

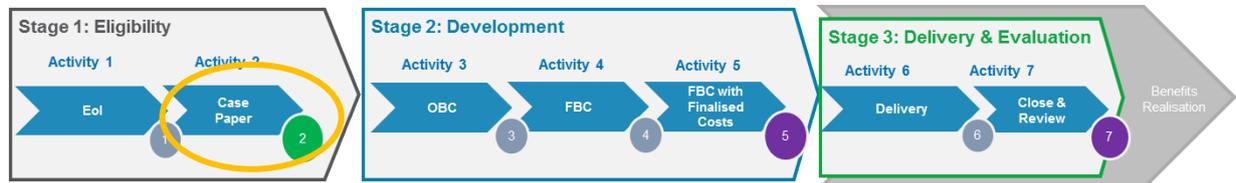
Scheme Summary

Name of Scheme:	Institute for High Speed Railways and System Integration (IHSRSI)
PMO Scheme Code:	UNI-LEEDS-001
Lead Organisation:	University of Leeds
Senior Responsible Officer:	Professor Peter Woodward
Lead Promoter Contact:	Professor Peter Woodward
Case Officer:	Lisa Childs (Combined Authority)
Applicable Funding Stream(s) – Grant or Loan:	Local Growth Fund
Growth Fund Priority Area (if applicable):	<p>Priority area 2: developing a skilled and flexible workforce.</p> <p>The ambition is in line with the SEP to be “a globally recognised economy where good growth delivers high levels of prosperity, jobs, and quality of life for everyone”.</p>
Approvals to Date:	None to date
Forecasted Full Approval Date (Decision Point 5):	To be confirmed
Forecasted Completion Date (Decision Point 6):	To be confirmed
Total Scheme Cost (£):	Phase 1 - £22.88 million
WYCA Funding (£):	Phase 1 - £11.44 million (Growth Deal)
Total other public sector investment (£):	Phase 1 - £11.44 million University of Leeds
Total other private sector investment (£):	£0 for Phase 1
Is this a standalone Project?	Yes. Though will contribute towards growth of an advanced manufacturing park as part of a wider development opportunity.
Is this a Programme?	No

Is this Project part of an agreed Programme?

No

Current Assurance Process Activity:



Scheme Description:

The University of Leeds is one of the world's top performing research intensive universities with a leading national and international reputation for research and student education. Their current Strategic Plan seeks to build upon this foundation, through strategic partnerships and an integrated approach to enterprise, innovation and tangible economic impacts.

At £54.7 billion High Speed 2 (HS2) is Europe's largest railway project and a vital part of the UK Government's strategic plan for regeneration, growth and rebalancing of the UK economy. It also represents a significant opportunity for the UK to capitalise on a rapidly growing £1.8 trillion high-speed rail global market (estimated expenditure over the next 30-40 years). The lack of testing facilities in high-speed rail represents a significant barrier to the future global development of high-speed rail research and innovation, but represents a significant opportunity for the UK to take a global lead.

The University of Leeds is therefore establishing the **Institute for High Speed Railways and System Integration (IHSRSI)** in the Leeds City Region with the ambition of helping to unlock the full potential of high speed rail, nationally and globally. HS2 will be of major economic benefit to the City Region and the Institute will help maximise these benefits by establishing the University and City Region as a global lead in high speed rail engineering and research. The new Institute will complement and build upon the expertise already in the region (e.g. at Huddersfield University and the Network Rail campus in York) to help establish Leeds City Region as a high-performing regional sector with critical mass in railway engineering research and development.

The funding request to the Combined Authority is for a capital contribution to the Phase 1 set up costs of building the facilities, including land acquisition and development. Match funding is being provided by the University company. Funding for Phase 2 is being sought by a further application to the Higher Education Funding Council for England (HEFCE) UK Partnership Investment Fund UKPIF programme with a substantial contribution from industry companies in the fit out, equipment and resourcing.

The industry co-investment is from engineering consultants, contractors and rolling stock manufacturers. Strong statements of support have also been sent by railway operators and Leeds City Council. This shows a very strong level of support from the railway sector which will enhance the future viability and success of the scheme.

