

# Executive Summary

## Introduction

1. This document forms the Major Scheme Business Case (MSBC) submission to the Department for Transport (DfT), seeking Programme Entry for Croxley Rail Link. It is the culmination of recent development work on the project including significant updates to transport models in line with discussions with DfT. Although it represents an update of the February 2008 MSBC submission, it is a stand alone document, with all relevant information concerning the assessment of the scheme included in this document and its associated appendices. Key additions since the February 2008 submission include:

- London Underground Limited (LUL) have completed an estimate of the incremental operating costs for the proposals (Section 4);
- updated Quantified Risk Assessment (Section 5, Appendix B), risk register updated and annotated to include risk owners (Appendix B);
- independent cost review conducted by Volker Rail (Appendix B);
- updated Communications Strategy (Appendix D);
- written statement of support from the region (Appendix E);
- written confirmation of support and commitment to progress the scheme from TfL; (Appendix E);
- new bus surveys and data collection to inform updates to transport models (Appendix K);
- update to transport models and demand forecasting report (Appendix K);
- inclusion of New Approach to Appraisal worksheets (Appendix L);
- wider impacts assessment (Section 13, Appendix M);
- updated Appraisal Summary Table (Section 18);
- establishment of Project Board with Network Rail, LUL and HCC (Section 19);
- updated project plan and process map (Section 20, Appendices O and P); and
- updated Monitoring and Evaluation strategy (Section 23).

This update fully addresses the issues raised by DfT in its response to the February 2008 submission.

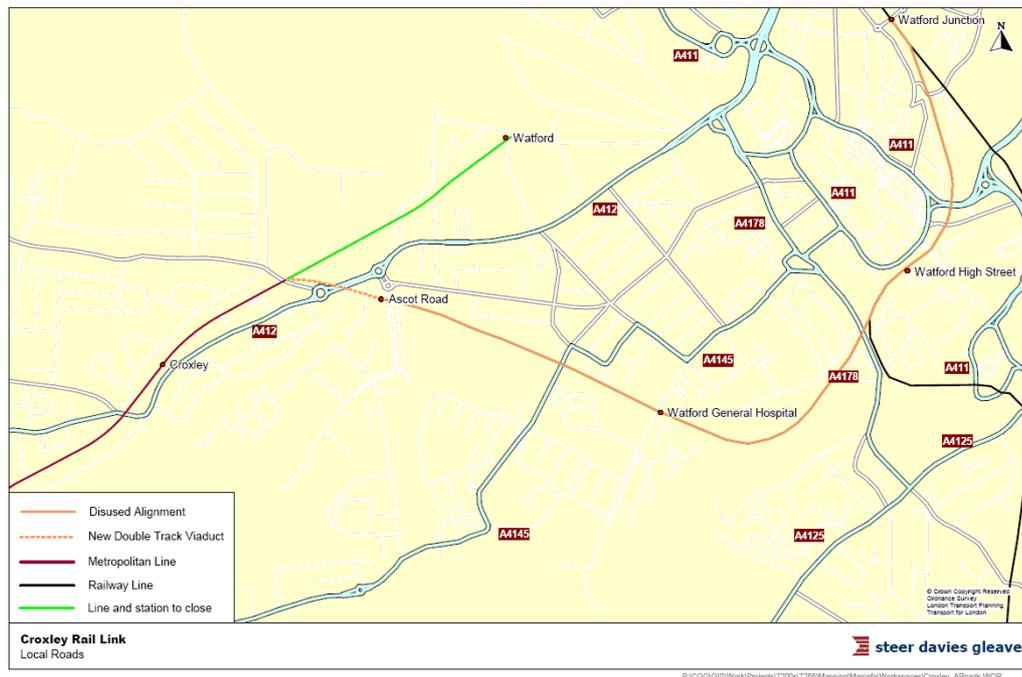
2. Under the Croxley Rail Link proposals, the Croxley Green Branch line will be reconstructed and brought back into use. A new viaduct, some 400m in length including embankment, would connect the branch line with the Metropolitan Line - which would close between Croxley and Watford. The branch line connects with the National Rail DC Lines loop south of Watford High Street station; Underground services would share track with Overground services to access Watford Junction station. New stations would be provided at Ascot Road (replacing Croxley Green) and Watford General Hospital. Figure 1 shows the scheme and its location within Watford.

