

***HS2 Skills and Employability Strategic Framework – Fast Track to
Inclusive growth across the East Midlands***

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1. Introduction to a Strategic Framework for Growth

The delivery of HS2 will be transformational for the East Midlands economy. Throughout the build phase and once operational, it will bring new opportunities for those that live and work across Derbyshire, Nottinghamshire and Leicestershire.

These opportunities are about much more than just the construction of a new railway and the direct benefits this create. The enhanced connectivity HS2 brings will transform the geography of competition and agglomeration amongst businesses, opening up new marketplaces and catchment areas and attracting inward investment to the region from across the UK and overseas.

Opportunities will vary over time, and will be both direct and indirect. They begin immediately, as contracts are awarded for the construction of Phase 1 from London to Birmingham, and stretch to beyond the projected 2033 completion date, with the transformation of local economies across the region. During this time the external environment will also change. New technologies and ways of working will be developed and the demographics within the region will shift as Millennials and Generation Z become the key workforce and consumers in the region.

In order to maximise these opportunities, this report presents a strategic framework that focuses on the development of the current and future workforce within the region, engaging both the public and private sectors. Based on primary and secondary research, it seeks to promote inclusive and expansive growth, creating sustainable and well paid jobs across the whole of the East Midlands.

It outlines measures and initiatives to be taken that will create the right structures, environment, and approaches needed to ensure as a region the East Midlands can produce the skills needed to maximise the opportunities HS2 brings. In doing this it makes recommendations against five key areas of activity:

- Inspiring Young People
- Building Further Education Capacity
- Harnessing the Power of our Universities
- Support for Individuals
- Ensuring our Business are HS2 ready

The recommendations develop over time and geography and will require leadership and buy-in from all those involved. The intention is not to be completely prescriptive about steps to be taken, but instead to outline approaches and best practice under these five headings that can guide and shape activity to secure success for the East Midlands.

2. HS2 in the East Midlands –labour market analysis and job forecasts

Summary

Both D2N2 and LLEP areas have unemployment levels lower than the UK average, with some areas demonstrating near full employment. The LEPs also have lower than the UK average skill levels, which is reflected in the level of occupation held and relative wage levels. This two factors are combining with a non-uniform distribution of job-types and dispersed populations across the geography, to contribute to a high incidence of businesses reporting recruitment difficulties.

Recruitment difficulties are more likely to be identified for higher skilled managerial and technical roles, but also exist in lower skilled, manual and service-orientated jobs. They exist across all sectors, including manufacturing, a sector where the region has a higher proportion of its population in employment than elsewhere in the UK. Businesses also report skill gaps, with a dearth of employees in the middle-ranking roles in an organisation. Despite these, there has not been a significant increase in businesses reporting intentions to increase their investment in staff training, which could lead to future succession issues.

The importance of addressing the above challenges is underlined by the potential impact that HS2 can have in Derbyshire, Nottinghamshire and Leicestershire, both in its development and once operational. A strategy-led HS2 growth is predicted to create 74,000 more jobs above the current baseline projection, and a maximising opportunities approach 90,000.

During the build phase, many of the construction and engineering roles that will be required over the coming five years are anticipated to be at level 4 and above. This is an area where the East Midlands struggles, meaning that immediate action is required to increase skill levels if businesses are to be in a position to benefit from current opportunities.

Once operational, there will be both direct and indirect impacts on job growth, associated with changing geographies of agglomeration and competition. Those sectors identified as the main beneficiaries include Finance, IT and Business Services, Hospitality, Retail and Transport, however, these will differ across geography and there is great scope to influence these through local approaches to promote sector growth. There is currently some, but not complete, synergy here with the LEPs' identified priority sectors.

2.1 Profile: D2N2 and LLEP Local Enterprise Partnerships

The areas covered by the D2N2 and LLEP Local Enterprise Partnerships account for 5.8% of the population of England, with a combined population of 3.2m; 2.2m of which live in the D2N2 area and 1.0m in the LLEP area. The combined area has experienced population growth of 7% over the past ten years, equal to approximately 217,000 residents.

Population growth has been fuelled by a rise in the number of residents in each of the three cities within the region, with Leicester and Nottingham exhibiting the fastest rates of growth. Forecasts suggest that the rate of population growth will slow, with growth over the next ten years of 5.6% (compared to 6.6% in England as a whole). The growth of the working age population will be slower still, at 1.8% over the next ten years and just 2.3% over the next twenty years, with marked implications for economic growth and the prospective scale of employment growth connected to HS2.

Both regions have a similar proportion of residents of working age (16-64) and fall roughly in line with the national rate – 63.1% in D2N2 and 63.8% in LLEP in comparison to 63.1% nationally. The growth of the working age population is anticipated to be distributed unevenly across both areas in coming years, with the LLEP area expected to observe above average levels of growth.

Nearly 1.54m people are in active employment across both areas, 1.05m in D2N2 and 0.48m in LLEP. The employment rate amongst those of working age is 74.8% in D2N2 and 72.1% in LLEP, compared to 74.0% nationally, with employment rates lower in the LLEP area than in D2N2. Unemployment rates are also relatively low in both areas, particularly in D2N2, where unemployment is 4.2% compared to 4.8% nationally.

There are nearly 131,000 businesses located in the combined D2N2 and LLEP areas (85,755 in D2N2 and 45,205 in LLEP), with an average of over 11,000 new businesses being created each year. Business density (the number of businesses per 1,000 residents of working age) is significantly below the national average, at 54 per 1,000, compared to 65 per 1,000 nationally. The overwhelming majority of businesses are small or micro-enterprises, employing fewer than 50 staff. The wholesale and retail sector accounts for the largest share of businesses (17%, compared to 15% nationally), and both LEP areas have a smaller share of businesses in the high value professional, scientific and technical sector (15%, compared to 18% of businesses nationally).

2.2 Nature of Labour Market

The population of both D2N2 and LLEP is less highly-skilled, on average, than the population, nationally. Whilst certain areas have very highly-skilled resident populations, only 32% of people across the region hold higher level qualifications, compared to 38% nationally (Figure 1).

Figure 1: Qualifications Profile Across the Region

Qualifications (Jan 2016-Dec 2016)				
	LLEP	D2N2	East Mids	Great Britain
Individual Levels				
NVQ4 And Above	31.6	32.0	31.3	38.2
NVQ3 And Above	54.9	53.4	52.8	56.9
NVQ2 And Above	72.3	73.3	72.4	74.3
NVQ1 And Above	84.4	85.6	85.0	85.3
Other Qualifications	8.7	6.2	7.5	6.6
No Qualifications	6.9	8.1	7.5	8.0

Source: ONS.

The skills profile is reflected in the jobs in which people are employed, which also exhibit the sectoral diversity of the economy. A lesser proportion of those employed in both LEPs work in managerial, director and senior occupations, and professional and associate professional occupations than is the case nationally – 41.3% in D2N2 and 43.9% in LLEP in comparison to 45.5% in the UK. Conversely, more are employed in rudimentary occupations, as process, plant and machine operatives, and in skilled trades than is the case nationally – 20.5% in D2N2 and 21.5% in LLEP in comparison to 17.2% in the UK.

Earnings levels demonstrate the lower skills base and greater concentration of employment in lower level roles. Full-time workers earn an average of £492.00 per week in both LEPs, in comparison to £540.20 across the UK as a whole. Both workplace and resident earnings are below the national level across both LEPs, with the exception of Derby, where workplace earnings are 25% higher than the national average. This reflects the presence of high GVA manufacturing firms in the city, which necessitate a highly skilled workforce. It also reflects the significant inequality in the City, which can be bad for growth because it impairs investment in skills and productivity.

The sectors with the fastest employment growth since 2009 are the administrative and support services sector, and professional, scientific and technical activities sector. In spite of its growth, the level of employment in professional, scientific and technical activities is still beneath the national average. Employment has fallen fastest in the public administration and defence, construction and arts, entertainment and recreation sectors, primarily as a result of the recession and ensuing slow-down in development activity, coupled with the squeeze on public spending.

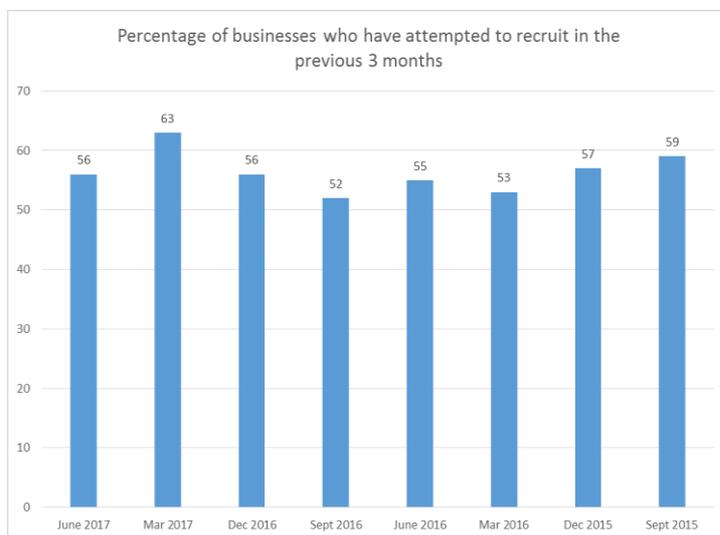
Employment growth has been static in the high-value sectors of finance and insurance and ICT, with employment in these sectors representing a much smaller share of the total in both LEPs compared with the national average. D2N2 and LLEP both enjoy very high levels of employment in manufacturing compared to the national average, at 14% of employment in both LEP areas compared to 8% nationally. This is despite the fact that the number employed in this particular sector has fallen since 2009. Current data on employment demand in Derby and Nottingham City continues to suggest a reliance on large scale employers (major firms and anchor institutions such as Universities and the NHS). The sectors representing most demand differ between the cities, with manufacturing having a bigger profile in Derby. Health

and social care, education, retail and transport are key high demand sectors across both cities. In terms of occupational skills key areas of current demand include ICT, sales and nursing/caring skills to be in high demand. Data on future skills demands suggests that both cities will continue to see more generalised trends with employers demanding a mix of base level academic (e.g. maths and English) and technical (e.g. ICT) skills alongside important transferable skills of a cognitive (problem solving, planning) and non-cognitive (communication, persuasion, relationships, customer service) nature. The two cities also look set to continue to see more general trends in the ‘hollowing out’ of mid-skilled roles as both high skilled professions grow alongside others that are sometimes regarded as low skilled such as personal services, caring and construction (though in reality these roles are often dependent on complex, albeit informally recognised, skills).

2.3 Current skills gaps

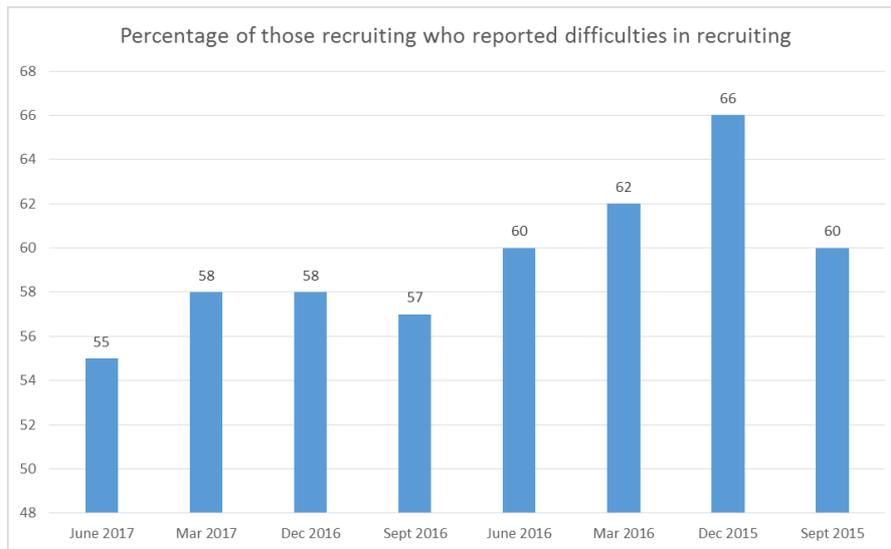
It is important to recognise at this point that the labour market is already operating imperfectly in several parts of the economy. Figure 2 below demonstrates the percentage of respondents to East Midlands Chamber’s Quarterly Economic survey that have attempted to recruit each quarter between September 2015 and June 2017. Figure 3 shows the percentage of those that have reported recruitment difficulties over the same period – ranging between 5.5 and 6.5 out of every 10 recruiting businesses. Figure 4 shows a snapshot for June 2017, demonstrating that these difficulties exist across all job types, but being more acute in higher-skilled and managerial roles. These snapshot figures indicate that growth risks being constrained by a lack of higher skilled workers and that this is a sustained problem over time, and not just related to short-term upswings in demand.