Combined Authority funding will enable the development of 40,000m² of world class high speed rail infrastructure test and Research and Development facilities. This will include:

- a full-scale 400 km per hour capable high-speed rail infrastructure systems test facility which will be able to test full-scale railway track structures, including embankments, preformed systems and ground stabilization technologies;
- a full-scale high-speed 400 km per hour capable vehicle systems test facility capable of testing full-scale rolling stock and their interaction (behaviour) with different track systems; and
- a System Integration and Innovation Centre capable of replicating the system interaction of the civil, mechanical, electrical and digital systems across the railway operational environment. This is in direct response to calls from the industry for the IHSRSI to have significant system integration capability to support projects like HS2, Network Rail and Trans-Pennine.

A number of location options have been considered and researched. The current preferred option is for the facility to be located near to the proposed HS2 depot and within the East Leeds Enterprise Zone and this will be explored further with all partners.

The outcomes of the scheme include the following:

- Creation of high value employment, spur new enterprise, supply chains, GVA (Gross Value Added) uplift;
- increased retention of graduates in the Leeds City Region;
- Leverage significant 'international' private sector and public research investment in Research & Development;
- Establishing an international reputation that will attract key industry investment, spur new enterprise, SMEs and supply chains to the Leeds City Region;
- Uplifting skills of local workforce (apprentices, technicians, undergraduates and postgraduates in the skills industry needs) and attracting new international students to Leeds;
- Growing research and innovation expertise and manufacturing skills across the North;
- De-risking UK and global HSR projects by providing facilities and expertise to assess track and vehicle designs and prototypes prior to deployment;
- Location near the proposed HS2 depot, HS2 Yorkshire Hub Station and the Institute for High Speed Railways and System Integration provides the catalyst for significant future inward investment and export potential including the development of an Advanced Manufacturing Park – Leeds Council estimate that the AMP will generate 3,000 new jobs;
- Increasing the GVA of the region; and
- A whole System Integration and Innovation Centre to test and develop new high-speed rail technologies

The outputs of the scheme will include:

- Floor space (employment and educational) delivered.
- Direct jobs (located at the facility)
- Direct learning opportunities
- Private sector investment levered
- GVA increase.

These will be quantified in greater detail at the Full Business Case stage.

The scheme would be delivered in 3 phases, with the Combined Authority funding being required in Phase 1.

Phase 1

Creation of two initial world-leading test facilities for the new Institute: (i) a high-speed railways infrastructure system test facility; and (ii) a high-speed vehicle test facility. These

testing facilities would require a land purchase with the provision of standard infrastructure and growth space. It will be complementary to the conventional-speed wheel/rail interface test facility at Huddersfield

University and thus significantly enhance the region's railway testing capability. Phase 1 will also be the enabler for system integration of the two test facilities.

Phase 2

By linking the two test facilities to a new System Integration and Innovation Centre (the HEFCE UKRPIF application) a whole system integration approach can be developed. By connecting the conventional and digital train control systems, a complete test-bed platform can be developed within an integrated research environment. This will create a unique research and development facility allowing transformational change in railway research and development.

Phase 3

The IHSRSI would act as a catalyst for an Advanced Manufacturing Park which will be based on further investment from engineering and manufacturing companies within the East Leeds Enterprise Zone. Further detail on this will be provided at FBC.

Business Case Summary:

Strategic Case

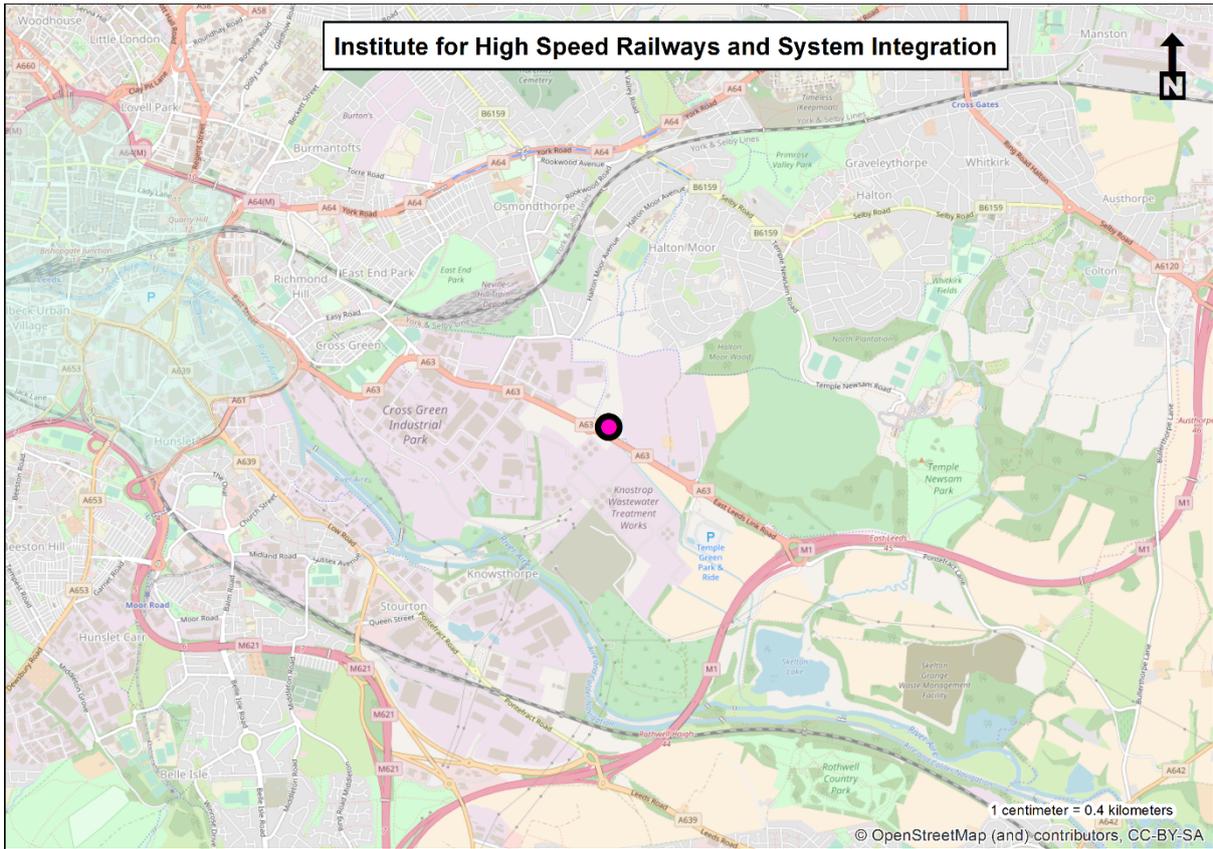
There is a clear and strong strategic case for supporting this investment. There is strong support from Leeds City Council and most importantly from the Rail industry. This is a good indicator that a public / private partnership would reduce the strategic risk of this scheme. This scheme will contribute to the Strategic Economic Plan in a number of ways, but most specifically to P2- Skilled people, better jobs.

Commercial Case

There is a strong commercial case for this investment. The outputs require greater definition, but the long term outcomes of the investment are clear. The positioning of the University, the City Region and Yorkshire as a whole

	<p>as a global centre for high speed rail will create many opportunities for strengthening the local economy.</p>
<p>Economic Case</p>	<p>The outputs and outcomes set out in the expression of interest do require greater clarification, and in particular the specific scheme outputs. However, the wider benefits to the local and regional economy are clear</p> <ul style="list-style-type: none"> • Creating new jobs to contribute to GVA • Increased private sector investment in research and development • Additional public sector funding for research and development • Development of local supply chains • New product, process and service innovations reaching the market • Increased number of businesses collaborating with the Higher Education sector • Increased retention of graduates in high quality jobs. <p>The linkages of this scheme to the wider HS2 and Crossrail programmes are also evident and supportive of this investment.</p>
<p>Financial Case</p>	<p>The request for investment from the Growth Deal is matched by University funding for the delivery of Phase 1 of the scheme. And from a mix of public sector grant and private sector match at Phase 2. The level of private sector investment is a significant element of the total scheme costs.</p> <p>The financial case does require more information to be provided at full business case stage. The promoter has carried out investigations into the costs of land purchase, construction, development and delivery of the scheme though these are not provided in any detail at expression of interest and should be provided at the next stage.</p>
<p>Management Case</p>	<p>The scheme is being promoted by the University of Leeds which is one of the UK's top performing Universities and globally recognised research intensive Universities. There is a substantial level of support from both public and private sector bodies locally and nationally. The University has a proven track record for spin-out companies and investment in innovation.</p> <p>The management case does require some additional information to be supplied at the next stage to strengthen this business case. Future viability of the scheme should be considered as well as realistic programme for delivery and construction. A number of questions and recommendations have already been made to the University to help form and strengthen the full business case when this submitted.</p>

Institute for High Speed Railways and System Integration



1 centimeter = 0.4 kilometers

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