3. In summary, the Croxley Rail Link increases the population served by the London Underground connection between Watford and London; improves access from the Metropolitan Line into Watford town centre; and creates interchange opportunities between Underground services and National Rail services at Watford High Street and Watford Junction stations.

4. A benefit of the long project history is that each of the promoters has undertaken its own cost and risk assessment and reviewed the existing assessments, from their individual perspective. This has helped to ensure that engineering and operational assessments are

robust, giving a high level of understanding of costs and impacts. The proposed scheme has therefore been subject to challenge from all key stakeholders and the detailed development studies have been focused on achieving a robust scheme.

**FIGURE 1 CROXLEY RAIL LINK ALIGNMENT**



5. The Croxley Rail Link scheme has active support from key stakeholders, including a commitment from London Underground Limited (LUL) to operate services and pass through the net operating surplus to HCC in support of a local financial contribution. Network Rail are fully engaged with the project, as existing owners of the heavy rail alignment, and because of the interface/interaction with the operational Direct Current (DC) lines through Watford High Street station into Watford Junction station. A Strategic Board has been established which consists of Network Rail, LUL HCC and advisors, meeting on a monthly basis.
6. Programme entry is required at this stage to ensure the scheme is implemented within the proposed timetable to consolidate the work already completed and the position of the scheme within the business plans of key stakeholders, whilst allowing the momentum of scheme development to continue through statutory processes. There is a great deal of stakeholder support for the project and programme entry at this stage will strengthen that support and reduce the potential risk of support being reduced as a result of delay. The Secretary of State for Transport's instruction to Network Rail to protect the alignment expired in November 2007. Loss of the corridor, which cuts through potential development sites, would be catastrophic for the proposals. Network Rail currently has a policy in place to protect the alignment for rail improvements, but could theoretically change their policy and sell it. Protection is now effectively only through the development agreement between the promoters and Network Rail. This agreement is dependent on continuing progress towards implementation of the proposals, in turn dependent on receiving timely programme entry.
7. Watford has enjoyed economic prosperity over recent years and has become established as a major attractor for employment, retail and leisure trips. It is a retail centre of regional importance and it has been designated as a Key Centre for Development and Change (KCDC) within the London Arc. However, there are signs that the town has started to suffer from its own success, with congestion threatening future growth and the town's KCDC role together with the resultant decline in quality of the living environment for residents.

## Scheme Promoters

8. The current MSBC for Croxley Rail Link is being promoted by Hertfordshire County Council (HCC). The contact details of the promoter are as follows:

<p><b>Mike Younghusband</b>  Head of Transport Programmes &amp; Strategy  Hertfordshire County Council  Highways House  41-45 Broadwater Road  Welwyn Garden City  AL7 3SP</p> <p>mike.younghusband@hertshighways.org.uk  Tel: 01707 356551  Fax: 01707 356550</p>	<p><b>Tom Duckmanton</b>  Project Manager  Mouchel  209-215 Blackfriars Road  London  SE1 8NL</p> <p>tom.duckmanton@mouchel.com  Tel: 020 7803 2730  Fax: +44 020 7803 2601</p>
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## Capital Costs

9. Error! Reference source not found. Table 1 summarises the capital costs for the preferred scheme.

**TABLE 1 CONSTRUCTION COST SUMMARY**

Cost Item	£000 Jan 2007 prices
Construction costs	£51.87
Preliminaries	£11.02
Contractor Overheads	£4.72
Design	£4.00
Project Management	£3.35
Assurance	£1.89
Third Party Costs	£7.78
Possession Costs	£0.50
Land Costs	£4.00
Public Inquiry	£1.00
Vehicle Costs (one additional set)	£8.30
Third Party Compensation	£0.25
Monitoring and evaluation (at ½% of scheme costs)	£0.43
<b>Scheme cost excluding Risk</b>	<b>£99.11</b>
Risk Allowance from QRA	£12.70
<b>Total</b>	<b>£111.81</b>

