



HS2 London to the West Midlands Appraisal of Sustainability

Appendix 3 – Socio-economic Report

A Report for HS2 Ltd

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Structure of the AoS report and appendices

Non Technical Summary
Main Report Volume 1
Main Report Volume 2 – Plans and Appraisal Framework
Appendix 1 – The Appraisal Process
Appendix 2 – Greenhouse Gas Emissions
Appendix 3 – Socio-economic Report
Appendix 4 – Associated Assessment Reports
Appendix 5 – AoS Technical Reports
Appendix 6 – March 2010 Preferred Scheme and Main Alternatives: AoS information

1. Introduction

1.1. High Speed Rail and Economic Development

- 1.1.1. Investing in HS2 would involve creating significant new rail capacity for the provision of fast and reliable services between London and the West Midlands, and potentially beyond in the longer term. In addition, the connection to the West Coast Main Line (WCML), east of Birmingham would mean that the benefits of faster rail can be experienced by users that are travelling to, or from, places further north from day one. This means that the benefits of high speed rail, in terms of faster rail journey times and better intercity connectivity, would be experienced across a far wider area than the new HS2 line of route. The size of the scheme, its ability to provide major reductions in journey times between London and Birmingham and beyond, and the possibility of enhanced international connectivity, means HS2 would provide substantial economic and social benefits locally, regionally and across the wider UK economy.
- 1.1.2. The direct impacts of HS2 would be increased capacity and journey time savings experienced by business and leisure travellers that would switch from existing rail services and other modes when travelling between London and the West Midlands, and to places further north on the WCML such as Manchester, Liverpool and Scotland. There would also be reductions in overcrowding and enhanced service frequencies for some classic lines, particularly along parts of the WCML corridor, where long distance services (that move to HS2) would be replaced with additional local and semi-fast intercity services. This would benefit the growing commuter catchments north of London to Milton Keynes, and south of Birmingham to Rugby.
- 1.1.3. A key benefit would be the contribution HS2 would make to UK productivity. The location of HS2 stations would create development interest bringing about increased employment and housing opportunities. This has the potential to contribute to the regeneration of some of the country's most economically and socially deprived areas through creation of new job opportunities and improved housing and other facilities. This report looks at this development potential around HS2 stations. It should be noted that changes to the transport system would not drive these dynamics on their own; they depend, for example, on the ways in which transport changes integrate with local development plans and strategies. They are also influenced by the nature of competition between cities and the wider regions.

1.2. Purpose of the Socio-economic Appraisal

- 1.2.1. The main purpose of the socio-economic appraisal is to provide detailed analysis of the potential impacts of HS2 on economic development and regeneration in communities directly affected by the scheme.
- 1.2.2. This report examines the predicted changes in land use patterns and resulting development opportunities. It assesses the potential for localised development impacts around the HS2 stations, which are not captured in the main business case modelling and appraisal framework.
- 1.2.3. The construction of HS2 would also release capacity on the WCML. This would enable an increase in the frequency of services which would increase commuting opportunities into Birmingham from the Coventry corridor, including Canley, Berkswell, Marston Green, Lea Hall and Stechford. The number of fast trains per hour on the WCML to London during the peak hour would also increase, as would the number of fast trains into Birmingham International and Birmingham New Street. There would also be an increase in the number of services between Milton Keynes Central and London Euston. The land use impacts that would result from these changes around the classic network are described in this report but are not assessed in detail. These impacts would be assessed once the transport modelling is further developed.

1.3. Methodological approach to the appraisal

- 1.3.1. In undertaking this assessment account has been taken of the socio-economic impact of transport schemes including other high speed rail schemes. It is commonly accepted that the main impact on land use, of new stations or improved services, is located within a 10-15 minutes walking distance of the station, which equates to a catchment area of 1km. A station catchment radius of 1km was therefore applied to HS2 stations, except for the proposed Birmingham interchange station which is in a more remote location so a 2km radius was used. The station catchments were adjusted to correspond to the nearest ward or output area boundary for which socio-economic statistics are produced.
- 1.3.2. The socioeconomic baseline examined the density of employment and people, skill levels, economic activity, levels of deprivation, sectoral breakdown of the economy and the labour catchment area as shown by travel to work patterns. This enabled an assessment of the scale, density and type of development that likely to be attracted within the station catchment area and the potential impact on the local population (in terms of jobs and housing).
- 1.3.3. This assessment considered the accessibility of the catchment area, the existing nature of the area in terms of land use and density, the health of the local economy and property market and existing and aspirational planning policy. Account was also taken of competing sites in the area and the underlying demand for development. It then predicted the potential future level of development activity. Employment estimates were made by applying employment densities produced by the Homes & Communities Agency (HCA).
- 1.3.4. The assessment used professional judgement and experience on property markets to determine the predicted uptake of potential development activity that could be attributed to HS2. Where possible, the baseline research, local area knowledge and professional judgement was then used to estimate the proportion of jobs that would be taken up by the local population.
- 1.3.5. The next steps in developing the socio-economic appraisal may be to:
- Investigate the impact of additional rail services on the 'classic' network on development and employment in the areas around stations such as Milton Keynes, Coventry, Rugby and Northampton.
 - Investigate the wider regional impacts of high speed rail, for example, how the Black Country region would be affected by the introduction of High Speed Rail to Birmingham.

1.4. Structure of the report

- 1.4.1. This report presents the analysis and key findings for the anticipated socio-economic impacts of HS2 around the proposed new HS2 stations, and is structured as follows:
- Chapter 2: states the HS2 objectives, outlines the design concept and presents the HS2 demand forecasts;
 - Chapter 3: summarises the main findings;
 - Chapter 4: establishes the socio-economic baseline in the affected areas;
 - Chapter 5: provides both a qualitative and quantitative socio-economic appraisal of the impacts of HS2, including potential development and employment impacts around the HS2 stations.

