this could be satisfied if an LU/Network Rail approved contractor undertook the works, suitable assurance was undertaken, and works were adopted by Powerlink and Network Rail. Value for money and interface risks are also issues.

### 3.6.3 Proposed Procurement Strategy

It is proposed for traction power work for all Sections is undertaken through the HCC procured contract. This would satisfy all of the above issues.

## 3.7 Rolling Stock

### 3.7.1 Procurement

Rolling stock would need to be procured from Bombardier, who are currently supplying the Metropolitan Line upgraded fleet, through LU, as integration and maintenance would be difficult if rolling stock were procured from any other party. In addition it is not practical to maintain different types of rolling stock on a single line. Supply will include testing and commissioning.

### 3.7.2 Purchase/lease

There are options to purchase or lease the required trainset and a decision will be made after further investigation as part of the Value Engineering exercise.

## 3.8 Signalling/Telecommunications

### 3.8.1 LU Signalling (Sections 1, 2, 3 and 4)

The signalling system required to control LU trains for all Sections will need to be compatible with that installed on the rest of the Metropolitan Line. LU has recently appointed a contractor (Bombardier) to install a new moving block system on the Metropolitan Line with work commencing in 2013 and programmed for completion in 2018. Signalling and telecommunications for the Croxley Rail Link could therefore either be procured through LU, or direct from LU's contractor. Issues to be considered are assurance, programme, interface risks and value for money. It should be noted that some of this work (overlying of LU signalling) will need to be undertaken on Section 4, which is owned and operated by Network Rail. HCC would also be responsible for the signalling and control systems integration which will facilitate NR retaining control of the DC route post implementation

If any traditional signalling is required to cover the period before moving block signalling is completed, it could be let as a separate contract by HCC or incorporated into their main contract. Issues would be assurance, interface risks and value for money.

### 3.8.2 Network Rail Signalling (Section 4)

Improvement work will also be required to the existing Network Rail signalling on Section 4 so that the existing LOROL train service can continue to operate on the upgraded infrastructure and revised track layout on the Section. The Options for signalling on this Section are for it to be undertaken by a Network Rail contractor or by a third party. Issues to be considered are value for money, interface risks and assurance.

### 3.8.3 Proposed Procurement Strategy

In order to satisfy assurance, programme and value for money issues, it is proposed that LU negotiate a variation with their contractors to carry out the design and installation of moving block signalling and telecommunications equipment in all Sections. To minimise the interface risks, HCC would be responsible for overall project integration and discussions will take place with LU's contractors for HCC's contractor to undertake any enabling works in advance.

Any required legacy signalling/telecommunications and Network Rail signalling/telecommunications in Section 4 would be carried out to the applicable standards by HCC's contractor in order to satisfy the above issues.

## 3.9 Road Improvements

It is proposed that any road improvements required are included in HCC's main contract.

## 3.10 Station Signage

It is proposed that all signage is procured through HCC's main contract. LU signs will be need to be designed by LU signs unit. Any amendments to the existing signage at Watford High Street and Watford Junction will be agreed with the current SFO's LOROL and London Midland respectively. LU standards for signage will apply at Ascot Road and Watford Hospital.

## 3.11 Testing and Commissioning

### 3.11.1 Rolling Stock

Testing and commissioning of rolling stock is proposed to be included in the supply contract for the rolling stock.

### 3.11.2 Rail Systems

It is proposed that HCC procure resources from LU to undertake testing and commissioning on all rail systems.

### 3.11.3 Stations

It is proposed that HCC procure resources from LU to undertake testing and commissioning on rail systems.

### 3.11.4 Safety Case

It is proposed that HCC procure resources from LU to undertake testing and commissioning on rail systems.

## 3.12 Professional Services

### 3.12.1 Design

Procurement of design services will depend on the Contract Strategy adopted by HCC.



3.12.2 Project and Programme Management

Procurement of Project and Programme management services will depend on the Contract Strategy adopted by HCC.

**3.13 Assurance**

3.13.1 Risks

There is a high risk in terms of time and cost if assurance is carried out separately on sections of work by LU, Network Rail and HCC. This would be mitigated by setting up a project assurance group.

3.13.2 Proposed Strategy

It is proposed to set up a project specific assurance group including LU, Network Rail and HCC, together with the TOCs who will be operating Watford High Street and Watford Junction stations at the time that the works are being implemented (currently LOROL and London Midland).