Figure 2: Percentage of businesses who have attempted to recruit in the previous 3 months



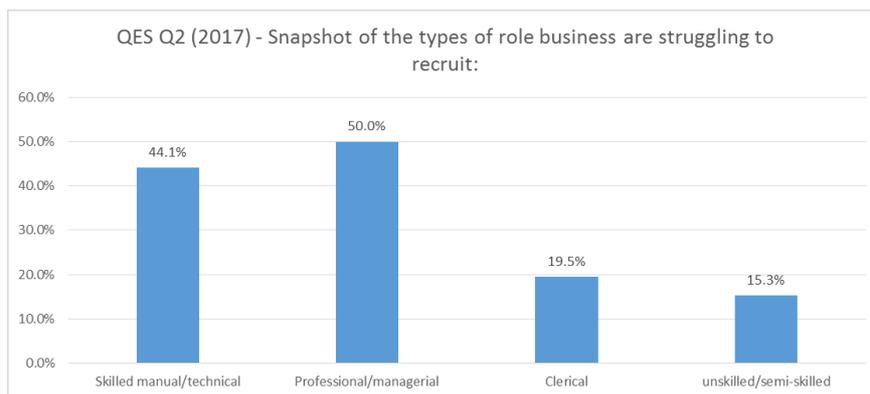
Source: East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire)

Figure 3: Percentage of businesses recruiting who report difficulties



Source: East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire)

Figure 4: QES Q2 Snapshot of the types of role business are struggling to recruit



Source: East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire)

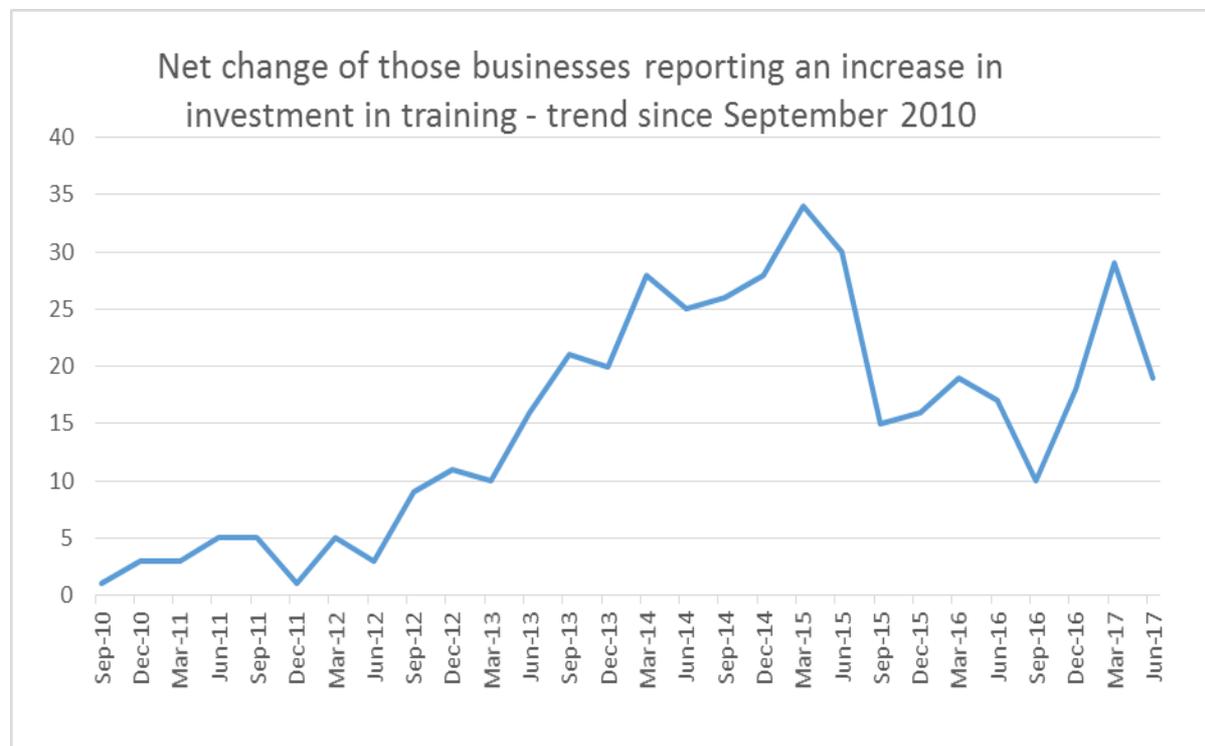
Analysing those results by business sector demonstrates that, while these issues exist across a broad range of sectors, there are specific issues being felt in those that would stand to directly benefit from the construction and operation of HS2, including construction and the railway and rolling stock sector. In addition to skills gaps, these sectors are also more likely to report an ageing workforce, suggesting that workforce replacement over the lifetime of the HS2 project will be a major issue.

Looking ahead, in response to a question in the QES for the second quarter of 2017, 86% of businesses reported plans to grow over the coming two years – of these 67% said they would need to recruit more staff as part of that growth. Only 1% of businesses with growth plans will reduce staff numbers.

Businesses have the option to respond to these challenges in a number of ways, one of which is through investment in training. Despite continued issues in recruitment, businesses by and large are yet to respond through increasing investment in training. Figure 5 illustrates the net percentage figure of businesses responding to the Chamber’s Quarterly Economic Survey who

have increased their intentions to invest in training plans, showing a steady increase up to March 2015, before a drop off leading to the start of 2017, which saw a short peak ahead of the introduction of the Apprenticeship Levy, before a subsequent drop off again.

Figure 5: QES data showing intentions to invest in training 2010--present



Source: East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire)

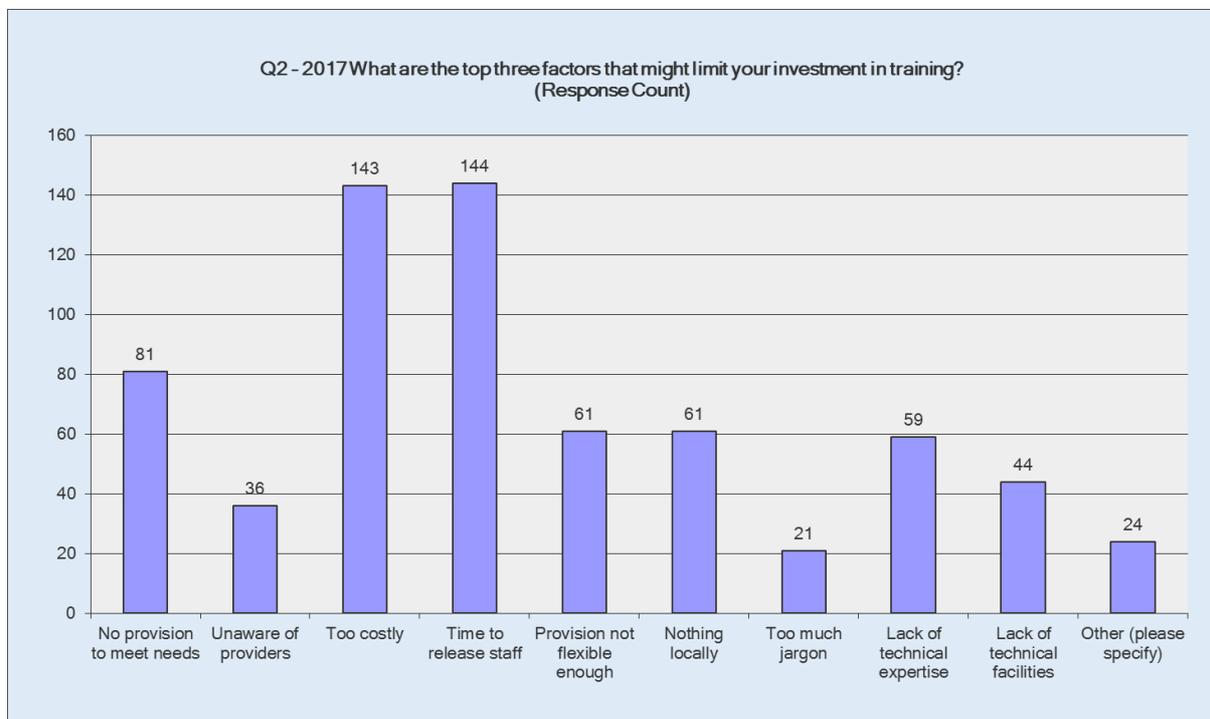
The main barriers to investment in training remain the cost and time to release staff, with fewer people citing lack of an understanding of the opportunities available or too much jargon (Figure 6), suggesting more flexible training offerings are required by businesses looking to invest in staff growth. While data suggests that the majority of UK training is ‘on the job’ training, there is considerable scope to increase the formality and substantive content of this training in order to support productivity growth.

When asked about reasons behind training investment, 74% reported it as being either essential or important in helping them achieve their growth plans, with only 8% saying this was unimportant for them realising their plans. 84% saw investment in staff training as a part of their plans to increase productivity, and – in light of continuing struggles to recruit – 51% opted to invest in staff training to reduce their reliance on external recruitment. A further 84% reported a need to invest in staff training to meet demands of new business. A similar number view staff training investment as playing an important role in aiding staff retention (East Midlands Chamber QES, Q2 2017).

Skills gaps exist alongside unemployment and underemployment. For example, while the general unemployment rate in the EM region is low, nearly 12% of young people in the region are Not in Education, Employment or Training. Moreover, among unemployed people, nearly a third have been claiming Jobseekers Allowance for more than a year. Economic inactivity is significantly higher for women and like other parts of the UK there is a problem of especially

young people working in insecure jobs with less hours and less secure hours and pay than they would like. Skills provision needs to be responsive to these dynamics, providing ladders out of inactivity and opportunities for retraining throughout working lives to enable people to adapt to changing skills demands, especially after periods out of employment, for example when caring for children or other family members. Skills provision also needs to address the unevenness of labour market demand, providing a bridge between access to relatively low paid low skilled work and growth in higher skilled employment. This would help to address unemployment and inactivity which is unequally distributed between men and women and also some minority ethnic communities and skills gaps existing in sectors and occupations which have not been traditionally diverse in their workforce, such as engineering and construction. Uniting under-employed groups and skills gaps is not just good for overcoming constraints on growth, it helps to provide a ladder for social mobility.

Figure 6: Barriers to training from QES Q2 2017



Source: East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire).

2.4 Regional Baseline Employment Projections

Both LEPs have set themselves targets for job creation, with D2N2 setting a target of achieving **55,000** additional private sector jobs between 2013 and 2023 and LLEP **45,000** between 2012 and 2020, identifying the following priority sectors in driving economic growth.

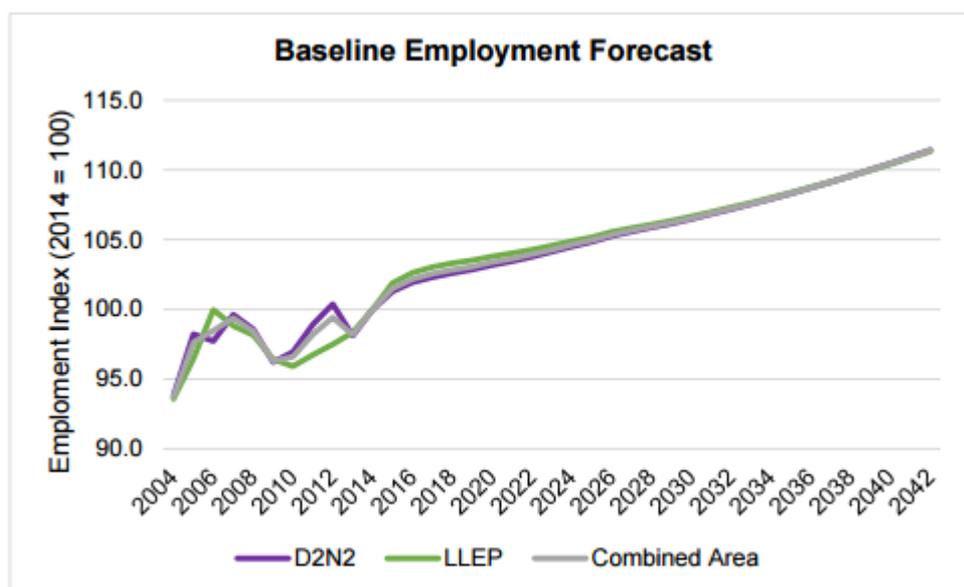
Figure 7: Priority Sectors

Sector	D2N2 Priority	LLEP Priority
Financial and Professional Services		✓
Creative and Digital	✓	✓
Life Sciences	✓	✓

Logistics and Distribution	✓	✓
Transport Equipment Manufacturing	✓	
Construction	✓	
Visitor Economy	✓	✓
High Technology Manufacturing		✓
Food and Drink Manufacturing	✓	✓
Low Carbon	✓	✓
Sports and Physical Activity		✓

Cambridge Econometrics has produced its own projections for job creation across D2N2 and LLEP from 2004-2042, combined below to provide a 'study area' total. For D2N2, these numbers are broadly in line with the Strategic Economic Plan targets (51,000 for the same period), however, the LLEP figure will require a stretch from the current baseline (31,000), which could in part be created through infrastructure investment that increases the capacity of the local economy.

Figure 8: Baseline Employment Growth projections (2004-42)



Source: Cambridge Econometrics (2016)

As is illustrated (Figure 8), the broad direction and scale of change for both D2N2 and LLEP is similar, with total employment forecast to increase by 172,000 over the period 2014-42, of which 115,000 jobs are anticipated to be created in D2N2 and 57,000 in LLEP. This represents total employment growth of 11.4%. This figure sees D2N2 and LLEP out-pacing the wider East Midlands level, but marginally underperforming against the national average, which is expected to grow by 12% between 2014 and 2042.

UKCES and Experian have also produced job growth projections for the wider East Midlands, with UKCES concluding that that the combination of expansion and labour replacement will leave the region needing 1m new workers by 2024, compared with 2014 and much of this will require higher level qualifications for Professional, Managerial and Associate Professional occupations. In terms of sector there are differences between the projections but growth is

anticipated for a basket of sectors including Residential Care and Social Work; Real Estate, Manufacture and Repair, Air Transport, Media, Arts, Other Professional Services and Computing and Information Services. There are though some important sub-regional variations. For example, research for Nottingham and Derby City Councils suggests Healthcare, education and transport will grow in the coming years in Nottingham; Manufacturing, Office Administration, Education, Food and Beverage and Architectural and engineering services will grow in Derby. Notwithstanding the differences in various projections, the conclusions that emerge from these is that the region needs expanded skills provision to sustain growth. Evidence on current vocational training from Nottingham and Derby City Councils suggests that some of these sectors are not well served by Apprenticeship provision in the region, such as Retail, Food and Drink and the Transport Industry.

2.5 Potential impact of HS2 on employment growth

The arrival of HS2 is expected to deliver economic benefits to the D2N2 and LLEP areas through the following means:

- Productivity & Direct employment
- Catalytic job growth at the hub and sites
- Indirect capacity improvements
- Procurement and supply chain benefits linked specifically to the design, construction and operation of HS2.