2. HS2 Objectives, Design Specifications & Forecast Demand

2.1. HS2 Objectives

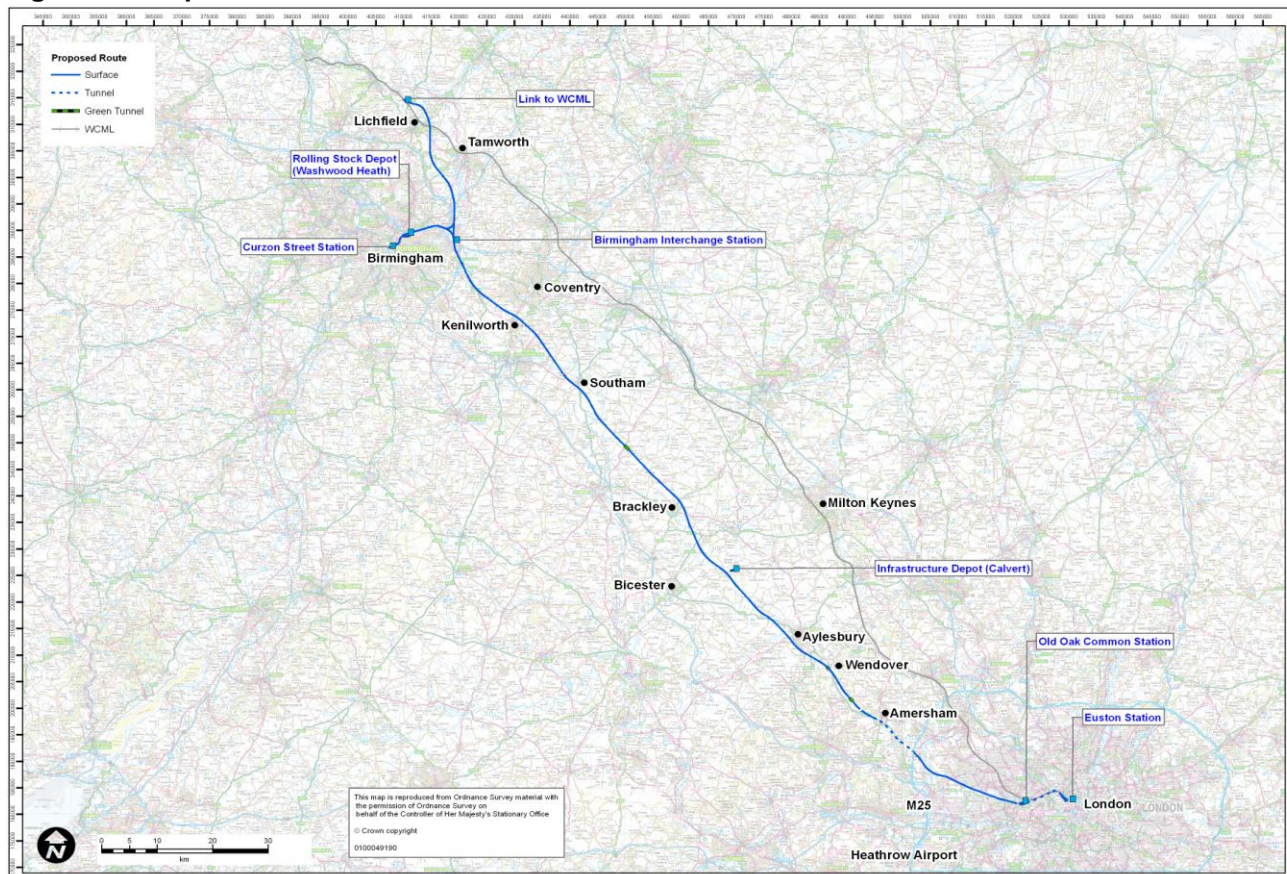
- 2.1.1. This appendix supports the AoS Main Report which describes the extent to which the new high speed railway, HS2, proposed by the Government between London and the West Midlands (the 'proposed scheme') supports objectives for sustainable development. It contains the findings of a socio-economic appraisal that has helped to inform development of the proposed scheme.
- 2.1.2. It appraises a proposed high speed rail connection between London and the West Midlands. Along with the 225km of new railway, the proposed scheme includes:
- a redeveloped station at Euston serving both high speed and conventional speed (classic) services;
 - a rail connection linking HS2 with the existing HS1 (Channel Tunnel Rail Link) line;
 - an interchange with Crossrail and other services at Old Oak Common allowing access to Heathrow, as well as connections to the West End, the City and Docklands;
 - provision to allow future connection to Heathrow directly off the high speed line;
 - a new interchange station near Birmingham International airport;
 - depots at Washwood Heath (in Birmingham) for rolling stock and at Calvert (north-east of Bicester) for infrastructure maintenance;
 - a spur into Birmingham alongside the existing Tamworth & Nuneaton line west of Water Orton, with a terminus at Curzon Street; and
 - a route to a tie-in with the WCML at a new junction north of Lichfield.
- 2.1.3. This report reflects certain modifications requested by Government and follows further work to consider options that included connections with Heathrow and options to further mitigate HS2 Ltd's recommended scheme published in March 2009. From this emerged the proposed scheme that is the main subject of this report.
- 2.1.4. The Government has now endorsed the development of proposals that would extend HS2 northwards from the West Midlands. This would comprise two arms, one running from the West Midlands to Manchester and then connecting with the WCML, the other branching eastwards from the West Midlands to run through the East Midlands and South Yorkshire and on to Leeds, with a connection to the East Coast Main Line (ECML). These are currently the subject of ongoing design and appraisal and are not addressed specifically in this report.
- 2.1.5. The objectives of the development of the new line were initially outlined in early 2009 in an exchange of letters between HS2 and the UK Government.¹ These objectives are summarised to include:
- providing new passenger capacity;
 - creating faster journeys;
 - encouraging modal shift;
 - improving connectivity; and
 - supporting regeneration and growth.