10. Based on allowances made on similar projects, advice from DfT and the allowances made in the Regional Funding Allocations (RFA) construction cost inflation has been assumed at 4.5% pa in nominal terms (2.0% real assuming RPI of 2.5%). The impact of current financial circumstances is not expected to have any residual impact on cost inflation over the projected timescale for construction.
11. The forecast outturn cost is **£172 million**. On this basis it is anticipated that the Department for Transport (DfT) cap on the cost of the project would be at **£146.0 million** (uplifted by half of the optimism bias adjustment of 22%).

## Strategic Case

12. Scheme objectives were originally developed through identification of problems and opportunities relevant to the area through the South West Herts Transportation study. These objectives were reviewed during this update of the MSBC to confirm that they are still relevant. Table 2 sets out the list of scheme objectives identified for the purposes of option development and selection.
13. The Croxley Rail Link proposals are completely in line with the identified scheme objectives and make a significant contribution towards their achievement. While the Lower Cost Alternative (Croxley Busway) scheme is also in line with the identified objectives, in each case its contribution towards achieving the objective is less significant than would be delivered by the Rail Link scheme. This is predominantly the result of the local, rather than regional, influence of the busway scheme.
14. The Croxley Rail Link is in line with relevant national, regional and local policy and has the support of all stakeholders.

TABLE 2 SCHEME OBJECTIVES

Area	Objective
Accessibility	Further enhance Watford Junction as a regional transport hub.
	Provide improved and direct access to jobs in the north west and centre of London.
	Enhance east-west passenger transport links across Hertfordshire and make more journeys seamless.
	Provide more sustainable links between Watford and other local areas in north-west London.
	Address pressures for orbital movement around London in a sustainable manner.
Equality	Improve access to local health, education, employment and leisure services, including the Watford General Hospital and Health Campus.
Environment	Improve quality of life and environment by providing alternatives to private car for trips made within and to/from the area, reducing the adverse effect of road congestion such as noise, pollution and safety.
Economy	Assist economic development by improving transport access by sustainable means to existing centres of economic activity such as Watford town centre, new business parks near Ascot Road and Watford Junction redevelopment.
Value for Money	Meet transport requirements efficiently and in a sustainable manner by making best use of existing rail, bus and highway networks and infrastructure which offers good value for money and long term commercial sustainability.
Deliverability	Promote a scheme which has the support of all key stakeholders, and a clear funding solution available for the capital investment required.

## Value for Money Case

15. The Appraisal Summary Table (AST) for the Croxley Rail Link is presented as Figure 2. Overall, the proposals provide a good fit with Central Government NATA objectives and a strong value for money case. Table 3 presents the Analysis of Monetised Costs and Benefits, the measure of value for money.
16. The results demonstrate that the proposals have a Benefit:Cost Ratio (BCR) of 2.55:1. It therefore represents Value for Money and would be justified as a use of public sector investment. The Lower Cost Alternative (Croxley Busway) has a BCR of 1.95:1.

TABLE 3 ANALYSIS OF MONETISED COSTS AND BENEFITS (£M PV)

	Preferred Scheme
Consumer Users	£260.6
Business Users and Providers	£39.6
Option Values	£18.3
<b>Present Value of Benefits (PVB)</b>	<b>£318.6</b>
<b>Present Value of Costs (PVC)</b>	<b>£125.0</b>
<b>Net Present Value (NPV)</b>	<b>£193.6</b>
<b>Benefit to Cost Ratio (BCR)</b>	<b>2.55:1</b>

17. The main area where the Preferred Scheme performs worse than the Lower Cost Alternative (the Croxley Busway) is against the Environment sub-objective of Landscape; a result of the new viaduct required linking the Croxley Green Branch and the Metropolitan Line. However, for this option it is believed that the other positive impacts more than adequately outweigh this particular consideration.