In assessing the potential impact on employment growth, the project should be considered in two distinct phases: During construction; and once operational, post 2033. Special consideration needs to be given to how HS2 related growth can align with and be harnessed within strategic growth sectors for the LEPs and local authorities through their different strategic plans. HS2 should be seen to complement and help deliver growth in existing priority sectors rather than divert the strategies. Many of the existing priority sectors are those that will be most affected by both the construction and operation of the HS2 line.

2.5.1 Employment opportunities from the construction of HS2

More immediate are the opportunities relating to the construction of HS2, with the currently agreed phase 1 from London to the Midlands taking place up to 2024, with the majority of construction to occur between 2017 and 2022. Albion economics estimate that this will require a labour force of 65,000 job years, with a large proportion of these taking place on a contract basis, meaning a labour requirement each year in the region of 10,000 jobs. The time spread of these roles, along with the likely qualification level required, is detailed in figure 9.

Figure 9: HS2 Build Requirements (Job Years)

HS2 Build Labour Requirement (Job Years)							
	Total	No Quals	Level 1	Level 2	Level 3	Level 4+	Apprenticeships & Other
2015	837	92	134	142	151	209	109
2016	1,570	173	251	267	283	393	204
2017	7,327	806	1,172	1,246	1,319	1,832	952
2018	13,607	1,497	2,177	2,313	2,449	3,402	1,769
2019	11,514	1,267	1,842	1,957	2,072	2,878	1,497

2020	11,514	1,267	1,842	1,957	2,072	2,878	1,497
2021	8,897	979	1,424	1,512	1,601	2,224	1,157
2022	8,897	979	1,424	1,512	1,601	2,224	1,157
2023	733	81	117	125	132	183	95
2024	105	12	17	18	19	26	14
Total	65,000	7,150	10,400	11,050	11,700	16,250	8,450

Source: Albion Economics, HS2 Consortium, Solihull Observatory

In terms of the roles required, these are primarily in: design; project management; civil engineering construction; and specialist railway engineering, as detailed below:

Figure 10: HS2 Build Requirements (Roles)

HS2 Build Labour Requirement				
Role	% Total	Total Job Years	Peak	Average Annual (2017-22)
Specialist engineering: Permanent Way	8%	5,200	1,016	833
Specialist engineering: Signalling & Telecoms	2%	1,300	254	208
Specialist engineering: Electrification & Plant	1%	650	127	104
Tunnelling	21%	13,650	2,667	2,188
Structures	19%	12,350	2,413	1,979
Stations	20%	13,000	2,540	2,083
Other	26%	16,900	3,302	2,708
Project Management	3%	1,950	381	313
Total		65,000	12,700	10,417

Source: Albion Economics, Solihull Observatory, GBSLEP

Work led by the National Skills Academy for Rail Engineering (NSARE) suggests skill shortages during this period are most likely to be experienced in:

- Train control systems design engineers and technicians (780 specialists required);
- Overhead line design engineers and technicians (500 specialists required);
- Track design engineers and high output plant operatives (100 specialists required);
- Rolling Stock (two peaks of 5,000 and 9,800 specialists);

Other areas of potential recruitment difficulties include: Civil engineering operatives; Plant operatives; Plant mechanics and; Scaffolders.

The work concludes that this demand will be manageable, providing these skills challenges are addressed within the next 5 years, with a particular focus on apprenticeship training schemes and supply-chain businesses working proactively within the local labour market to support skills coming forward.

Specifically in relation to construction, the 2016 Construction Labour and Skills Research Report undertaken for D2N2 concludes that there are “.....no major obvious gap in total skills

that requires significant urgent attention.” However, this report specifically excluded the impact of HS2 due to the timeframes used. Reviewing the anticipated number of jobs likely to be created based on the Albion Economics data we can assume that a similar if not slightly higher number will be required during the construction of Phase 2 (similar construction timeline but slightly more track miles). A significant number of these roles are expected to be at level 4 and above; some 25% of the ‘job years’ envisaged. Recognising that the East Midlands has overall a lower % of the working population qualified to level 4 than the national average (see Table 1) this puts us on the back foot and demonstrates the need for concerted action to ensure our people can attain the skills levels that will be required. Examples include Professional Construction roles and advanced machinery operation including that used for tunnelling, track laying and electrification. The potential closure of Ratcliffe Power Station in the early 2020’s provides a specific opportunity for reskilling members of the existing workforce – particularly those with electrical power, sub station and control systems experience.

This analysis highlights the importance of early engagement within the East Midlands. To date a range of contracts have already been awarded for enabling, design and construction works, totalling more than £1,350m and a further nearly £9,000m worth of contracts are currently in procurement. The Phase 1 rolling stock contract (for a minimum of 54 trains) is currently in procurement, with the contract planned for award in December 2019. Throughout the supply chain, HS2 Ltd has a commitment to procure contracts which increase Equality, Diversity and Inclusion and to deliver skills upgrading, principally through the employment of Apprenticeships in the supply chain (at least 2000 in the construction phase).

Early planning and collaboration between business and skills providers is necessary to manage these requirements. This is particularly the case if the East Midlands is to compete to benefit from these demands, rather than them be met by a workforce which moves out of Cross-Rail and up the line with HS2.

2.5.2 Once Operational – post 2033

Estimates produced by HS2 Ltd as part of the appraisal of the strategic case for HS2 suggest that the total economic benefits arising from the project might total £71bn based on 2011 prices. Of these, the largest components are driven by additional economic output arising from time savings (£46bn) and wider economic benefits of more than £13bn.

In terms of job creation, forecasts of the effect on HS2 on jobs by sector and by region have been undertaken, notably by KPMG, Experian and Cambridge Econometrics. These suggest that the economic gains identified above will not be spread equally across sectors, and will also vary across our local geography, impacted on by local make up and existing strengths. Up to 95% of the productivity gains forecast to arise from HS2 are expected to be experienced by producer services and consumer services. Using these two categories, Midlands Connect has suggested that a range of sectors are most likely to experience growth from HS2 related demand (see **Error! Reference source not found.9**).

Figure 11: Sectors Likely to Experience Growth, Resulting from HS2

Producer Services	Consumer Services
<ul style="list-style-type: none"> • Finance • Insurance • IT and other Business Services • Business and Management Consultancy • Media Services • Real Estate • Other Public Services 	<ul style="list-style-type: none"> • Hospitality • Retail • Transport • Wholesale Services

The above sectors have several links to the priority sectors identified by the two LEPs, although the work does not identify those areas within manufacturing and engineering that both LEPs see as regional strengths. These sectors are those that would particularly merit additional support to ensure that they benefit, rather than lose out from increased competition once HS2 is fully operational.

Taking a different approach, ekosgen established a different set of business types that might benefit directly and from increased connectivity and journey time savings (see *Figure 12*).

Figure 12: Direct and Wider Impact Sectors

Direct Impact Sectors	Wider Impact Sectors
<ul style="list-style-type: none"> • Accommodation • Media • IT services • Financial & Insurance • Real estate • Legal & accounting • Head offices & management consultancies • Architectural & engineering services • Other professional services (inc. R&D) Business Services & Administration 	<ul style="list-style-type: none"> • Pharmaceuticals • Electronics & Electrical Equipment • Motor vehicles • Construction • Wholesale trade • Retail trade • Land transport • Logistics & Distribution • Food & beverage services • Education • Arts • Other services

Direct Impact Sectors are defined as sectors that are projected to benefit directly from HS2 through productivity and direct employment impacts. Wider Impact Sectors are defined as the sectors that may benefit more widely from HS2 through catalytic job growth (i.e. the unlocking of wider infrastructure investment), wider capacity improvements across the road and rail network and, in some cases, through procurement and supply chain benefits.

Ekosgen have developed three alternative projections for assessing the impact of HS2 on companies operating in both of these sectors, these being:

- **Projection 1: HS2 Led Growth.** This scenario considers an uplift to Direct Impact Sectors only. It assumes that for the direct impact sectors:
 - Sectors estimated to grow above the regional average in the baseline projection now grow in line with the best performing region nationally.
 - Sectors that are projected to grow below the regional average in the baseline now grow in line with the East Midlands average.
- **Projection 2: Strategy Led.** This projection applies the uplift factors from the HS2 Led Growth projection to the wider impact sectors. The direct impact sectors are expected to grow at half the rate achieved in Scenario 1. This scenario reflects employment growth that is more strongly focused on the strategic employment sectors in D2N2 and LLEP.
- **Projection 3: Maximising Opportunities.** This projection applies the uplift factors from the HS2 Led Growth projection to both the direct and wider impact sectors.

All three projections expect levels of employment growth in D2N2/LLEP to exceed the UK average. The HS2-Led projection is forecast to deliver 205,000 additional jobs, representing an average annual growth rate of 0.46% and delivering **33,000** more jobs than are forecast in the baseline. This level of growth would significantly exceed the employment targets set out in the D2N2 and LLEP SEPs.

The Strategy-Led projection assumes that the benefits from HS2 can be applied to a broader range of sectors. The 'Strategy-led approach' assumes that the possible capacity improvements on the existing road and rail network resulting from HS2, and the wider investment opportunities, can be fully realised. This projection would deliver **74,000** more jobs than the baseline forecast, representing an average annual growth rate of 0.54% a year.

The Maximising Opportunities projection assumes that the benefits from HS2 can be maximised for all direct and wider impact sectors. Under this projection, total employment would grow by 263,000 jobs between 2014 and 2042, reflecting an average annual growth rate of 0.57%. The Maximising Opportunities projection would deliver **90,000** more jobs than the baseline forecast.

The headline results of the three alternative employment projections for the D2N2 and LLEP regions, as well as the baseline, are presented in Figure 13, below.

Figure 13: Potential Growth Scenarios, including HS2

	Baseline	UK Trend	Projection 1: HS2 Led	Projection 2: Strategy Led	Projection 3: Maximising Opportunities
Total Employment (2042)	1,682,000	1,692,000	1,716,000	1,756,000	1,773,000
Employment Growth (2014-42)	172,000	182,000	205,000	246,000	263,000
Employment Growth %	11%	12%	14%	16%	17%
Employment Uplift over Baseline (2042)	-	10,000	33,000	74,000	91,000
Total GVA (2042)	£103.94bn	£104.33bn	£106.46bn	£107.93bn	£109.34bn
GVA Growth (2014-42)	£42.94bn	£43.33bn	£45.46bn	£46.93bn	£48.34bn
GVA Growth %	70%	71%	75%	77%	79%
GVA Uplift over Baseline (2042)	-	£0.38bn	£2.52bn	£3.99bn	£5.4bn

Source: ekosgen, 2016.

Taking the impact by sector, in the baseline forecast, the greatest employment growth is projected in Business & Support Service, which is listed as a Direct Impact sector. This sector is expected to grow by 62,000 jobs by 2042.

Other sectors that are projected to grow significantly in the baseline include Retail Trade, Construction and Food & Beverage Services (with projected growth ranging from 19,000 to 29,000 jobs). These are identified as Wider Impact sectors and employment growth in each is therefore expected to be higher in the Strategy Led and Maximising Opportunities projections.

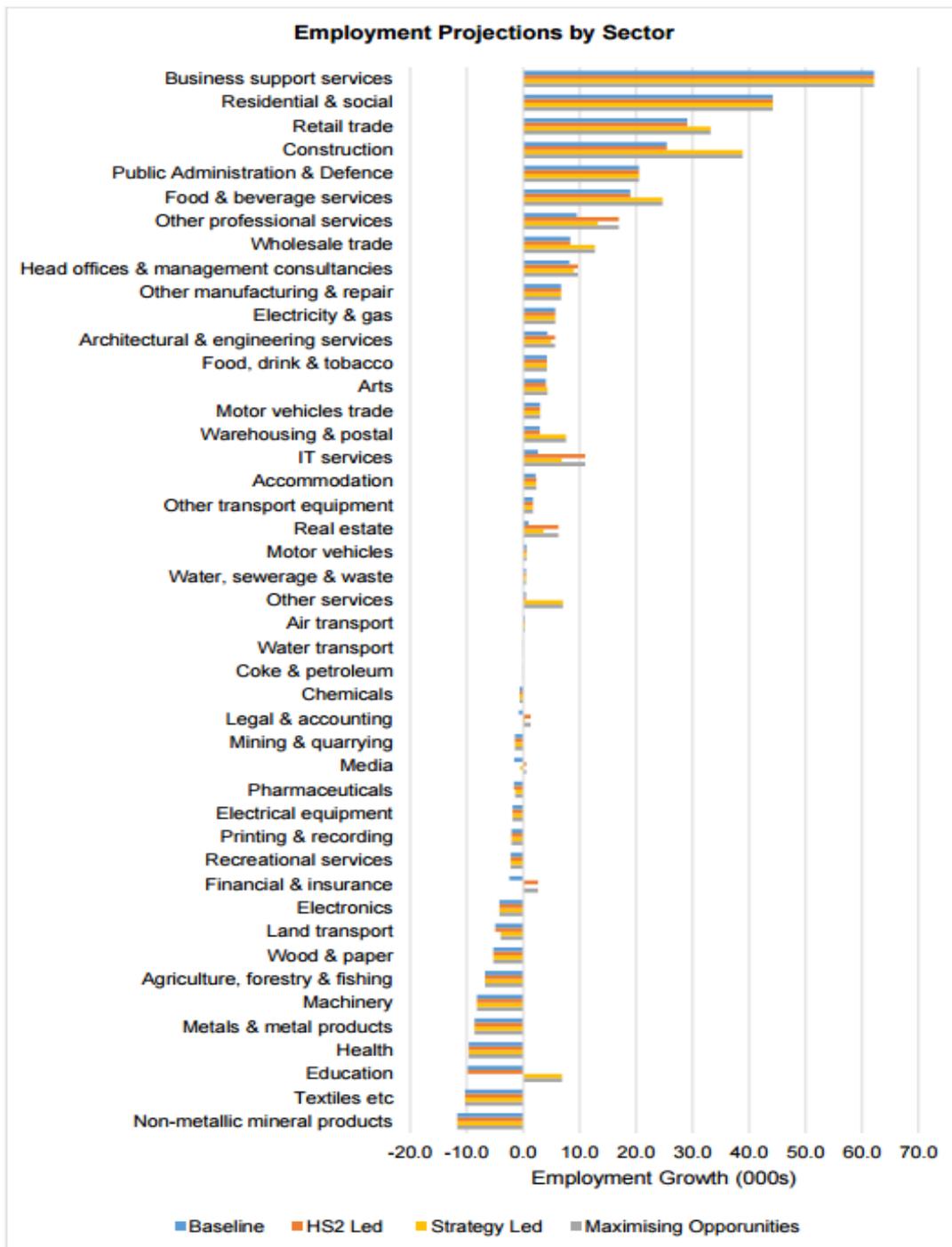
Other Professional Services is the largest Direct Impact sector and employment growth is anticipated to increase from 9,500 in the Baseline forecast to 17,000 in the HS2 led and Maximising Opportunities projections. In the Strategy Led projection growth is still expected to be strong, with 13,200 additional jobs by 2042.