2.2. HS2 Outline Design

- 2.2.1. The proposed route of HS2 is shown in **Figure 1**.

¹Sir David Rowlands to Lord Adonis (then Minister of State for Transport), 13 February 2009.

Figure 1 – Proposed HS2 Route



Source: HS2 Report to Government 'High Speed Rail – London to the West Midlands and Beyond' (February 2010)²

2.2.2. As of December 2010³, the infrastructure assumptions that underpin the proposed HS2 route include:

- London terminal station at Euston: would provide 10 platforms for HS2 services with a grade separated station throat. An additional 14 platforms would be provided for WCML services, of which 4 will have dual high speed / classic use;
- Old Oak Common: provides a 6 platform London interchange station for easy connection with Crossrail services to Heathrow, central London and Docklands and a direct interchange to HS1;
- HS1 connection: there would be a direct link from HS2 at Old Oak Common to the HS1 line, allowing through services to/from European destinations from Day 1;
- Heathrow Station: there is no station at Heathrow Airport; however, there is a provision to allow future connection to Heathrow directly off the high speed line;
- Intermediate Station: there is no intermediate station between Old Oak Common and Birmingham Interchange;
- Infrastructure Maintenance Depot: this would be located at Calvert at approximately half way between London and the West Midlands and with good rail and road access to facilitate maintenance requirements;
- Birmingham Interchange: provides a 4 platform West Midlands interchange station, constructed in the vicinity of Birmingham International Airport (BIA) and the National Exhibition Centre (NEC);

² Note that current proposed option is for a Birmingham station at Curzon St.

³ Previously, there was no HS1 connection, and therefore change in proposal has not yet been modelled.

- Delta Junction: a delta junction that is grade separated is to be constructed to the east of Birmingham and allow conflict-free movement of traffic London-Birmingham, London-Manchester, Birmingham-Manchester;
- Birmingham terminal station: a central Birmingham terminal station is to be constructed at Curzon Street and consist of 6 platforms; and
- Rolling stock maintenance depot: a maintenance depot is to be built near Washwood Heath.

2.2.3. Other major infrastructure works include some infrastructure and signalling works in the Stafford area to alleviate capacity constraints. Works to provide congestion relief in the Manchester area would also be provided by the Manchester Hub project. In addition, the electrification of the Manchester to Liverpool route is assumed to be completed.

2.2.4. For rolling stock, it is assumed that all services operated on the core section of HS2 (Old Oak Common to Birmingham Interchange) would be operated by high speed trains only. A proportion of the fleet would comprise classic compatible high speed trains for alternative running on the WCML further north.

2.3. Train service and journey time assumptions

2.3.1. Assumed future train services have been divided into 3 categories:

- high speed services: services to/from London, Birmingham, Manchester, Liverpool, Preston and Scotland;
- further HS2 services: covers opportunities for other services to use part of HS2 included Birmingham-Manchester, London-Chester-North Wales;
- other reconfigured WCML services;
- semi-fast services London-Crewe and London-Glasgow;
- semi-fast services London-Stoke-Manchester;
- other London-Birmingham-Wolverhampton-Liverpool services;
- London-Milton Keynes-Northampton and beyond; and
- Coventry Corridor.

2.4. Journey Time Savings on High Speed Services

2.4.1. The journey times for high speed services are outlined in **Table 1**.

Table 1 – Expected Improvements in Journey Times due to HS2

London To/From:	Current Journey Time (mins)	New Journey Time (mins)	Change (mins)
Birmingham	82	49	-33
Manchester	127	100	-27
Liverpool	128	110	-18
Preston	128	108	-20
Glasgow	271	240	-31

Source: HS2 Communication

2.5. Reconfigured WCML Services

2.5.1. By taking some of the non-stopping services off the WCML south of Lichfield, significant capacity would be released on this section of the route, which can be used for expansion of existing and new services. Up to 11 additional train paths per hour in each direction throughout the day would be created, depending on stopping patterns and train speed differential. This section of the report covers the proposed reconfigured WCML service,

including both remaining long distance services and the potential for increased freight and commuter/suburban traffic.

2.5.2. In terms of long distance services, HS2 Ltd has modelled an altered service pattern which would complement the classic compatible HS2 services, and preserve fast classic trains for certain intermediate stations. The opportunity has been taken to propose re-establishment of regular connections from the north to the growth areas on the southern part of the WCML such as Milton Keynes. Broadly speaking, these remaining services fall into five categories:

- London – Birmingham – Wolverhampton (– Liverpool)
- London – Crewe – Glasgow
- London – Crewe
- London – Stoke – Manchester
- London – Chester – North Wales

2.5.3. The capacity released by HS2 would also presents opportunities for commuter/suburban services on the way into Birmingham (along the WCML Coventry corridor) and into London.

2.5.4. For commuter capacity into London, HS2 Ltd has modelled substantially improved services for Milton Keynes, Northampton and Rugby, as well as additional services to commuter towns closer to London. Under these assumptions, Milton Keynes would receive 6 non-stop services to London in the peak hour, with 5 further services stopping only at Watford junction, and two local stopping services. For commuter capacity into Birmingham, the removal of some of the Euston services along the Coventry corridor would provide the opportunity to achieve a better separation of short-distance local flows and inter-urban flows, providing a higher degree of service regularity, frequency and improved journey times for both. The service assumptions also allow the diversion of a cross country service via Coventry and Birmingham International. The enhanced service to Birmingham International would also give stations on that corridor a good rail connection to HS2 via Birmingham Interchange.