### Delivery Case

18. The proposals are at an advanced state of readiness and more development work has been undertaken than for the majority of other projects seeking programme entry. HCC has commissioned major project development studies to increase the level of detail supporting the case for Croxley Rail Link and to generate inputs to the LUL approvals process. Heads of Terms have been agreed between HCC and LUL. Work required for the TWA Application is being progressed whilst Programme Entry Status is awaited. A full public consultation on the scheme is planned for early 2010.
19. Croxley Rail Link has a full programme including consultation, Transport and Works Act submission, financial approval and construction to implementation in 2018. In order to take full advantage of the stakeholder support that currently exists for the project and reduce the potential risk of support being reduced as a result of delay, programme entry is required now.
20. The programme for the Rail Link project is effectively fixed by the funding allocated by the region. The Regional Funding Allowance shows preparatory cost funding (between Programme Entry and Full Approval) over a five year period with construction commencing in 2016/17. It is considered that construction could begin two years ahead of this if the same funding was available earlier.
21. Faster delivery of the scheme is beneficial because: the benefits can be realised sooner; savings can be made in project management costs (which are at least as dependent on project duration as on the scale of the project); reduced impact of inflation; and greater ability to manage/control risks over a shorter time frame.

### Commercial Case

22. The principles of a Joint Promotion Agreement between HCC and LUL/TfL have been established and Heads of Terms have been agreed. This sets out the responsibilities and liabilities of each party (and to each other) in relation to advancing the scheme to a TWA submission. Following a successful TWA application and the granting of the necessary powers for construction, a similar agreement between key partners (TfL, HCC) would be drawn up to cover the delivery of the project.
23. Arrangements to engage Network Rail (NR) in the development of the scheme through to TWA Application would be through NR's standard contractual frameworks agreements. A Basic Services Agreement is currently being put in place between HCC and NR. As the project

progresses, the appropriate agreements would continue. HCC would also seek to develop a Partnership agreement/Memorandum of Understanding with NR to sit alongside the formal contractual arrangements.

## Financial Case

24. Table 4 sets out the proposed funding split for the Croxley Rail Link. It is assumed that costs up to full approval are co-funded equally by the promoters and DfT. The costs of the TWA Public Inquiry are the exception to this and would be funded entirely by the promoter as they are not eligible for DfT funding.
25. Agreement has been reached in principle between HCC and LUL for the surplus revenue (after deducting operating costs and abstraction of London Overground Rail Operations Limited revenue) to be transferred in full to HCC. This revenue would support a local contribution of £25.8 million to the implementation phase of the project and potentially later secure capital funding for future major projects within the eastern region. This forms a total local contribution of 20.1% of the eligible costs of the Croxley project (comfortably in excess of the minimum requirement of 10%). This application is for a total of £136.5 million from DfT.
26. The optimism bias for the Preferred Scheme is set at 22% and therefore the additional risk layer allowed by DfT at half this value is expected to total £18.9 million. This would be shared equally between Central Government and the promoters; therefore the maximum contribution from DfT would be £146.0 million.

TABLE 4 CROXLEY RAIL LINK FUNDING SPLIT (£M OUTTURN)

Financial Year Ending	2011-2014	2015	2016	2017	2018	2019	Total
Hertfordshire County Council (Eligible)	£3.2	£0.7	£2.4	£0.0	£24.7	£1.1	£32.1
Hertfordshire County Council (Ineligible)	£1.2	£0.0	£0.0	£0.0	£0.0	£0.0	£1.2
British Railways Board Transfer (Land transfer <u>not</u> cash)	£0.0	£0.0	£0.0	£2.2	£0.0	£0.0	£2.2
Department for Transport	£4.7	£1.4	£0.1	£79.2	£50.5	£0.6	£136.5
<b>Total</b>	<b>£9.1</b>	<b>£2.1</b>	<b>£2.5</b>	<b>£81.4</b>	<b>£75.2</b>	<b>£1.7</b>	<b>£172.0</b>

FIGURE 2 CROXLEY RAIL LINK APPRAISAL SUMMARY TABLE (AST)