Other sectors with a smaller absolute change, but large proportional uplift in employment between the Baseline forecast and alternative projections include IT Services and Real Estate

in the HS2 Led, Strategy Led and Maximising Opportunities projections and Warehousing & Postal and Other Services in the Strategy Led and Maximising Opportunities projections.

For some sectors, including Land Transport, employment is expected to decline over the projection period, but at a lower rate in one or more of the alternative projections. Similarly, for other Direct or Wider Impact sectors (such as Electronics) employment is expected to decline at the same rate in the alternative projections as performance still exceeds the best performing UK region.

Figure 14: Employment Projections by Sector



Source: Cambridge Econometrics

3 Harnessing Skills and Employment opportunities – the evidence base

Summary

The skills and employment opportunities that HS2 can bring will not be realised in the East Midlands without the following things being in place: Adequate intra-regional connectivity; Growing economy; Active procurement strategies; Active labour market strategies; Effective use of strategic sites. This emphasizes the importance of developing a holistic Growth Strategy for the whole of HS2 in the East Midlands.

Evidence from direct stakeholder research suggests that current levels of awareness of HS2 – from the practicalities of the project itself through to its potential impact on the region – are very low, with less than one in ten of the businesses and education providers surveyed factoring HS2 into their strategic planning, with a greater focus being placed on activity to meet existing skill shortages. Where businesses are seeking to engage with current opportunities, they are being hindered by a lack of access and understanding of HS2 procurement processes, along with inadequate networks amongst smaller businesses to engage with these processes.

This lack of awareness amongst businesses, individuals, education and skills providers, presents the biggest barrier to the region being able to respond to the opportunities that HS2 will bring and requires immediate addressing.

A new strategy must have an awareness of current approaches to developing and delivering skills and employability interventions across the region, which are viewed as being very fragmented, with a number of overlapping initiatives, with differing objectives and geographies. This makes it difficult for employers, skills providers and learners alike to navigate the current offering and risks leading to disengagement from those organisations and individuals the activity seeks to support. A new strategy must also take a long-term view of the labour market, which will require engaging children and young people now to help them shape their aspirations from an early age.

An inclusive approach to growth can support the delivery of a strategy to meet these needs, bringing together all stakeholders to promote joined up information flow and planning in the skills system to bring demand and supply together in a coherent way. Importantly, the policies, approaches and interventions required to respond to HS2 also make sense for the wider economy, regardless of the project itself.

3.1 Evidence from the literature

There is already evidence on the impacts of High Speed Rail on economic growth outside of the UK. Employment and skills effects are derived:

- Directly, from economic activity associated with the investment such as construction, design, manufacture and operation of new transport infrastructure.
- Indirectly, as secondary effects, derived from the benefits of having enhanced connectivity, reducing the costs of trade and interaction; increasing efficiency, and

bringing new companies attracted by locational advantages with ensuing benefits for the sub-regional economy.

These benefits are felt most strongly by the urban hubs at either end of the line, and by industries that are already well established and connected, enabling them to seize first-mover advantages. For stations between the urban centres to benefit, it is important to ensure:

1. **Intra-regional connectivity** – using other public transport and road networks to move people and goods between high speed rail stations and existing businesses. This suggests that connectivity between Toton and Derby, Nottingham and Leicester, as well as the wider Midlands Connect strategy, need to be effectively integrated with HS2. Considerations here need to extend to volume, capacity and speed of connections but also the quality of the environment and passenger experience and pricing. All of these are significant in determining the effects of high speed rail connectivity.
2. **Growing economic infrastructure** – growth can be accelerated but, by itself high speed rail will not turn around decline, so it is important that existing growth sectors are as strong as possible prior to this connectivity, helping them to benefit from increased access to other markets. This is also important in helping these sectors in the East Midlands to cope with additional competition that might be facilitated by HS2.
3. **Active procurement strategies** – capturing local value through the supply chain related to new opportunities and strategic sites. Ideally, these would not just seek to capture the benefits of jobs growth within the region. Rather active procurement strategies would be directed to the distribution of those benefits to increase inclusivity, diversity and equality and to lever up the skills equilibrium by linking procurement to workforce training requirements.
4. **Active labour market strategies** – ensuring that the flow of skills into and through the workforce is ready to respond to business demand and focussing in particular in helping those with the lowest skills levels to start on a journey of upskilling, with HS2 and other infrastructure investments used to drive skills investments in this way.
5. **Effective use of strategic sites** – injecting the wider local economy with strategic employers or centres of excellence such as with high-value and research intensive activity that can benefit from connectivity enhancement and add to the multiplier and pull effect of these sites. The locations around HS2 stations need to be exploited for their potential to generate population and business growth through the connectivity benefits that they bring. Given the poly-centric nature of the East Midlands, the station sites can be a significant lever for agglomeration, especially in relation to Derby and Nottingham.

The timescale over which high speed rail is delivered is also significant. Capturing the benefit of the wider effects takes place over several years, if not decades. Stable policy and planning frameworks that encompass the wider geography are essential to provide the basis for investment decisions. Equally, a long term view of the labour market is required. In the case of HS2 in the East Midlands, it will only be fully operational in 2033; when young people who are currently in primary school will be leaving statutory learning. ***Engaging young people with future developments in technology and their working lives is something that is critical to capturing the benefits of high speed rail.***

Most research in this area focusses on the supply side; namely how to inspire, inform and encourage young people to either continue to study subjects necessary for engineering (such as maths and physics) or to decide to go along learning pathways that will lead to such jobs. There is a ‘crowded field’ for such interventions; 600 organisations are currently involved in enrichment and enhancement of the STEM curriculum in the UK – mostly aimed at 11–14 year olds, and to a much lesser extent with primary school aged children. The D2N2 and LLEP areas are no exception. Additional interventions related to promoting HS2 related careers will need to be carefully integrated with those that already exist so as not to further complicate the system.

There is also some popular discussion about the nature of the cohort of young people born in the 1980s through to 2000s – referred to as ‘millennials’. It is sometimes suggested that this group of young people demonstrate increased individualism, confidence and demands for work life balance and prioritisation of goals other than career building. Some of these concerns may be misplaced or less related to the nature of young people than the changing structure of the labour market they are entering. However, there is evidence to suggest the need for a more personalised and individual approach to inspiration and aspiration building.

Several clear messages arise from this prior research evidence:

- The need to actively plan and prepare in order to create economic benefits from HS2 that build on current strengths and on current key priority sectors – this cannot be left to happenstance.
- It is essential that a long-term vision is used to engage with children and young people to help them shape their aspirations from an early age.

In both cases policies and interventions which make sense for HS2 also make sense for the wider economy. Supporting the LEPs existing priority sectors; boosting the skills development of the current and future workforce, and matching skills to demand are what will make facilitate potential growth from HS2 and generally.

3.2 Evidence from direct stakeholder research

The findings presented here are derived from analysis of seven focus groups, 27 interviews and 149 survey responses, all of which engaged businesses, schools, colleges, universities and local authorities.

3.2.1 Awareness

While there is a general level of awareness that HS2 is coming to the East Midlands, a large proportion of this has been formed as a result of local planning issues and media controversy about costs, the route and its environmental impact, rather than strategic organisational consideration of its impacts.

There was reasonable awareness of the station at Toton (54% of all survey respondents) and that journey times would be reduced (49%) although less awareness of the proposed facilities at Staveley (30%) and Chesterfield (24%).

This is crucial. If decision makers in businesses and other organisations do not know about these developments, they cannot be putting in place the plans now to take advantage of business opportunities that might arise from them.

There is currently limited widespread strategic thinking on how to maximise the benefits of the economic opportunities that HS2 can bring. Less than 40% of businesses are aware of the general scale or types of job growth that might be stimulated by HS2. A small number of businesses – all associated with different aspects of the construction sector – are already involved in some way in the procurement process, either in active projects in the supply chain to tier one suppliers or had been part of recently submitted proposals. As a result, these businesses are more attuned to the specific opportunities available to their organisations but, even then, this does not extend far beyond the requirements of these particular contracts.

Even in sectors where there might be expected to be a higher degree of awareness (e.g. rail businesses) there is still mixed awareness of the opportunities that might be available.

Given the sectoral strengths present in the East Midlands and their relevance to the direct benefits the construction of HS2 will bring, these findings are of great significance. If organisations in the public and private sectors are not sufficiently aware of the different elements of HS2 they are unlikely to be well placed to take action appropriate to taking advantage of these opportunities, making those economic benefits less likely to materialise.

3.2.2 Risk aversion in Business Planning

In terms of specific plans for HS2, the fractured nature of the ‘business’ structure in relation to both the skills system and business support (especially in construction and engineering) has contributed to risk aversion regarding training to meet future skills needs. In the survey, less than one in 10 of the respondents had factored HS2 into any of their longer-term strategic planning. This reticence was present across the piece:

- Smaller employers, were averse to risking investment in apprenticeships without surety about future demand to match this,
- Large skills providers, exhibited risk aversion regarding developing new courses and course content without being assured that students undertaking those courses would find employment. Skills providers also commented that it is individual learners that drive demand for their courses and as such, awareness of future careers and skills needs has to be raised among learners as well as employers and skills providers.
- Individual learners are likely to be risk averse about new qualification types and subjects, especially at higher skills levels, where studying established courses is less risky than taking newer high skill vocational routes.

The system of support to individuals in relation to careers advice and to business in relation to business support and advice is not a function of ‘no help’ being available. Rather, lots of small, overlapping, spatially focussed and often transitory programmes mean that the system is complex for individuals and businesses to navigate, leading to sub-optimal take up and matching of support to needs.

In terms of business planning, HS2 is viewed as an external factor that businesses and other stakeholders are aware of as part of a wider set of external drivers. In the survey work around a quarter of organisations have seen board and senior management level discussion of HS2 opportunities, but the majority of respondents had no specific plan in place to get the most out of HS2 (see **Error! Reference source not found.**).

Figure 15: Respondents where HS2 had influenced Business Planning

Area of Business Planning	HS2 has influenced this to a significant or some extent
Staff Recruitment	10%
Capital Investment	11%
Training Investment	9%
Leadership Development	7%
Premises Development/relocation	9%
Mergers and Acquisition	3%
Supply Chain Development	7%
Product Strategy/Curriculum Offer	11%
Customer / Service User Strategy	11%
New Business Opportunities	20%
Partnership Developments	12%
Investor Relations	6%

Question: "To what extent has HS2 featured in your organisational planning in the following areas?"

Risk aversion is present in thinking specifically about HS2. In focus group and interview discussions some employers and public sector representatives remained unsure or sceptical about whether the project would ever be delivered, or that there would be further changes to the route, specification or time delays. Uncertainty of this kind is acting as a barrier to a regional response from stakeholders and business. This is particularly problematic for the East Midlands because the phased timing of the project. Action is necessary now to ensure regional businesses can get take advantages of opportunities now so that they are not crowded out later, when construction and other opportunities arise in or closer to the region.

3.2.3 Skills planning

The region is already experiencing issues with skills shortages – existing at all levels within a business and across a broad sector base. East Midlands Chamber’s Quarterly Economic Survey reports steady rates of businesses seeking to recruit new staff – approximately six in ten each quarter - with a further 6 in ten of these businesses reporting difficulties in finding people with the suitable skills and qualifications.

These issues relate to several factors:

- Some recruitment problems relate to sector/occupational wage rates – particularly in manual roles in construction and engineering – and the perspective that some occupations were seen as comparatively unattractive because of the intersection of status, terms and conditions and pay.
- A second problem relates to niche or high skilled professional roles where skills needs may be in rapid flux because of technological or organisational change. On this, there is some concern among employers about the capacity of the skills system to keep up with the pace of change, but also the ability of employers themselves (especially

SMEs) to identify, anticipate and communicate their changing skill requirements and to train their own workforces.

- A third element of skills shortage/recruitment/retention discussions related to Brexit and the potential for the loss of access to labour from the EU, which would have a serious and detrimental effect on the ability of some businesses to sustain their business activity. This included the direct loss of employees and increased competition for UK workers.

Despite these concerns, less than 5% of the employers responding to our survey reported that HS2 had influenced their HR plans and strategies. If the region is to realise the potential job growth projections above, more businesses will need to better understand how HS2 might impact their HR planning, including bridging skills gaps by training, and skills providers and other actors will need to be better attuned to assisting with recruitment and retention problems.

3.2.4 Barriers

For many respondents HS2 was seen in context with several other factors and was not viewed as either imminent or important to them. A lack of information and clarity in information about what the employment and skills information related to HS2 (direct, indirect and induced) demand might be is seen as a major barrier to engagement. While 'projections' may be inaccurate and not adequate for detailed planning, they might support awareness raising as a preliminary step before detailed planning, on the basis of actual business opportunities.

Most businesses operate with relatively short time-horizons and where they are not likely to be involved in the construction phase, the impacts of HS2 are not likely to be relevant for some considerable time. Similarly, while it may be easier in some ways for public sector organisations and skills providers to anticipate their links to the HS2 employment and skills agenda, many of these organisations are facing more immediate changes in their regulatory and funding structures.