2.5.5. In terms of freight modelling, the WCML is Britain's key trunk route for rail-borne freight, with over 50% of rail freight passing on the WCML during some part of its journey. The release of additional capacity on the southern section of the WCML would also cater for growth in the freight markets, particularly serving the distribution centres and intermodal terminals of central England. The proposed additional passenger services on the WCML make use of a proportion of the released capacity, so scope remains for additional freight paths to be added, according to market demands.

2.5.6. Further stopping pattern and journey time information for all these reconfigured WCML services can be found in the Train Service Assumptions annex to the Project Specification.

2.6. Fares

2.6.1. For modelling purposes, it has been assumed that standard rail fares would apply to HS2.

2.7. Forecast demand at HS2 stations

2.7.1. HS2 Ltd has used transport demand models to forecast the level of daily demand at each of the proposed HS2 stations.

2.7.2.

2.7.3. Table 2 shows the level of daily demand expected at Euston, which includes high speed, classic rail and underground services.

Table 2 – Forecast Total Daily Demand at Euston in the base (2008) and future (2043) model years

	2008 Base year	2043 reference year Do Minimum	2043 with HS2	Impact of HS2	Impact of HS2 (%)
All day: National Rail at Euston	57,000	116,00	147,000	32,000	27%
AM peak 3 hours using National Rail at Euston	24,000	38,000	46,000	9,000	24%
Expected to use LUL (AM peak 3 hrs)	15,000	23,000	29,000	6,000	24%

Source: HS2 Ltd 17 February 2011

2.7.4. A significant increase in passenger traffic is expected for both National Rail (including high speed services) and London Underground services due to HS2. The forecasts also highlight the increasingly important role the London Underground station at Euston would have in distributing traffic onto the London transport network, with around twice as many passengers expected in the morning peak compared to 2008. The level of daily passenger demand expected at the high speed terminal is around 86,000.

2.7.5. The expected changes in levels of passenger traffic at the key Birmingham stations are shown in **Table 3**.

Table 3 – Forecast Total Daily Demand at Birmingham Stations in 2043

	2043 reference year Do Minimum	2043 With HS2	Impact of HS2	Impact of HS2 (%)
Moor St	15,000	19,000	3,000	21%
New St	154,000	138,000	- 16,000	-11%
International (existing station)	25,000	15,000	- 11,000	-42%
HS2 Curzon St	[0]	27,000	27,000	[N/A]
HS2 Interchange	[0]	23,000	23,000	[N/A]
TOTAL	195,000	221,000	26,000	13%

Source: HS2 Ltd 17 February 2011

2.7.6. As with London Euston, the creation of HS2 is also expected to generate additional traffic for both classic and high speed rail services when considering all the Birmingham stations; however, within this New Street and International would have reduced traffic. In this case, intercity travellers would be attracted away from the central Birmingham stations to the proposed Birmingham Interchange station located near BIA.

2.7.7. **Table 4** and **Table 5** show the sources and increases in classic and high speed rail as modelled for 2043. A large proportion of additional rail traffic would be from newly generated trips. In relation to purely high speed rail traffic, 69% would be sourced from competing rail services, with the remaining due to generated trips (22%), car (5%) and air services (4%).

2.7.8. Around 39% of high speed daily demand to or from London is would be for London-West Midlands journeys, and around 47% is for London-North West journeys.

Table 4 – Increase & Source of Rail Trips due to HS2 in 2043

Daily Demand To/From London	Increase in Rail Pax (HS + Classic)	Source of Additional Rail Pax		
		Car	Air	Generation
Scotland	6,000	1%	58%	41%
North West	12,000	8%	14%	79%

West Midlands	12,000	23%	0%	77%
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Source: HS2 Ltd 17 February 2011

Table 5 – Forecast Total HS2 Daily Demand to/from London in 2043

Daily Demand	Total HSR	Source of HSR Demand			
		Rail	Road	Air	Generated
West Midlands	38,500 39%	26,000 67%	3,000 8%	0 0%	9,500 25%
North West	47,000 47%	35,000 75%	1,000 2%	2,000 4%	9,000 29%
Scotland	10,500 11%	5,000 50%	0 0%	3,000 30%	2,500 20%
Rest of Country	3,000 3%	3,000 100%	0 0%	0 0%	0 0%
Total	99,000	69,000 69%	4,000 4%	5,000 5%	21,000 22%

Source: HS2 Ltd – 17 February 2011

2.8. Direct employment

2.8.1. The construction and operation of the scheme would offer a number of direct employment opportunities. The operational employment opportunities relate to the running of stations, as well as staffing trains. There would also be a number of jobs at each of the depots. Construction employment includes stations, interchanges, track and infrastructure in general (see **Table 6**).

Table 6 – HS2 Preferred Scheme Construction and Operational Employment Estimates

Preferred scheme element	Permanent employment	Construction employment
London area (Euston and Old Oak Common)	350	2,800
Birmingham area (Curzon Street and interchange)	200	1,400
Along the line of route	N/A	4,000
Rolling stock depot (Washwood Heath) ⁴	300	400
Infrastructure maintenance depot (Calvert)	250	300
Train crew	400	N/A
Total	1,500	8,900

Source: HS2 Ltd – 19 January 2011

⁴ Analysis of existing development and employment activity at the proposed Washwood Heath site suggests that some jobs may be relocated or lost due to the development of the HS2 rolling stock depot. Based on analysis of the industrial sites that we consider are currently occupied and may require demolition, it is estimated that around 800 Full Time Equivalents (FTE) are employed in the affected area. We also estimate that only around 16% of the Heartlands Park area is currently occupied and so there is further potential for employment growth. Similar to the approach envisaged for managing similar impacts at Euston, HS2 Ltd would work closely with the Birmingham City Council with the intention of agreeing jointly an ambition for the Washwood Heath area. This would include engagement with local people, businesses and community representatives affected by the proposals.