## 4 Tender List

### 4.1 EJEU Notices

Appropriate EJEU notices will need to be issued by HCC for this work which will include the appropriate LU and Network Rail competencies required.

### 4.2 Choice of Contractors for Tender List

Following responses from EJEU notices the list of tenderers will be drawn up by HCC in consultation with LU and Network Rail.

## 5 Pre-Contract Works

Certain works will be required to be completed early on in the programme, possibly before the main contracts are let. These will include the following.

### 5.1 Ground Investigation

In order to complete the detailed designs, geotechnical ground investigations and contaminated land surveys will be required along all Sections of the line. This will require work to be undertaken on land and infrastructure currently owned by LU, Network Rail, HCC and possibly third parties. This will include work on the existing Network Rail operational railway in order to allow the design of the platform extensions at Watford High Street and Watford Junction stations.

Along Section 3 and parts of Section 2, this work will require the clearance of vegetation before the investigations can be completed.

### 5.2 Topographic Surveys

The topographic survey that has been used for the design up to date is up to 10 years old and was restricted at the time that it was undertaken due to the extent of vegetation and land ownership issues. To allow the detailed design to proceed to the precision required, a further topographic survey will be required of the whole route, including the operational Network Rail and LU sections.

Along Section 3 and parts of Section 2, this work will require the clearance of vegetation before the survey can be completed.

### 5.3 Vegetation Clearance

The following areas of the route are currently heavily overgrown with vegetation:

- East side of LU embankment in Section 1
- Eastern end of Section 2 adjacent to the River Gade
- Whole of Section 3.

These areas will need to be cleared of vegetation in order to allow the topographic survey and ground investigations to be completed. In planning and undertaking this works, the following will need to be considered:

- The presence of nesting birds and the nesting bird season
- The presence of invasive species which are being fully identified as part of the Environmental Impact Assessment. Japanese knotweed has been observed along and directly adjacent to Section 3 on both Network Rail and HCC land. This will need to be destroyed before works can start in this area. Network Rail has advised that this process can take three years to complete.

#### 5.4 Further Design

As part of the current work, the design is being developed to a detail suitable for the submittal of the BAFB and TWAO. Dependant upon the procurement and contract strategies adopted, further design work may be required prior to contract award in order to meet the programme requirements and to allow sufficient time for assurance to be completed for both LU and Network Rail.

## 6 Summary of Proposed Procurement Strategies

The following is a summary of the proposed procurement strategies by Section and discipline:

Discipline	Section	Proposed Procurement Strategy
Civil Engineering	1 – Met Line	Let by HCC to suitable contractor who is both LU and Network Rail approved
	2 – Viaduct	
	3 – Disused Line	
	4 – DC Lines	
Permanent Way	1 – Met Line	Let by HCC to suitable contractor who is both LU and Network Rail approved
	2 – Viaduct	
	3 – Disused Line	
	4 – DC Lines	
Gatelines and Ticket Machines	1 – Met Line	N/A
	2 – Viaduct	N/A
	3 – Disused Line	Let via LU to Prestige
	4 – DC Lines	N/A
Information Systems and Train Radio/Station Radio	1 – Met Line	Let by HCC to suitable contractor who can sub-contract to Connect
	2 – Viaduct	
	3 – Disused Line	
	4 – DC Lines	
Traction Power	1 – Met Line	Let by HCC to suitable contractor for adoption by Powerlink
	2 – Viaduct	
	3 – Disused Line	
	4 – DC Lines	Let by HCC to suitable contractor

Discipline	Section	Proposed Procurement Strategy
		for adoption by Network Rail
Rolling Stock	N/A	Procure via LU from Bombardier
Signalling / Telecommunications	1 – Met Line	Procure via LU from Bombardier
	2 – Viaduct	
	3 – Disused Line	
	4 – DC Lines (LU Signalling)	
	4 – DC Lines (Network Rail Signalling)	Let by HCC to suitable contractor who is Network Rail approved
Road Improvements	N/A	Let by HCC to suitable contractor
Station Signage	1 – Met Line	N/A
	2 – Viaduct	N/A
	3 – Disused Line	Let by HCC to suitable contractor who is LU approved
	4 – DC Lines	Let by HCC to suitable contractor who is LU and Network Rail approved
Testing and Commissioning	N/A	HCC procure services from LU
Professional Services	N/A	Dependant upon contract strategy
Assurance	N/A	Combined Assurance team to be formed by HCC with LU and Network Rail cooperation