A number of organisations have identified frequent changes in the skills system itself as a general business challenge to their organisation and some skills providers expressed concerns about the proliferation of regional strategies and plans and were keen to see a streamlining of these so that they can more easily engage with, and deliver on, regional agendas.

An additional major barrier limiting SMEs abilities to make the most out of HS2 opportunities is the management of the HS2 procurement process. In particular, the placing of contracts with large contractors who are then expected to be responsible for maintaining a supply chain, including SMEs. Specific concerns from East Midlands SMEs relate not only to this procurement mechanism and the difficulties in engaging with a prime supplier, but also that this means that they are unable to access information about how to engage, what the specific requirements might be (in this case of tier one providers) and therefore in being included in proposals.

Smaller businesses in particular are concerned that not only do they not have adequate networks with these larger firms but also that there is no mechanism for larger organisations to be held to account for actually placing the work with their proposed supply chain if they

won the contract. The fear is that the work that business may put – and in some cases *have* put – into developing innovative proposals for packages of work within tier one suppliers’ broader proposals might be used as ‘bid candy’ with no real intention of ever fulfilling such orders.

A final barrier to jobs growth in the design and construction phase is the potential to utilise workers and skills developed on Cross Rail, which might ‘move up the line’ with HS2 through Phases 1 and 2. There is a concern that unless regional sub-contractors are involved in the first stages of construction, there will be fewer opportunities for jobs growth in the East Midlands. This would also create the risk of skills ‘leakages’ from the East Midlands to companies based elsewhere in the country that are involved in early projects. This reinforces the importance of a focus on awareness raising and upskilling SMEs in relation to procurement as immediate priorities.

Box 1: Raising awareness of HS2 is a Crucial First Step

Awareness is crucial to the EM getting the most out of the HS2 opportunity.

- Unless businesses know about the ways in which HS2 might affect their business, they cannot take the decisions needed now.
- Unless learners and workers understand the impact on job opportunities they will not be able to make the right training decisions.
- Unless skills providers understand the ways in which large scale investments like HS2 might impact upon demand, they can’t respond by creating new courses or expanding existing ones.
- Unless careers advisers understand the scale of change driven by these strategic investments, they can’t advise young people about future opportunities.

An employment and skills strategy designed to get the most out of HS2 needs to start with an awareness raising campaign. It is only by engaging these different groups – through the inclusive governance approach sketched out below – that detailed planning and partnership working can help the EM region to use HS2 as an enabler of inclusive growth.

3.3 Delivering Inclusive Growth

Over recent years the concept of ‘inclusive growth’ has become more widely used as a marker of the type of prosperity sought by many agencies across the world. For example Inclusive Growth is promoted by the OECD, was the subject of a Commission by the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA), is promoted by the Joseph Rowntree Foundation and has become the central guiding philosophy of several City-Region strategies. While it is difficult to pin down a precise detailed definition, a widely accepted formulation is

“that Inclusive growth refers to broad-based growth that enables the widest range of people and places to contribute to economic success, and to benefit from it too.” RSA Inclusive Growth Commission (RSA, 2017)

The preference for inclusive growth at City-Region and Regional level in the UK and among international organisations such as the OECD, World Bank, International Monetary Fund and

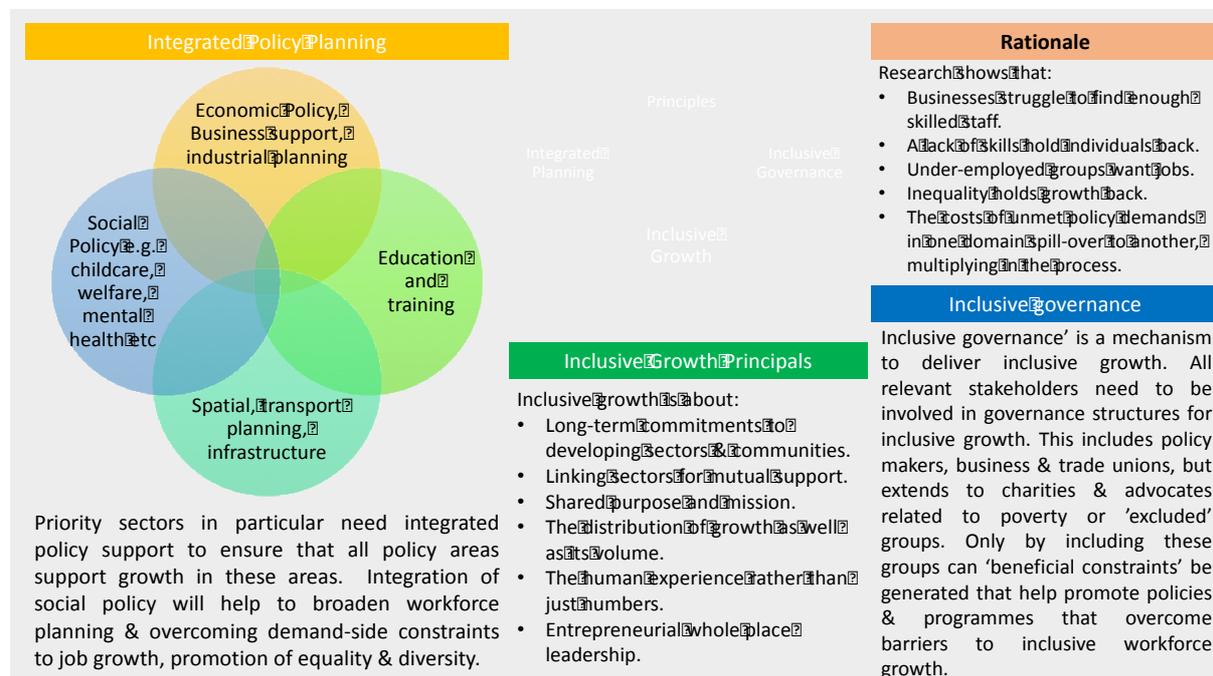
World Economic Forum, is set against the general assumption that recent approaches to promoting economic growth have not done enough to distribute its proceeds, leading to greater social dislocation, political instability and hampering growth itself. These factors are arguably present in the East Midlands, with the Inclusive Growth Monitoring Unit in 2017 rating D2N2 and LLEP as being 27th and 24th respectively among 39 LEPs for inclusive growth.

Given the wide-ranging, pan-regional opportunities that can come from HS2, Inclusive Growth offers an ideal conceptual framing for an employment and skills strategy for HS2 in the East Midlands.

To deliver this, the RSA recommends moving from a strategy of growth first followed by limited redistribution to inclusive growth where the proceeds are shared more widely from the outset. Because everyone has a greater opportunity to benefit from the start, better use is made of all the talents of all our people.

This requires an integrated local planning framework based on joining up local investment in skills, productivity, business support and local governance. It has an emphasis on upskilling, skills planning with business, supporting greater equality and diversity in the workforce and on the quality of jobs as well as overall employment. This leads then to a focus on ensuring wrap-around support for life-long learning and close collaboration between a range of local agencies, including skills providers, Jobcentre Plus, employers and employer representatives.

Figure 16: Inclusive Governance for Inclusive Growth



Adapted from RSA Inclusive Growth Commission (2017).

The most effective way of delivering inclusive growth is through 'inclusive governance' (see Figure 16) where a range of stakeholders are drawn in to local labour market planning, and involved in the process of setting, monitoring and reviewing labour market and economic development objectives, with this tied to a cycle of evaluation, performance monitoring and

policy learning. This is a two stage process of integrating planning so that economic development policies are supported by social policy, education and training and spatial, transport and infrastructure policies and interventions. It also includes drawing in a wide range of interests to ensure that these policies and the way they are delivered reflect broad interests. This can sometimes create what experts call 'beneficial constraints' which mean that policies work more effectively in the interests of all, over the longer term.

HS2 presents policy, business and other stakeholders in the East Midlands with an opportunity to take long-term decisions in the interests of all. Inclusive growth, integrated planning and inclusive governance offer an opportunity to deliver on that vision. The collaborative work done to date on creating the case for HS2 in the East Midlands provides an ideal starting position for developing this approach further.

The idea of inclusive governance also links directly to the research findings for this study. Employers are currently worried about skills supply, not just in terms of volume but in relation to specific matches to changing employer needs. They also often lack confidence that skills providers understand what is needed now, and employers themselves aren't confident that they can project their demand a long way into the future, because of contextual uncertainties combined with the pace of technological change.

For their part, skills providers report an ability and willingness to respond to employer demands but that they need clear information from employers about the changing nature of their skills needs. All these concerns map firmly onto HS2 related opportunities, but they are not confined to them.

All this suggests that there is a greater need for joined up information flow and planning in the skills system to bring demand and supply together in a coherent way, this is particularly important as HS2 related activities will need to evolve iteratively as the opportunities from this project emerge. The principle of inclusive governance within this strategic framework can support meeting these needs, ensuring all the right stakeholders are working together and with shared ambitions from the outset.

4 Making Recommendations

Summary

Recommendations are made taking into account the review of evidence, research findings, current composition and potential within the D2N2 and LLEP economies and how this maps against the opportunities that HS2 will bring. There are numerous examples of existing good practice across the region, which have been drawn upon in making these recommendations.

Recommendations are made against the following headings, with each heading having a top-level ambition:

- Inspiring Young People
- Building Further Education Capacity
- Harnessing the Power of our Universities
- Support for Individuals
- Ensuring our Business are HS2 ready

4.1 Inspiring Our Young People

Ambition: To raise the aspiration of our next generation of school leavers leading to a flexible and highly skilled workforce in the region that moves the East Midlands to the top of the attainment tables.

1. Recommended Action: To develop a programme of engagement covering the entirety of a young person's education, transitioning from inspiration to aspiration to realisation

• Challenge

The construction of HS2 Phase 1 is planned to commence in 2017 with Phase 2 not due to be operational until 2033. This 15 year 'mega project' provides both massive opportunity and challenge through which to deliver a step change in how we inspire our young people about their future and prepare them for the world of work.

Skills shortages across the engineering, construction and technology based industries are well documented and there are numerous education outreach initiatives; from individual company activities to large scale coordinated industry programmes seeking to address these. Beyond those sectors that link to the direct development of HS2, other key sectors for different parts of the region are also reporting difficulties in recruiting to certain role types, including hospitality, leisure, creative and retail sectors – all of which will play a central role in ensuring the region's long-term success.

Some local schools in the D2N2 and LLEP area continue to underperform against the national average with pockets of low aspiration and poor attainment. Derby City has recently been

designated an 'Opportunity Area', due to it being one of the lowest performing locations in the country with specific funding being made available for city schools aimed at improving performance. Whilst all of the various initiatives add value the landscape is both complex and fragmented and it is difficult and time consuming for schools to navigate alongside all their other priorities.

Arguably despite all the effort over a number of years impact has been limited. The percentage of girls pursuing construction and engineering remains stubbornly low, employers still complain that school leavers are 'not prepared for the world of work' and the level of knowledge of different career opportunities in young people is woefully low.

- **Solution**

HS2 provides a catalyst for a different, more radical and holistic approach. Rather than adding to the various initiatives already in existence, a series of projects on HS2 and its impact on the region should be embedded as a focus within the curriculum. The overall programme must aim to capture the hearts and minds of youngsters and recognise the breadth of the region's ambition. It is given the working title of #EM33 to signify the arrival of HS2 in 2033.

#EM33 would be a UK first, with projects running throughout the entire academic journey of young people in the East Midlands and linking to specific industry initiatives when and where appropriate. This includes HS2's own education outreach initiatives 'Zoom Rail', 'Zoom Train' and the HS2 STEM Inspiration days. The #EM33 projects should be developed in such a way that the HS2 initiatives can be embedded within them where HS2 are active but stand alone if there is no HS2 input. It may, with HS2 agreement, be possible to develop the #EM33 projects in such a way that the HS2 programme can be embedded without ongoing HS2 support. These projects will be designed to fit within national curriculum requirements to support teachers in using them and will encompass a variety of topics and subjects contributing to a significant and varied part of the curriculum including maths and English, languages, science, computing, art and design, design and technology, history and geography. They will require annual evaluation and adaptation to be 'kept live' as both the curriculum and education policy evolves over the coming decade.

These would not be 'boring classroom based' projects. The process of development would engage the most creative and innovative curriculum designers working with industry and business experts. Projects would be brought to life by the use of cutting edge technology and involve business and industry partners including young role models in their delivery; they would be inspirational and take teaching methods towards the 22nd century. For older pupils teachers are more likely to act as facilitators supporting and guiding pupils to develop their ideas and solutions.

Projects would be supported and underpinned by the development of an #EM33 App that students and teachers could use to access both project related information and resources and updates on the HS2 project itself.

A proposed approach for this is outlined below:

Figure 17: Examples of #EM33 Curriculum Developments

Focus	Key Stage	Age Range	School Years	Projects	Timescales
Inspiration	Key Stage 1	5-7	Years 1,2	One or two broad based projects	Develop 2017/18 Launch in schools 2018 and run for 10 years until 2028 potentially through until the railway opens with projects evolving to recognise this
Inspiration	Key Stage 2	7-11	Years 3,4,5,6	Two broad based projects building on Key Stage 1 (these should have the option to link to the HS2 Zoom Train programme in those schools that are included in the HS2 education outreach programme)	As above
Aspiration	Key Stage 3	11-14	Years 7,8,9	One substantive project that links to other industry based activity (eg construction, rail, STEM)	Develop 2017/18 Launch in schools in 2018 and run for 10 years potentially through until the railway opens with projects evolving to recognise this (ensures those currently in key stage 1 involved in three or four projects)
Aspiration	Key Stage 4	14-16	Years 10,11	Three or four projects that link directly to specific GCSE subjects and incorporate work experience opportunities, sponsored travel and 'girls only' strand	Develop in 2017/18 launch in schools in 2018 and run for 10 years potentially through until the railway opens with projects evolving to recognise this. As construction gathers pace this should include site visits to Phase 1 and

				(these should have the option to link to the HS2 Zoom Rail programme and STEM inspiration days in those schools that are included in the HS2 education outreach programme)	then in later years Phase 2
Realisation	Post 16 (A levels and T levels)	16-19	–	Three or four projects linked to relevant A and T levels incorporating work placements	Develop in 2018 for launch 2018 / 2020 alongside launch of relevant T levels. Launch simultaneously for A levels

It is important that commencement of the above begins as early as possible. The timescales proposed are very tight allowing the next academic year for development with delivery commencing in 2018/19 for most year groups. Delivery to this timescale is ambitious and would be dependent on the immediate availability of funds.