3. Summary Findings

3.1. London Euston

Station catchment socio-economic baseline

- 3.1.1. The residents of the Euston catchment are generally of lower average age than London as a whole. A large proportion of these residents are economically inactive, partly reflecting the relatively large student population that resides there.
- 3.1.2. There are high levels of income deprivation in the Euston station catchment area, and travel to work data suggest that the majority of those who work near Euston station (94%) do not live in that area.
- 3.1.3. The area immediately around Euston station contains a mixture of office development, residential, hotel and retail land uses. There are also significant educational land uses to the south of the Euston Road at University College London, and the University College Hospital is adjacent to the university.
- 3.1.4. Euston has been designated as an 'opportunity area' within the London Plan and as such it is one of London's major strategic development priorities. Development here should provide an appropriate mix of uses, including a substantial amount of new housing (with an appropriate tenure and dwelling mix) but also employment and retail uses.
- 3.1.5. Based on existing planning permissions/applications, development pipeline and the local market, future additional floor space in the Euston area without HS2 could be in the region of 45,000 square metres of office space (accommodating approximately 3,200 jobs), 1,178 hotel beds (equivalent to 550 jobs), 5,000 square metres of educational space and 2,000 square metres of industrial space (equivalent to 50 jobs). There could also be 540 residential units, accommodating around 1,300 people.
- 3.1.6. There is considerable activity in the Euston/Kings Cross development market, and the majority of schemes are mixed use developments and seek to maximise the site's density.

Impacts of HS2

- 3.1.7. The redevelopment of Euston station for HS2 would include the demolition of some 190 dwellings at the Regent's Park Estate. Approximately 25 further dwellings and 20 commercial premises located in Euston, Melton, Cobourg and Drummond streets, would also require demolition. HS2 Ltd would be committed to working closely and at an early stage with the London Borough of Camden and the GLA and with community groups, residents' associations and affected residents generally to ensure that effective arrangements are in place to meet the housing needs of those affected by demolition of these dwellings, and to help to address wider impacts on the local community.
- 3.1.8. HS2 is likely to have a significant positive effect on the regeneration of the area in the immediate vicinity of Euston station, including rental/capital values in the areas surrounding the HS2 footprint. A development over the HS2 station has been assumed, including office, residential, retail and leisure accommodation.
- 3.1.9. It is not likely that HS2 would be a significant catalyst for development in the wider Euston area because the market would seek to maximise the density in this prime central London location in the normal course of development activity.
- 3.1.10. HS2 could increase net office development in the Euston catchment by 20,000 square metres, equivalent to approximately 1,400 jobs. Retail space could increase by 16,000 square metres broadly equivalent to 700 jobs. There could also be a net increase of 290 residential units as a result of HS2, providing space for around 700 people. There would also be a net loss of industrial floor space of 2,000 square metres or approximately 50

jobs. In total the net additional employment within the catchment area due to HS2 is likely to be in the region of 2,000 jobs.

- 3.1.11. Development around Euston station would not necessarily provide employment benefits to residents in the immediate area. Jobs around Euston are generally filled by people from throughout London's travel to work area.
- 3.1.12. Assuming that people commute to additional jobs in the area in the same patterns as for existing employment, then 120 jobs (6%) would be filled by residents from within the Euston station catchment.

3.2. Old Oak Common

Station catchment socio-economic baseline

- 3.2.1. The residents in the Old Oak Common catchment area have an age profile and economic activity rates that are broadly consistent with the London average. A significant proportion of residents in the area have no qualifications.
- 3.2.2. The areas around Old Oak Common are amongst the 20% most deprived areas in the country, particularly in relation to income and barriers to housing and services. Travel to work patterns show that currently, those working near the proposed HS2 station live within relatively close proximity.
- 3.2.3. The station site is located at the eastern edge of Park Royal, within the Park Royal Opportunity Area. Park Royal is the largest industrial location in London, employing around 40,000 people in over 2,000 companies. There is approximately 1.5 million square metres of industrial stock in Park Royal, a significant level for a Greater London location. Over the last 20 years there has been approximately 94,000 square metres of space completed at Park Royal.
- 3.2.4. Park Royal is generally occupied by small to medium sized businesses, although it is home to several major occupiers, the largest of which are in the food and drink sectors.
- 3.2.5. Without HS2, it is not anticipated that there would be a material change to the area. It is estimated that an additional 100,000 square metres of industrial space could be provided (equivalent to 2,800 jobs), reflecting the replacement of existing buildings that become obsolete with new, modern industrial units.

Impacts of HS2

- 3.2.6. The introduction of HS2 (and an interchange with Crossrail) is expected to be the catalyst for the comprehensive regeneration and development of the area north of the canal to provide employment, residential and retail space to replace industrial uses. Future floor space calculations of employment space assume that the existing light industrial floor space would be replaced by a new office/biomedical hub reflecting the aspirations of the local authority and other stakeholders.
- 3.2.7. It is estimated that, for the Old Oak Common catchment, HS2 could deliver 300,000 square metres of office space (equivalent to 21,300 jobs) as well as 30,000 square metres of retail space (equivalent to 1,300 jobs), 10,000 square metres of educational space (equivalent to 150 jobs) and 4,300 residential units to house in the region of 10,400 people. This would be at the expense of some 100,000 square metres of industrial land (equivalent to 2,800 jobs). The net impact could be around 20,000 additional jobs.
- 3.2.8. Employment opportunities in the area would increase in the finance, insurance or public sector industries and decline in the manufacturing or distribution sectors. It is likely that a significant proportion of new jobs attracted to the area would be filled by non-local residents due to skill mismatches.

- 3.2.9. To facilitate additional development at Old Oak Common, there would need to be improved access to the new Crossrail station and the local road network.
- 3.2.10. Comprehensive planning of the area would ensure appropriate physical and social infrastructure is in place to support both existing and new communities.