Option:	Croxley Rail Link	Description:	Diversion and extension of Metropolitan Line to Watford Junction over new viaduct and upgrade of disused Croxley Green Branch.	Problems:	Congestion and delays on strategic and local road networks extending journey times and affecting reliability of existing public transport services. Some socio-economic deprivation in West Watford with inadequate PT access.	Total Outturn Cost of Proposal: £172.0m
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS			QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Some temporary noise impacts along the route during construction. The introduction of frequent rail services along a currently disused route will have a significant noise impact, although mitigation measures will reduce this.				Slight adverse
	Local Air Quality	Some temporary dust production during construction/track reinstatement within segregated alignment. Emissions of ozone and iron from rolling stock unlikely to be higher than background levels. Potential replacement stock would reduce emissions in the future.				Neutral
	Greenhouse Gases	The change in emission of carbon is 572 tonnes per year.				Slight adverse
	Landscape	Work on the rail alignment will not have a significant impact on the existing urban landscape surrounding the area. Construction of the required viaduct is the primary landscape impact of this option.				Neutral
	Townscape	The Preferred Scheme will improve the townscape directly surrounding the existing rail line and associated stations that are to be brought back into use. The Croxley Green Branch has formed part of the local townscape since the 1920s.				Slight beneficial
	Heritage of Historic Resources	This option will have no impact on the historic buildings within the vicinity of the existing infrastructure and the site for the construction of the viaduct/link to the Metropolitan Line. There may be potential adverse impacts on the setting of Estcourt conservation area.				Slight adverse
	Biodiversity	There are some protected species of wildlife within the vicinity of the rail corridor. Engineering works are not expected to have any significant impact upon the biodiversity of the area, but some existing UKBAP priority habitats.				Moderate adverse
	Water Environment	Providing sufficient precautionary measures are followed regarding the use of substances during construction and maintenance, this option will have little impact on the water environment.				Slight adverse
	Physical Fitness	The overall impact on physical fitness will be positive, but not significant against the standard NATA scale.				Neutral
	Journey Ambience	The standard LUL vehicles used along the Croxley Rail Link will provide good passenger ride quality over the repaired/renewed track, offering an improved level of journey ambience over the current public transport alternative.				Moderate beneficial
SAFETY	Accidents	An assessment of accidents is not justified because of the low level of mode shift from highway, although what impact there is will be positive.				Slight beneficial
	Security	This option will see the implementation of measures including CCTV, passenger help and information points, and lighting. Passenger security will be further increased by the presence of staff on vehicles and at stations.				Moderate beneficial
ECONOMY	Public Accounts				PVC £125.0m	
	TEE: Business Users and Transport Providers				PVB £39.6m	
	TEE: Consumers				PVB £260.7m	
	Reliability	The Metropolitan Line operates in complete segregation from all highway traffic and will offer significant passenger reliability benefits in comparison with the current situation.				Strong beneficial
	Wider Economic Impacts	The proposed rail link provides high quality strategic connections between Watford, London and National Rail services at Watford Junction station. The provision of a fixed track transport system will stimulate sustainable inward investment to the area.				Moderate beneficial
ACCESSIBILITY	Option Values	This option will result in an estimated 2,700 additional households falling within an 800m catchment area of an Underground Station. A large number of local and long-distance journey destinations will become readily accessible.			PVB £18.3m	Strong beneficial
	Severance	As a segregated alignment, the Preferred Scheme will not adversely affect pedestrian or cycle movements. This option proposes opportunities for improving access, including a walkway between the Harlequin Shopping Centre and Watford High Street station.				Slight beneficial
	Access to the Transport System	Measures included within the Preferred Scheme will improve access to the transport system for households without access to a car that will fall within 800m of a new rail station. The area does however display widely developed access to the transport network.				Neutral
INTEGRATION	Transport Interchange	The proposed development will provide high standards of waiting environments, facilities and information for passengers. The new extended rail service will also improve levels of reliability and passenger security.				Strong beneficial
	Land Use Policy	The Preferred Scheme will contribute beneficially to all of the identified local and regional land use policies and strategies. Beneficial contributions will also be made to all associated locally proposed schemes.				Beneficial
	Other Government Policies	The Preferred Scheme is in line with and makes contribution to other Government policies.				Beneficial