Once developed projects can be used by teachers across multiple schools and academic years without the need for ongoing expensive individual school interventions that require additional funding. This approach would be supported by a single D2N2/LLEP employability framework incorporated into our schools and FE colleges.

In order to encourage the uptake of #EM33 within schools, raise the profile and engage young people and their families/carers, two major annual events (one primary/junior school and one secondary/post 16) would be held, where schools showcase their projects to industry, business and wider stakeholders. These should be prestigious events and can be competitive or non-competitive.

Not all schools will embrace this concept and for some schools with certain specialisms the idea of what could be seen as ‘HS2 related’ projects may not appeal or fit with their overarching school philosophy so some targeting may be appropriate. That said it must be stressed that the projects envisaged go far beyond the immediate scope of jobs with HS2 or its supply chain.

- **Key partners**

D2N2; LLEP; local authorities; HS2; private sector

- **Funding considerations**

Ownership to sit within the two LEPs. Upfront funding required to design programme, promotional activity and app. Delivery to occur through refocus of existing programmes and activity and through in kind support from partners. The programme will also require continual evaluation.

2. Recommended Action: Ensure teachers and careers advisers are supported and provided with relevant information about local and regional career opportunities

• Challenge

Careers advice is no longer statutory in education and as a result provision and quality varies widely across Derbyshire, Nottinghamshire and Leicestershire. Too often young people make decisions about continuing in education or leaving for work without an informed understanding of the local opportunities available or the different pathway options that exist to achieve different employment goals.

This often reflects poor collation and communication of labour market intelligence, combined with low-levels of awareness amongst teaching staff on the different opportunities that exist for pupils.

• Solution

In addition to inspiring our young people, teachers need to be fully informed of the potential opportunities available both with HS2 and more broadly. Running alongside the #EM33 projects we recommend the development and funding of teacher and careers adviser placements with key tier 1 and 2 employers across the region and potentially into the West Midlands together with the provision of high quality briefing material. Lessons can be learnt from similar programmes that have already run, for example the Chamber's work placing careers advisers through its Schools Forum within Walgreen Boots Alliance. The #EM33 App should include relevant information for teachers and careers advisers. This should evolve over the years to include information about HS2 specific jobs in construction moving on to operational and maintenance roles and broader opportunities in key priority sectors for the region.

Appointment of a small number of specialist 'Lead Careers Advisers for HS2' is also recommended. These individuals would receive additional training and information relating to specific opportunities resulting from HS2 and would be equivalent to 'subject matter experts' within the careers function.

• Key partners

Schools; private sector

• Funding considerations

Administration costs associated with development and running of teacher placement programme. Existing networks of private sector employers to be utilised in developing the programme, supported by learning from pilot projects elsewhere.

3. Recommended Action: To build on current activity by LEPs and other partners to create a unified #EM33 business/school engagement programme

- **Challenge**

The evidence demonstrating that employment outcomes improve the more business interactions a young person has during their education is strong. However, despite a number of schemes and organisations aiming to address the issue across the region, there are differing levels of meaningful engagement from business with schools. This creates a 'post-code lottery' for young people in the East Midlands in regards to whether they have the opportunities to engage with business during their education.

Businesses also ultimately lose as a result of this, missing out on opportunities to raise their profile amongst local communities and promote themselves to the next generation of talent as an exciting employer to work for.

- **Solution**

Efforts to engage the private sector in supporting engagement with young people through the provision of opportunities must be better coordinated and current 'not-spots' of inactivity identified and tackled. The #EM33 brand provides an umbrella under which to do this, with businesses currently not engaged in any activity being encouraged to sign-up to a commitment to engage with schools, building on good work done by existing projects, such as the Education volunteering work carried out across Leicestershire by Leicestershire Cares and the Avenue Programme operating in North Derbyshire.

The aim must be that no child leaves school in the East Midlands without experiencing at least four meaningful engagements with business. Careers and Enterprise Co-ordinators (through the Careers and Enterprise Company) across the region, working with current LEP Skills Boards, are already making significant progress here and are in a position to play a lead role in coordinating activity, ensuring consistent levels of quality and sharing best practice from across the region – including careers days, work-placements, assembly talks and focused sector discussions.

- **Key partners**

Private sector; Careers and Enterprise Company; LEP Skills Boards

- **Funding considerations**

Delivered through a refocusing and coordination of current funding commitments. Beyond this, future funding may be required for continuation of the activity.

Box 2: Case Study 1: Danielle from Derby

Case Study 1: Danielle from Derby (aged 21 in 2033)

I first heard of HS2 when we were given a project to do at junior school. We had to plan a route to bring a new railway line from London to Birmingham and then through our region on to Leeds. We had to think about all the potential impacts and benefits and where the stations should be. Then as I progressed through secondary school I was involved in another HS2 project which covered part of our science and geography syllabus. I got really interested in some of the geology and land issues associated with planning routes so when I'd completed my A levels I decided to study Professional Construction at the Institute of Technology. Since completing my course I've worked as a Site Manager on a number of small commercial developments. I'm currently studying with the National College for High Speed Rail through their Virtual Reality training portal to gain a top up qualification in high speed rail civil engineering and I'm then hoping to get a job on the next major new rail project High Speed 4.

Box 3: Case Study 2: Charlie from Chesterfield

Case Study 2: Charlie from Chesterfield (aged 27 in 2033)

When I was at secondary school back in 2020 we did a project called #EM33. It was sort of about HS2 but it made us think about all the other potential benefits that the railway could bring. I've always wanted to 'be my own boss' so I started to think about what having a HS2 station would mean to Chesterfield. It seemed obvious to me that there would be the potential for a lot more tourists visiting the Peak District and that these people would need places to eat, stay and play!

After studying Hospitality Management I worked in a number of local hotels and restaurants to gain experience and to save enough money for a deposit to start my own business. I've just managed to secure a mortgage on a fantastic little hotel on the edge of the Peak District National Park and I'm planning to open for business next year. It's going to be incredibly hard work but I'm really looking forward to making my dream become a reality. I'm also developing a partnership with another local start-up business that will provide bespoke multilingual touring plans for our visitors; including virtual maps.

4.2 Building Further Education (FE) Capacity

Ambition: To develop greater responsiveness within the FE sector, supporting collaboration, flexibility and agility across East Midlands providers

4. Recommended Action: Embed #EM33 projects into new T Levels and relevant A levels

• **Challenge**

The Area Based Reviews covering D2N2 and LLEP areas have presented several areas for improvements across the area, particularly in around ensuring provision is relevant for the local labour market. Changes in funding regimes have made it harder for FE establishments to deliver certain courses and there is a level of risk aversion in footing the upfront costs to develop provision, which may not attract sufficient learners. Added to this, meaningful partnerships with the private sector – as is the case with schools – is patchy across the region.

Given HS2's impact in the East Midlands across the short-, medium- and long-term, it is essential that there is capacity and an ability to respond within the region's FE sector to enable young people and businesses to take advantage of the opportunities.

It is also important to develop closer ties between schools and the FE sector to ensure smooth transition and progression be it in 6th form, FE fulltime study or an apprenticeship.

• **Solution**

FE should be an integral part of the #EM33 project based curriculum approach. Year 2020 will see the launch of the new T Levels and whilst it's early days in the development of these new qualifications it is clear that government intends to put significant emphasis on work placements with periods of 3 months currently being suggested. This requires very significant engagement with business and industry and the #EM33 projects provide a fantastic opportunity and solution for achieving this, building on existing good practice such as Loughborough College's Bridge to Work Scheme, linking students with local employers across Loughborough and Charnwood. The timing for this is potentially ideal and we would recommend early engagement with the FE community to involve them in developing the way forward.

Other practice in the region to be built upon includes a project being led by Derby College is on problem based learning and the outputs from this work could be extremely useful in helping to shape what T level #EM33 projects might look like.

Development work should start during 2018 following on from the key stage 1-4 project development and in advance of T level launch. Principals should also be jointly tasked with bringing forward proposals for any requirements for STEM capital investment with funding being ring fenced through the Local Growth Fund.

Industry based placements for FE lecturers similar to those for school teachers outlined above should also be incorporated.

- **Key partners**

FE providers; LEPs; Local Authorities

- **Funding considerations**

Better direction of current funding opportunities and future Local Growth Fund.

5. **Recommended Action: Coordinate FE collaboration amongst the sector and with private sector providers across the two LEP areas on direct HS2 opportunities, including the development of strategic relationships with the National College for High Speed Rail (NCHSR) and greater access to training opportunities through more Massive Online Open Courses (MOOC) provision.**

- **Challenge**

While in its entirety HS2 will create tens of thousands of jobs, the numbers within specific higher skilled niche industries such as rail will be limited. Individual institutions are often in competition for students, however, an uncoordinated approach in the region will lead to gaps and duplication. An uncoordinated approach also harms meaningful engagement with other key partners, with the NCHSR already reporting issues in engaging strategically with East Midlands providers. Historically FE students are less likely to travel for learning unless it's an extremely niche subject, which further impacts on NCHSR's ability to engage in the region.

- **Solution**

It is essential that FE colleges work collaboratively with each other and with private sector to ensure a complimentary approach to developing people for the higher skilled niche roles that will be created by the development of HS2. FE Principals already meet regularly – #EM33 should be incorporated into their agendas, with regular reporting to the HS2 Strategic Board. A nominated FE Principal Lead should report to the HS2 Strategic Board on behalf of the sector, with input from private training providers also.

Efforts must be made to improve access to training, with colleges and private providers supported to develop greater online opportunities and flexible delivery to meet business needs.

Collaborative relationships beyond the immediate LEP areas should also be explored. This is particularly important to the north with the Sheffield City Partnership FE colleges and to the West into Staffordshire where students may well travel 'out of the immediate region' to their chosen education provider.

The NCHSR should be engaged with via the FE Principals group and relationships brokered to ensure our young people have access to the courses and apprenticeships that will be on offer. To ensure equal access opportunities, engagement could be delivered via outreach into regional colleges and should ensure that clear feeder routes into the different NCHSR pathways exist. Initial conversations suggest that the new college has limited resources to engage beyond its immediate geographies, therefore all efforts must be made to ensure activity is as complimentary to the NCHSR offer as possible to maximise the number of students that can be served, with a skills ladder from schools and FE into the National College.

Dialogue should also explore progression opportunities from the NCHSR into our HE institutions.

- **Key partners**

FE providers; private training providers; NCHSR

- **Funding considerations**

Delivered using existing forums and relationships

6. Recommended Action: Develop a World Leading Capability in Professional Construction and Building Information Modelling (BIM), linking closely to the proposed Staveley site

- **Challenge**

All UK government procured infrastructure projects now require some level of BIM; this includes rail and HS2 have made it clear that they will require all their relevant suppliers to make extensive use of BIM. There are still gaps in this area amongst East Midlands businesses, which limits the ability to bid for contracts from the region.

- **Solution**

It is understood that Chesterfield College and Derby College have collaborated to develop proposals for a Professional Construction Institute of Technology (IoT). This concept has huge potential for HS2 phase 1 and 2 construction, and ongoing infrastructure projects well beyond this. This activity should be closely linked with efforts to secure the Staveley maintenance depot site as a centre for offsite construction related to HS2. This would also add weight to the concept of individuals working on construction moving, in the fullness of time, onto maintenance roles based at the depot or nearby.

Derby College has an embryonic BIM Academy and the aspiration for the IoT should be to develop world class expertise in this emerging and powerful technology. This has the potential to draw in national and international students with strong links to the National College for High Speed Rail (NCHSR) in Birmingham and Doncaster. We would recommend funding the recruitment of a leading BIM expert, possibly as visiting professor, into the IoT as soon as practical. This individual would also support delivery at other institutions across the East Midlands.

An opportunity may also exist to develop closer industry links with the Explore Manufacturing world leading off site construction facility in Worksop and part of the Laing O'Rourke Group. Laing O'Rourke have invested heavily in 'Digital Engineering' or BIM and could be an ideal industry partner to help shape the future offering.

- **Key partners**

FE providers; LAs

- **Funding considerations**

Funding required for recruitment of a leading BIM expert into a regional IoT

7. Recommended Action: Support the Development of a Number of Shared Apprenticeship Schemes across Key Job Roles/Disciplines

- **Challenge**

The current emphasis on apprenticeships will continue well into the next decade regardless of the political landscape. While larger levy paying companies are starting to take a more proactive approach in order to recoup some of their levy money many smaller employers still find it difficult to recruit, train and fund apprentices.

- **Solution**

To develop a 'shared' apprenticeship scheme or schemes, which would offer the following benefits:

- Recruitment and training programme development is undertaken on behalf of companies reducing the administrative burden
- Individual companies do not have to employ apprentices therefore reducing the risk of having to lay off apprentices if there is a downturn in workload. (Many companies work on a very short term order book horizon of a few months so committing to a 3-4 year apprenticeship can be difficult)
- Apprentices can benefit from a number of 'placements' with sponsoring employers thereby gaining a wider variety of experience and skills for their future careers
- Employers have a choice when it comes to recruiting apprentices into full time roles on completion of the apprenticeship. Equally apprentices have a choice of potential employers.

This approach has worked successfully in some industries in the past through Group Training Association (GTA) or Apprenticeship Training Agency (ATA) models. Other models worth exploring are less formal and could involve a 'cluster' of employers collectively agreeing to support an apprentice. Such approaches are currently under discussion for rail – these initiatives should be supported, in order to encourage the development of GTA/ATA or other models in other priority industry sectors and disciplines, including IT, project management and construction through the LEP priority sector strategy groups.