3.3. Birmingham Interchange

Station catchment socio-economic baseline

- 3.3.1. The residents in the Birmingham Interchange catchment area have an age profile and economic activity rates that are broadly consistent with the West Midlands average. Unemployment is low, and qualifications are consistent with the West Midlands average.
- 3.3.2. On the whole, the residents of this area are not considered to experience significant deprivation compared to other parts of the country; however, there is significant deprivation with respect to barriers to housing and services. Travel to work patterns suggest that a relatively large proportion of jobs are for residents in the same ward.
- 3.3.3. The site of this proposed station is located approximately 17km east of Birmingham city centre, and 5km north east of Solihull town centre. It is currently a relatively open area but is effectively surrounded by roads. It is situated within the Green Belt which has been strongly protected in recent years.
- 3.3.4. The existing stock in this location is office-led. There are few residential properties and industrial/warehousing is concentrated around the M6 corridor in lower cost areas of the Birmingham conurbation to the north. Retail floor space in this area is also sparse.
- 3.3.5. Most development potential is the office market. Permitted schemes have an estimated 230,000 square metres of expansion space (which would further deter the approval of new space in the Green Belt land). Given the current development market, it has been assumed that around 93,000 square metres of the permitted office space might be built out (equivalent to approximately 6,600 jobs). Development is also expected to include, 300 hotel beds (equivalent to 150 jobs) and 5,000 square metres of leisure space (equivalent to 50 jobs).

Impacts of HS2

- 3.3.6. The immediate station catchment area has a small local population that contribute a significant proportion of the employment at the NEC and airport. Therefore any additional development here is likely to impact on a far wider catchment area.
- 3.3.7. It has been assumed that within the NEC complex, already excluded from the Green Belt, there could be small parcels of development land released for new schemes.
- 3.3.8. It is estimated that HS2 could deliver an additional 47,000 square metres of office space (equivalent to 3,300 jobs), 600 hotel beds (equivalent to 300 jobs), 1,000 square metres of retail (equivalent to 50 jobs) and 10,000 square metres of leisure space (equivalent to 100 jobs). No residential units would be developed and 20 acres of open space would be lost. The net impact would be approximately 3,800 jobs.
- 3.3.9. Given the small local population in the catchment area, there is a risk that additional employment would not be locally sourced and may be provided from a wider area.
- 3.3.10. Further development around the Birmingham Interchange station that cannot be accommodated within the NEC footprint, would be constrained by the Green Belt.

3.4. Birmingham Curzon Street

Station catchment socio-economic baseline

- 3.4.1. Residents in the Birmingham Curzon Street catchment include a high proportion in the 16-34 age bracket, and a large proportion who are economically inactive. This partly reflects the large student population in the area. There is also a high proportion of social housing.
- 3.4.2. On the whole, the residents of this area are considered to experience significant deprivation compared to other parts of the country. There is significant deprivation with respect to barriers to health/disability, barriers to housing and services and the living environment. Travel to work patterns show that the majority of those working in the area are from the Birmingham and Solihull districts, with areas to the west of Birmingham less well represented.
- 3.4.3. The proposed site is currently predominantly vacant and/or underutilised land. Eastside is proposed as a key development zone by Birmingham City Council and there is an existing masterplan for future development of this area comprising predominantly office, leisure and education uses.
- 3.4.4. Much of the area is designated as a Conservation Area and there are a number of listed and locally listed buildings. There is currently a 6.3 ha site located at Montague Street occupied by two waste transfer depots. This site is designated within the Birmingham Unitary Development Plan (2005) for primarily residential development.
- 3.4.5. The area to the south of Eastside, in a segment bounded by the existing New Street and Moor Street railway lines, is characterised by 19th century workshops and warehouse complexes, alongside some 1960s units. The recently published Big City Plan, Birmingham's city centre masterplan, envisages this area forming creative business, entertainment and cultural development.
- 3.4.6. Future floor space (without HS2) is based on the assumption of limited development of the area south of the existing railway line, with the exception of known schemes with planning permission. An additional 195,000 square metres of office space is planned (equivalent to approximately 13,800 jobs), 1,000 hotel beds (equivalent to 500 jobs), 40,000 square metres of leisure space (equivalent to 500 jobs), 45,000 square metres of educational space and 25,000 square metres of retail space (equivalent to 1,100 jobs). There could be 3,000 residential units capable of housing 7,200 people. Some 35,000 square metres of industrial space would be lost (equivalent to 1,000 jobs).

Impacts of HS2

- 3.4.7. The proposed station concourse and route through Eastside, cuts through land proposed for permitted schemes. As a result of this, the City Council has commissioned a new masterplan to reconfigure proposals around HS2 and also to consider interim development in the period up to 2026 when the station would become operational. It is assumed that HS2 would act as a catalyst for redevelopment of the area around the new station.
- 3.4.8. It is estimated that HS2 could enable an additional 75,000 square metres of office space (equivalent to 5,300 jobs), 10,000 square metres of retail space (equivalent to 450 jobs), 400 hotel beds (equivalent to 200 jobs), 10,000 square metres of education space (equivalent to 150 jobs) and 10,000 square metres of leisure space (equivalent to 100 jobs). There would also be an additional 1,000 residential units with capacity for around 2,400 people.
- 3.4.9. This would be all at the expense of 55,000 square metres of industrial area which equates to 1,500 jobs. The net impact would therefore be in the order of 4,500 additional jobs. Assuming that people commute to additional jobs in the area in the same patterns as for

existing employment, then 180 jobs (4%) would be filled by residents from within the Birmingham Curzon Street station catchment.

- 3.4.10. This station would serve the majority of Birmingham's central employment area and so development in this location would have a more significant impact than at Euston.