This approach has a positive knock on effect in ensuring that local organisations can genuinely sign up to say they are supporting apprenticeships – a key indicator for HS2 when procuring suppliers.

Such a scheme should work with and complement existing mechanisms to coordinate apprenticeship availability in the region, such as the Nottingham Apprenticeship Hub and Chesterfield's Apprentice Town Activity, which both have the potential to be taken to a larger scale.

- **Key partners**

FE providers; Private sector; LEPs Strategy and Skills Advisory groups ; LAs

- **Funding considerations**

Funding required to establish and operate model

Case Study 3: Nadia from Nottingham (aged 19 in 2033)

When I was at school I was always interested in computers but didn't really know what sort of jobs were available that would enable me to pursue my interests. Then when I was doing my GCSE in IT I got the opportunity for a work placement with a company that was developing software for the new HS2 trains. That was it, I was hooked! I applied for an apprenticeship with the company and was successful. Initially I did a Level 3 Apprenticeship in Digital Technologies and I've just started my higher qualification so I can specialise in IT security in safety critical industries.

4.3 Harnessing the Power of Our Universities

Ambition: Maximising the potential of our HE strengths to provide leadership throughout the delivery of HS2 and build upon regional specialities

8. Recommended Action: Encourage Regional University collaboration to develop HS2 programmes of engagement with business, including Knowledge Transfer Partnerships, PhD and MRes, and Higher apprenticeship opportunities related to SMEs and HS2

- **Challenge**

The East Midlands is a net exporter of graduates, meaning the region does not always benefit from the skills people are learning here. This is a potentially complex issue driven by a number of factors such as job opportunities, salaries, numbers of international students, lifestyle issues and so on.

- **Solution**

Universities should look to develop programmes of business engagement based around the themes of HS2 in the East Midlands, which students may (depending on where they originate from) have been involved with at an earlier age. This would include HS2 specific Knowledge Transfer Partnerships as well as PhD and MRes opportunities related to SMEs and HS2-related sectors. It should also include activities aimed at the wider economic opportunity. This should be driven by individual universities and adapted to suit their institutions, study programmes and work placement activity. Supporting lifelong learning, higher apprenticeship opportunities should be developed for those already within the workplace wanting to upskill to take advantage of the opportunities HS2 will bring.

As part of this work LEP Employment and Skills Boards should form partnerships with University Careers Services to support the development of new placement and internship opportunities with local businesses.

- **Key Partners**

Universities; Midlands Enterprise Universities; LEP Employment and Skills Boards, Research councils, Innovate UK.

- **Funding implications**

Some of this activity can be delivered through leveraging existing resources. Business engagement can be leveraged to support KTPs in relation to HS2 business development. D2N2 and LLEP should also consider developing structures for joint business investments in PhD and MRes scholarships where the outcomes from longer- and shorter-term research projects can benefit groups of businesses.

Universities could develop shared PhD and other research programmes where there are complementarities in research expertise. LEP funding might help to establish such joint programmes.

LEPs may also wish to support PhD or MRes research related to policy innovations in any of the areas in the integrated policy planning framework in Figure 16 where this would help with business growth. For example, flexible and responsive childcare provision might help to broaden the workforce and overcome skills gaps. Effective and rapid mental health services and/or targeting might help to reduce sickness absence and again overcome skills gaps. Business buy in to a collective fund for research projects to overcome shared problems might also be brokered by the LEPs.

9. Recommended Action: Establish a Rail Industry Innovation Leadership Group through RFEM Involving All Relevant Universities and Network Rail and Led by an Industry Chair

- **Challenge**

Despite the evident need for higher skills within the rail sector there is currently limited focus on coordinated delivery to meet these needs. As at the levels of FE and school education, a lack of focus here puts the region at a disadvantage in terms of local businesses securing opportunities for contracts. Conversely, there is an opportunity for the East Midlands to demonstrate itself as a region of international excellence in this area, joining up the strengths within its HE institutions and forming stronger links with those outside of the region.

- **Solution**

The rail industry is currently bidding to the Higher Education Funding Council (HEFCE) to develop a number of 'Centres of Rail Excellence', collectively known as UKRINN. This initiative has four 'threads':

- Rolling stock (led by Huddersfield University and supported by Newcastle and Loughborough)
- Rail Infrastructure (led by Southampton University and supported by Nottingham, Loughborough and Sheffield)
- Rail Systems (led by Birmingham University)
- Network Rail's Rail Innovation and Development Centres (RIDCs). These four sites include significant rail infrastructure for trial and testing purposes and include two

locations in the East Midlands: Tuxford in North Nottinghamshire and Melton in Leicestershire.

As can be seen the region's universities are well represented in the above, in addition to geographically lying close to other key players such as Birmingham and Sheffield. It is also worth noting that in addition to the above Leeds University has recently announced they are establishing a Department of High Speed Rail.

Whilst some of our local universities are included in the UKRINN proposals it is understood that the funding is not equally spread and that the majority of the funds will go to universities outside the East Midlands. We recommend establishing a Rail Research and Higher Education Partnership group working closely with employers from Rail Forum East Midlands to ensure our universities are best placed to access funding, provide the services that rail companies need and can support the HE needs of local rail businesses. This group should include Network Rail, providing a link to the RIDCs for our universities and supply chain and FE colleges who are delivering or aspire to deliver rail related HE qualifications. The group should provide regular reports to the HS2 Strategic Board on its actions in support of HS2 and the rail industry more broadly.

- **Key partners**

Universities; RFEM; Network Rail

- **Funding considerations**

Administration costs associated with operating the partnership group.

10. Recommended Action: Develop options and plans HE-led growth at Toton and significant HE links at Chesterfield station, as well as other strategic sites in the region

- **Challenge**

The wider Growth Strategy is currently considering options for Toton station and Chesterfield station, including the HE-backed development of an Innovation Village around the Toton station. Ensuring the opportunities around our High Speed Rail stations are maximised is essential if HS2 is to be a success for the East Midlands. It is also necessary to support and maximise the opportunities from existing strategic growth sites such as innovation infrastructure (e.g. IHub) at Pride Park or Markham Vale. HS2 also needs to relate to other strategic developments in the region such as the regeneration of our city centres and plans to develop new Creative Industries quarters and the Broadmarsh area in Nottingham City Centre, or broader plans for Derby. The challenge of Toton in particular is the part that it will play in developing the integrated metro-economy of Derby and Nottingham.

- **Solution**

Its Universities are one the East Midland's key assets. In terms of knowledge, resource and connectivity they offer the region fantastic opportunities and help position it on a world stage. The development of a station at Toton – which sits between two of our three cities and comes with space for development opportunities – provides an opportunity for us to harness our HE sector and its collective resources as an asset. Plans for doing this should be pursued and

given full consideration. Successful harnessing of this site can play a substantial role in achieving agglomeration benefits from the integration of the Derby and Nottingham economies in particular.

Land available for development is more limited at Chesterfield, however, the role of HE activity complimentary to the wider advanced manufacturing and engineering strengths of the immediate area must be given careful consideration in the development of station plans.

- **Key partners**

Universities; Strategic Board sub-groups

- **Funding considerations**

All costs within current consultancy plans

11. Recommended Action: Develop Industrial Innovation Centres at the regions Universities to support Priority sectors including in HS2-related sectors.

- **Challenge**

We live in times of rapid technological change, associated with innovations in products, services and their production. In order for EM businesses to keep up with the competitive challenge it is necessary that they benefit from the latest research and are able to implement this in their own products and processes. This includes sectors directly affected by HS2, such as rail and construction. For example, HS2 Ltd wants to the line and rolling stock to use 'technology that doesn't yet exist'. The UK lags other competitors in terms of investment in R&D, and correcting this is essential to general competitiveness and meeting the ambitious requirements of strategically important projects like HS2.

- **Solution**

A strategic investment in research and infrastructure, including current and future workforce skills development, in Priority Sectors would help them to make the most of new technology and to ensure competitiveness. Investment in R&D – through partnerships between EM businesses and Universities, including in the rail industry can support the considerable strengths of the East Midlands. Rail is one example, and the sector forms part of one of the priority sectors for D2N2. A Rail Innovation Centre, for example, would help to focus both public and private sector funding into strategic research in support of the rail industry. However, other innovation centres – linked to the Priority Sectors – should also be considered.

- **Key Partners**

Universities, LEPS

- **Funding Considerations**

SEPs, Infrastructure Fund.

Case Study 4: Milly from Matlock (aged 34 in 2033)

I started University on a Foundation course in 2017. I was originally looking to enter childcare, however, just before I completed my BTEC final exams and coursework my school was visited by a lady who spoke about her job at a local car manufacturer. She was an engineer and was working then on battery technology for Hybrid cars. I was just blown away. She spoke about the types of qualifications I would need to be able to do a job like her. This wasn't at all like the course that I had planned to study, and I rang the FE college I had originally applied to. They advised me to contact a local University, which I did. They said it was too late to get on a degree level course in engineering and that I didn't have the right A-Levels to do this. However, they found me a place on a Foundation year course that would help me get into an Engineering Degree-Apprenticeship, which was new at the time. I never looked back. The Foundation year was tough, but I enjoyed the challenge; and despite my fears, I wasn't the only woman on the course either.

As part of my studies I had to go on a work placement, which I undertook at a small technology firm. I loved the placement, and I must have done well because when it came to graduation my final year project supervisor asked if I was interested in a scholarship for a short research project, called an MRes. This project focused on battery housings and was really hands-on. It took place in the company I had done my work placement with and I even got paid for it! It was amazing, my research and helped the firm win a new contract and when I had finished I was offered a role there.

That was five years ago. Since then I became interested in the engineering and software development behind train control systems. I decided that the time was right to set up my own business and, supported by a local business training programme at a local University, have trained in business planning to add to my engineering skills and have set up my own business.

Now, my little firm employs two other graduates – both women - and we are maintaining some of the train control systems operating at the new HS2 Station in Chesterfield. We are also working with one of the region's Innovation Centres and through that are embedding new technology currently being developed by one of the region's Universities. Next year we will host one of their researchers and we are hoping to engage in a Knowledge Transfer Partnership and to provide student placements too. Jasmine – one of my graduate employees is working with a local school to continue to bang the drum for young women to enter engineering and technical professions.

4.4 Support for Individuals

Ambition: Delivering inclusive growth by providing opportunities to strengthen local communities and support those furthest from the labour market

12. Recommended Action: Create and Deliver a High Profile Public Awareness Campaign to Raise Awareness and Excite East Midlands Residents about HS2

- **Challenge**

There is currently poor knowledge and understanding of HS2 in the East Midlands amongst individuals, with current perception being largely driven by media reports on costs and whether individuals are likely to be affected by the route. This lack of knowledge has the potential to undermine support for HS2 and create cynicism around the opportunities it will bring. Public disinterest of – or potentially hostile approach to – HS2 in the East Midlands would jeopardise the successful delivery of the whole project in the region and would certainly limit the opportunities to maximise the benefits it can bring to individuals living and working in the East Midlands.

- **Solution**

To deliver a major HS2 awareness and promotion campaign across the region that focuses on the economic benefits and broader opportunities that HS2 will bring and as something for the region and its residents to both ‘get behind’ and get excited and enthusiastic about. The campaign will draw upon learning for London 2012. Achieving this for HS2 is, however, much more difficult than for the Olympics because it doesn’t culminate with the same level of international ‘event’ however creative opportunities to increase interest can be developed.

While the campaign would be run regionally, the opportunities will vary locally and so messages will need to be tailored accordingly – with central coordination but local delivery, using local authorities, local business bodies and other local stakeholders.

The campaign needs to have a number of facets and should evolve over time:

- Are You HS2 Ready aimed at the general public in terms of economic, leisure etc. opportunities;
- Are You Hs2 Ready aimed at education providers to raise awareness and encourage involvement with #EM33 activities.
- Are You HS2 Ready for business that can bid and in the near future for contracts;
- Are You HS2 Ready for businesses closer to the scheduled opening of the line when business really ought to be planning for the opportunities HS2 will bring (say around 2027 shortly after construction of Phase 2 gets underway);

A specific advantage of such a programme is that by aiming to reach everyone in the general population it will automatically reach pupils, parents, teachers and other key influencers of young people thereby supporting earlier recommendations; together with employers, employees and potential employees hence raising business and job opportunity awareness.

- **Key partners**

LEPs; Local Authorities; Business representation bodies

- **Funding considerations**

Funding required to develop and deliver campaign

13. Recommended Action: To embed #EM33 activity across job centre and local authority employment support programmes across the East Midlands

- **Challenge**

Despite a number of successful employment support programmes across Leicestershire, Derbyshire and Nottinghamshire, those furthest from the job market still struggle to gain and maintain employment in the region. This issue is further highlighted by current low levels of unemployment across many parts of the East Midlands. Groups particularly at risk of struggling here include ex-offenders, those with learning difficulties or disabilities, former service men and women and people returning to employment after a significant period out of work. There is also a substantial NEET population.

- **Solution**

As with schools, FE and HE, the #EM33 programme should be used to inform and shape employment support programmes in the East Midlands. There are a number of current and past successful programmes operating in this space already, including the Ambition Programme, which works with over 18s in Job Centres across NEDDC, Bolsover, Chesterfield, Derbyshire Dales and Bassetlaw and the past Making the Connection campaign, which engaged partners across multiple agencies to connect local people to local jobs in Greater Nottingham. Future funding and project development should build on existing good practice, embedding within it the principles of #EM33, to raise the profile and engagement opportunities with business. The *Get Me Into Engineering* Programme in Derby supports women on benefits to access opportunities in a traditionally male sector. #EM33 offers potential to cut across and support existing initiatives like these. Within this, consideration should be given to develop existing transport support packages for physically accessing employment opportunities.