3.5. Key stations on the WCML

Milton Keynes

- 3.5.1. Released capacity would be used to deliver 11 additional trains per hour during the peak between Milton Keynes Central and London Euston. This would provide a step change in the commuting service compared to the five trains per hour currently available.
- 3.5.2. Increasing the accessibility to London would support the town's growth plans by providing more capacity for commuting into central London.

Coventry

- 3.5.3. Releasing capacity would enable an increase in the frequency of Coventry to Birmingham trains during the peak hour from seven to nine.
- 3.5.4. Coventry already has a relatively high housing density so additional developments would likely need to be high density residential schemes. The increase in capacity would help support the city's growth plans.

Rugby

- 3.5.5. Released capacity would be used to increase the number of fast trains per hour to London during the peak hour from three to four, as well as increasing the number of trains into Birmingham during the peak hour from three to four. This increase in capacity would help to support the town's growth plans.
- 3.5.6. Rugby has fairly low housing densities, providing potential for residential development.

Northampton

- 3.5.7. With the capacity released by HS2, the number of trains to London in the peak hour would increase from three to four. To Birmingham International, there would still be two trains in the peak hour. However there would only be one train in the peak hour that serves Birmingham New Street, with a faster journey time and fewer stops.
- 3.5.8. A reduced service to New Street may not be attractive for housing growth, although two trains per hour to service Birmingham International would remain which may support the commercial developments in the vicinity of the NEC described above.

4. Socio-economic Baseline

4.1. The London & West Midlands regional economies

The London economy

Employment & Business

4.1.1. **Table 7** below shows the split of employees by job type at the NUTS3 level within Greater London. Banking, finance and insurance jobs in Inner London account for one quarter of total Greater London employment. Outer London (East and Northeast) has a high proportion of public sector employment (31%). In Outer London (West and Northwest) distribution, hotels and restaurants contribute most to employment (25%).

Table 7 – Employees by job type in Greater London

Category	Inner London East	Inner London West	Outer London East & Northeast	Outer London South	Outer London West and Northwest	Greater London
Agriculture & fishing	1,000	900	400	700	900	3,900
Energy & Water	3,500	3,800	1,100	*	1,400	10,200
Manufacturing	42,600	45,400	31,000	18,000	41,100	178,200
Construction	26,700	19,700	24,000	21,400	30,600	122,500
Distribution, hotels & restaurants	150,100	312,100	116,500	104,600	190,800	874,000
Transport & communications	65,400	72,900	33,700	23,300	112,200	307,400
Banking, Finance & Insurance etc.	366,300	686,600	89,500	126,400	179,300	1,448,100
Public administration, education & health	244,400	246,400	145,600	124,700	162,300	923,400
Other services	65,400	132,100	25,700	29,000	48,100	300,300
TOTAL	965,400	1,519,900	467,500	448,100	766,700	4,168,000

Source: Annual Business Inquiry, 2008; * denotes where values cannot be presented due to data confidentiality

4.1.2. **Table 8** shows the contribution to the economy in terms of Gross Value Added (GVA) per capita at the NUTS3 level within Greater London. This highlights the importance of the western part of Inner London, which includes the City of London and Westminster, to the London and UK economy. The eastern part of Inner London, which includes Docklands, is also ahead of the UK average.

Table 8 – GVA per capita for Greater London

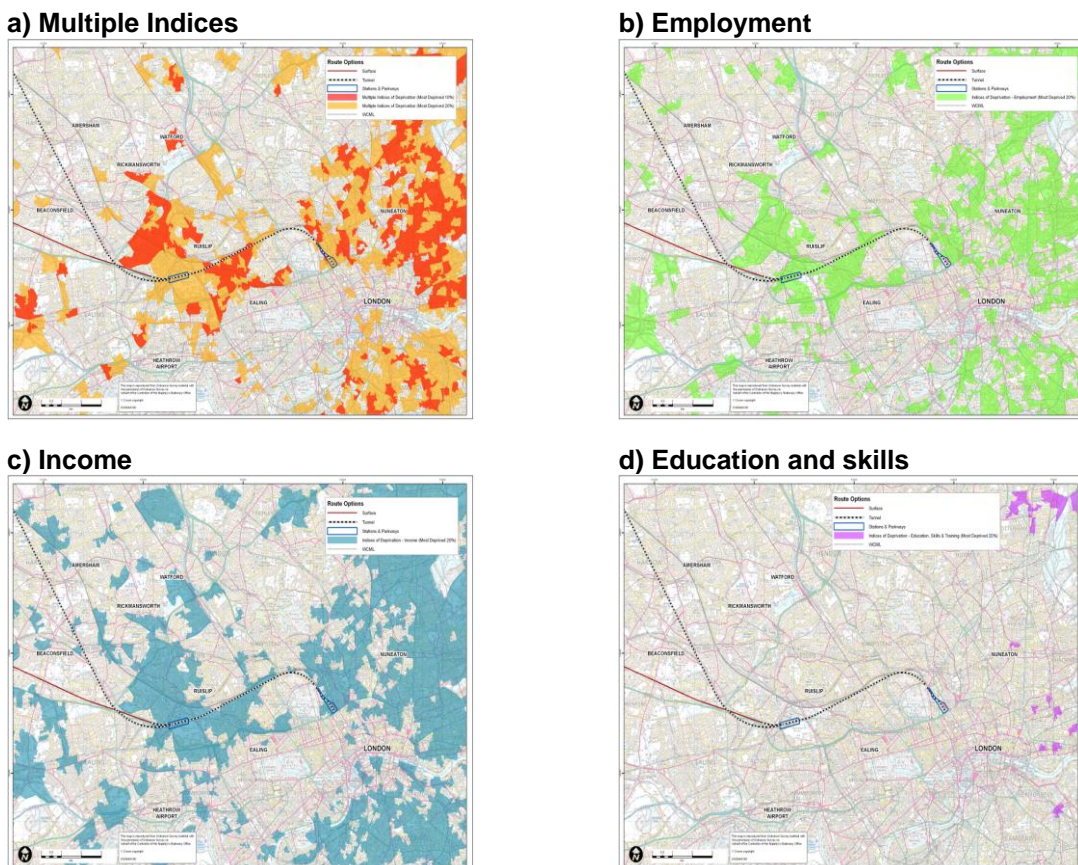
NUTS Level 3	GVA per head 2007	Difference to UK average
Inner London – West	£101,182	+395%
Inner London – East	£31,451	+54%
Outer London – East and North East	£13,841	-32%
Outer London – South	£18,143	-11%
Outer London – West and North West	£22,258	+9%
Greater London	£33,694	+65%
United Kingdom	£20,430	-