- **Key partners**

DWP; Local Authorities; voluntary sector; private sector

- **Funding considerations**

Funding to be drawn from existing and future employment programme streams

14. Recommended Action: Produce an East Midlands-wide HS2 delivery Charter for employers within HS2 supply-chains operating locally to commit to, outlining requirements for engagement with under-employed and hard to reach groups when recruiting their workforce

- **Challenge**

The evidence shows that the presence of large infrastructure development and associated projects within an area does not automatically translate into the creation of local

opportunities, particularly for those furthest from the job market. This challenge is exacerbated by the contract nature of many infrastructure projects, where the workforce will move 'up the line' as the project progresses, moving a workforce into an area rather than making use of local resources.

HS2 have stated that they want a significant amount of their spend to be with SMEs although to date there don't appear to be any specific mechanisms for ensuring this happens or for monitoring it. A proactive approach is therefore needed if we want local people to be in a position to take advantage of the opportunities HS2 will bring

- ***Solution***

LEPs and local authorities must work closely and proactively with the private sector, DWP and Jobcentre Plus and HS2 to secure meaningful commitment from those delivering the project to engage with hard to reach groups in the local labour markets, to include working commitments to include local labour (and training) 'promises' in their tender bids.

HS2 has similar commitments within its own procurement policies, however, local reinforcement of these will ensure meaningful results in the East Midlands. To support this, a region-wider Charter should be produced for businesses (based here or elsewhere) involved in HS2-related activity in the region to sign up to.

There are a number of precedents for this work that can be learnt from, including the Working Communities programme in NEDDC that secures commitments from those seeking planning permission, and the local commitments made by contractors delivering the NET project in Nottingham.

This requires a modest amount of dedicated resource to work across bidding companies, training providers, liaise with DWP and other relevant stakeholders such as Young Offender Institutions. It is also an area that could lend itself to further development in any future local funding models.

- ***Key partners***

Private sector; local authorities; DWP

- ***Funding considerations***

Minimal funding required in agreeing and establishing the charter.

Case Study 5: Linda from Leicester (aged 40 in 2033)

I never really thought about HS2 or the impact it might have on my career especially since the railway line doesn't even come through Leicester but in reality it's had a massive impact. I work as an Customer Experience Manager at the National Space Centre in Leicester but for the last five years I've been working on the plans for the new National Space Tourism Hub being developed near East Midlands Airport. The majority of our tourists will be from Europe, they will connect onto HS2 in London and then once they alight at Toton they will be transported to the Space Hub by our fleet of autonomous drones.

If it hadn't been for HS2 no-one would have thought about the possibility of a space port in the East Midlands and I would never have got to work on this amazing project!

Case Study 6: Martha from Market Harborough (aged 30 in 2033)

I guess I was what many people would call a 'typical difficult teenager' except that instead of growing out of that phase I ended up leaving school with no qualifications and no real career prospects and I ended up in a Young Offenders Institute. One day someone came to talk about the opportunity to work for HS2. They said they were prepared to give everyone a 'fair chance' and a 'new start....so I thought this is my opportunity. Initially I was supported to do maths, English and then a Level 2 qualification in track engineering. Following an interview I got a job with one of the contractors doing some of the civil works and laying the track for HS2. After 6 months they suggested I do my level 3 apprenticeship and then they trained me on the automated tracklaying machine. I was based out of the construction site at Staveley so when the construction was coming to an end I enquired about a job based at the maintenance depot that was going to be opening there. I'm now part of the Mobile Maintenance Team. We receive a liveCase Study 6 feed of data 24 hours a day from hundreds of sensors embedded in the track and on the trains and from our overhead drones. Working with our asset management colleagues we identify what maintenance needs doing and at night whilst everyone else is asleep out we go with our multi million pound maintenance train and our robot engineers to ensure that any repairs are completed well before the first train is ready to run the next day.

4.5 Ensuring Our Businesses Are HS2 Ready

Ambition: Giving our businesses the tools to benefit from HS2 and enhance their competitiveness to win opportunities

15. Recommended Action: For the Public Awareness Campaign for HS2 to have a specific business strand to Raise Awareness and Excite East Midlands Businesses about HS2

- **Challenge**

As with individuals, there is currently poor knowledge and understanding of HS2 in the East Midlands amongst the majority of the business community, other than from those relatively few firms that might benefit directly from HS2 related contracts. Even amongst these knowledge is limited, with many seeing HS2 as a far-off project despite many billions of pounds worth of contracts already being let or being bid for.

The lack of knowledge is resulting in current opportunities being missed, which has the potential to undermine future bids.

- **Solution**

To deliver a large scale awareness campaign for businesses on the opportunities that HS2 will bring for the region. This should be developed as a specific stream within the public awareness campaign detailed earlier, with clear business messages and outputs. Such a campaign should commence as early as possible.

- **Key partners**

As with Recommendation 12.

- **Funding considerations**

As with Recommendation 12.

16. Recommended Action: To support HS2 Supply Chain liaison and business development, and to develop a 'Fit4HS2' offer.

- **Challenge**

The majority of HS2 related opportunities will come through the supply chain rather than directly with HS2 itself. This supply chain is likely to be highly complex involving international consortia, large national contractors through to local SMEs. Navigating this requires resource, time and relationships that will not always exist in the region's SMEs.

- **Solution**

To offer enhanced support for HS2 supply chain liaison for SMEs across the East Midlands. This support would:

- Create a 'Fit4Hs2' offer, mirroring the 'Fit4Nuclear' model, which offered a diagnostic tool and adviser support to align strategic thinking, policies and practices within businesses to be HS2 'procurement ready'.
- Identify and communicate HS2 tendering opportunities to local companies;

- Monitor HS2 bidders and potential bidders and build relationships on behalf of the region with key players/Tier 1 bidders;
- Work with HS2 and potential Tier 1 contractors to identify a list of requirements that could be supplied/provided by the companies in the region together with the timescales;
- Compile a list of all rail related companies in the region who could provide the requirements above;
- Arrange “meet the buyer/bidders” for the local companies so that they can make themselves known to the bidders/buyers.
- Encourage collaboration between local companies to enable them to bid for larger packages of work and/or share the risks;
- Provide business advice to potential SME bidders, identifying development areas for them and funding opportunities for doing this
- Liaise with bidders to include local labour and training including liaison with training providers;
- Follow up with winning bidders to facilitate delivery of the promise;
- Liaise with LEP Growth Hubs to ensure they are well positioned to support local businesses;
- Connect businesses with apprenticeship providers.

- **Key partners**

LEPs; private sector

- **Funding considerations**

New funding would be required to pay for this resource

17. Recommended Action: Deliver business support activity to support SME collaboration for HS2 bidding opportunities

- **Challenge**

While dedicated HS2 Supply-Chain liaison support will greatly improve the ability of businesses to recognise and understand opportunities, many SMEs still struggle with capacity issues within management structures, potentially hindering their ability to take advantage of these opportunities. This may be due to a lack of management time to strategically plan for HS2 or through limited resource for planning and working with others to collaborate for bids that they may be too small to go for individually.

- **Solution**

To use ERDF underspend in the region to fund SME HS2 leadership and collaboration activity. This would support leadership and management within those SMEs within the region’s priority sectors, whose activity make them candidates for delivering HS2 contracts, in addition to introductions to potential collaborators within the region and support for HS2-related business planning. In particular, the funding would support smaller companies with the potential to bid for work in:

- Leadership and management capabilities

- Operating within sustainable, global supply-chains
- Skills development within the workforce
- Developing internal policies for procurement

Outputs would be measured by bids made and collaborations formed. This would be the only scheme of its type in the country that is specifically based on the opportunities associated with HS2 and is justified within the East Midlands by the large numbers of SMEs within appropriate sectors and the current lack of collaboration and bidding coming from this area. The skills and tools delivered through the delivery, which focuses on ways of working together, would of course be applicable for other projects beyond HS2.

- **Key partners**

LEPS; Private sector

- **Funding considerations**

Use of ERDF underspend.

18. Recommended Action: Create a central resource for businesses to identify HS2 specific opportunities

- **Challenge**

The lack of a single place for businesses to find out information about HS2 opportunities is a key factor undermining business awareness and strategic planning for HS2. At present, it is highly likely that those businesses that aren't already involved through existing supply-chain activity or experience of delivering in similar contracts will continue to view HS2 opportunities as being out of reach and not for them.

- **Solution**

To develop a dedicated web presence for HS2 business opportunities in the East Midlands, providing a central location for all tender opportunities along with potential bidders, contacts and timescales. This would link into the business awareness campaign and also be used as a tool for the supply-chain liaison post and to promote business support opportunities. East Midlands businesses would need to sign up to gain access to material.

To avoid confusion and help drive new traffic, the new web presence should be closely linked to the continuing development of the D2N2 Growth Hub and LLEP Business Gateway, which would be both be in a position to support with administration.

- **Key partners**

D2N2 and LLEP Growth Hubs; HS2

- **Funding considerations**

Funding required to develop a new web presence, building on current funding for East Midlands' Growth Hubs.

19. Recommended Action: Ensure Business Support helps employers to access under-employed groups and to ensure equality and diversity in their workforces

- **Challenge**

The data shows that employers are currently experiencing skills shortages and that this constrains business development, growth and productivity. The challenges associated with Brexit and new growth opportunities (including but not only HS2) and very low levels of unemployment suggest that skills gaps and problems are only likely to intensify. At the same time though some groups are under-employed including NEET young people, women and some ethnic minorities. The challenge is bringing under-used labour supply and areas of strong labour market demand together, to both enable growth and to ensure that growth is as inclusive as possible.

- **Solution**

Support for individuals can help them understand opportunities and to develop the skills necessary to take advantage of them. However, sometimes structural problems still prevent supply and demand coming together. For example, flexible working patterns to enable individuals to continue to train while in employment or cope with child care and other family responsibilities can help. Similarly, some sectors and occupational groups may be perceived as unwelcoming by some social groups. Support for employers through Equality and Diversity Workforce training can help them to develop more inclusive and diverse workforces, making the most of the potential and talents of the whole EM population.

- **Key partners**

D2N2 and LLEP Growth Hubs; and FE/HE providers.

- **Funding considerations**

Local Growth Fund and ERDF support could be used to support SMEs in this regard.

Box 8: Case Study 7: XYZ Electrical Services Ltd.

Case Study 7: XYZ Electrical Services Ltd.

We hadn't really thought about the potential opportunity to work on HS2 until the HS2 Liaison Manager contacted us to let us know that the company that had won the contract to build the station at Toton were looking for local suppliers. We bid for and won the contract to supply and install all the electrical services at the new station. We had great support from a number of organisations locally to ensure we were able to meet all the key criteria on the tender submission including developing a longer term strategy to ensure we could capitalise on the HS2 related work. As a direct result of the HS2 contract we employed 4 apprentices and since then we've increased our turnover by a further 30%. We are now bidding for and winning more work in infrastructure development which we wouldn't have thought about if it hadn't been for HS2.

Box 9: Case Study 8: Peak Legal LLP

Case Study 8: Peak Legal LLP

Having spent 10 years working in the city as a lawyer I decided I wanted a better quality of life. I wanted to find somewhere more affordable to live, with proximity to great outdoor places and quick/easy access to London to visit friends and family. I looked at Chesterfield and thought it would be the perfect place! I moved here a year after the HS2 line opened and set up my own legal practice. I now have 10 lawyers working with me – we cover mainly commercial work which takes us all over the country and the great connectivity from Chesterfield both north and south is a huge benefit to our business.

5 Delivering the recommendations - a timeline for success

Summary

To deliver on the recommendations will require strong leadership and an inclusive approach to ownership and governance.

To achieve this it is proposed that a new body be established, with representation from all those involved – including young people themselves – and a clear mandate to identify areas of priority for driving forward recommendation implementation. In doing this fuller resource and partnership implications will become clearer, along with how these can be met. As required, this group may also have a lobbying and advocacy role, both locally but also with national policy makers.

While 2033 may feel distant, in reality the timeline for delivering on the recommendations is tight and requires immediate action, led by the East Midlands HS2 Strategic Board.

Taking the recommendations forward will not be straight forward. Some involve the development of new activity, others build upon and seek to maximise existing good practice. Some are geographic and/or time specific, others suggest approaches to working pan-regionally and require an iterative approach to development, ensuring flexibility and responsiveness to changing circumstances across the coming years.

In addition to these challenges, the disparate nature of much of the current activity, along with the constantly evolving landscape of national and local skills and employability activity and the pressures that partners face as part of both their day-to-day activity, means that the starting point for delivering the recommendations requires determined leadership with a clear focus and a mandate for doing things differently. It also requires an inclusive approach to ownership, ensuring all partners understand their stake in delivering on recommendations and realising the opportunities.

In the immediate term, the East Midlands HS2 Strategic Board is best positioned to determine how this takes place alongside the delivery of the wider Growth Plan, but without its own focus many of the recommendations will fail to materialise.

Therefore, and as a final recommendation, an inclusive governance model should be developed for delivering the East Midlands HS2 Skills and Employability Strategy, engaging public and private sectors, the education and training sector, along with young people themselves. It should entail the creation of a new Commission or board, which would have representation from public and private sector, those in HE, FE and secondary and primary schools, other training organisations, DWP, and importantly, young people and other end-recipients themselves.

Under this model, existing forums such as the SEBs could be used to feed into these structures, but greater engagement between strategic stakeholders (LEPs, Local Authorities, SFA), skills providers at all levels, sectoral organisations such as Sector Skills Councils and

employers will be essential to ensure planned provision to ensure supply and demand are matched. Input from representatives of other interests such as NEETs or mental health service users is also essential to ensure key constraints on growth and social mobility are mitigated.

The group would have a clear remit to communicate openly and transparently with their peers that they represent. They would also have common cause in terms of the aim and objectives of the activity, and a commitment to measuring and capturing outputs and outcomes, identifying best practice, new opportunities and areas where further support may be required. As required, the group would also have an advocacy and lobbying role, both locally but also with national policy makers.

Throughout the recommendations, suggestions are made as to resource implications and likely partners. As activity is developed, the group would need to further shape the recommendations, and in doing so determine the full extent of resources required, where these can be obtained, and who is best placed to lead.

Figure 18: Timeline