Source: ONS Regional GVA, December 2009

Deprivation⁵

4.1.3. **Figure 2** illustrates the differing results across deprivation indicators in the London area. Income deprivation (low levels of income) is a problem across the region, particularly to the north east of the city and in areas across the south. However, employment, education and skills are less prominent, with only small pockets to the north east and south east of London that fall within the 20% most deprived. The areas around Euston and Old Oak Common stations have some evidence of income deprivation, but are not found to be deprived in terms of education or employment. This suggests that the number and type of jobs available is widespread and appropriate for the workforce, however there is a significant proportion of jobs that pay low salaries.

Figure 2 – Greater London Deprivation according to Multiple Deprivation Indices, 2009



Key: Multiple Indices (top-left): dark orange = areas in the 10% most deprived, light orange = areas in the 20% most deprived; Other indices: shaded areas show the areas in the 20% most deprived for each index

Source: Department for Communities and Local Government data; Mapped by Temple Group

Description of Transport Network

4.1.4. There is an extensive public transport network in London that accounts for over 50% of trips to work⁶ throughout London. Public transport accounts for 90% of all people entering central London in the morning peak⁷ which underlines the importance of public transport to the capital's economy.

⁵ The English Indices of Deprivation 2007 are the Government's official measure of deprivation. They are applied to small areas known as Lower Super Output Areas (LSOAs), which typically contain between 1000 and 3000 people. The Indices of Multiple Deprivation (IMD) amalgamate 37 different indicators covering aspects of deprivation including income, employment, health and disability, education, skills and training, barriers to housing and services, living environment and crime. The IMD for each LSOA identifies its relative level of deprivation in comparison to all other LSOAs in England. The LSOAs falling in the lowest 20% for IMDs are used by this appraisal to identify the most deprived areas.

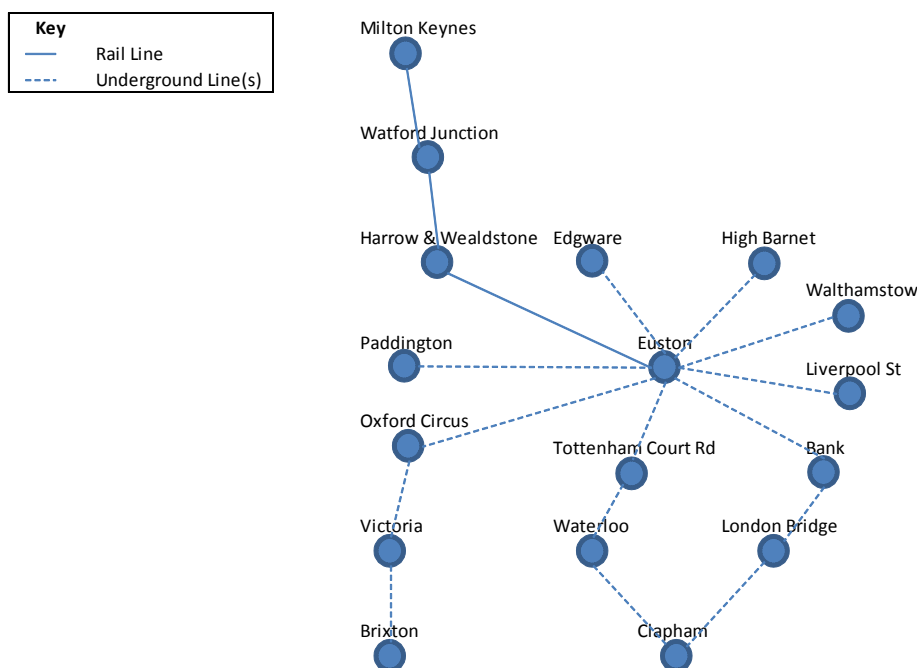
⁶ Travel in London Report 2 (TfL, 2010)

⁷ ibid

4.1.5. The highway network is characterised by the congestion charge zone in central London which, along with high parking costs, drives the high public transport mode share for travel to work in central London. The rail and underground links into central London are heavily congested during peak periods.

4.1.6. **Figure 3** shows the locations which are within approximately 30 minutes travel time from Euston station, and would therefore provide many of the commuters to any commercial development in the station’s catchment area.

Figure 3 – Key locations within 30 minutes of Euston



Source: CB analysis; National Rail Enquiries; TfL Journey Planner

4.1.7. Old Oak Common would be a new station on the Crossrail route, the details of which have not yet been confirmed. Assuming it takes five minutes to get to Paddington from Old Oak Common, then it can be assumed that Canary Wharf, Liverpool Street, Farringdon, Tottenham Court Road and Bond Street could also be reached within 30 minutes along with Ealing Broadway, Heathrow Airport, Slough and Reading to the west.

The West Midlands economy

Employment & Business

4.1.8. Annual Business Inquiry (ABI) employee data for 2008 has been analysed to show the split of employment by job type for districts in the West Midlands Metropolitan Area (WMMA), as shown in **Table 9**. A significant proportion of jobs in the WMMA (41%) are within the Birmingham district – more than Sandwell, Dudley, Walsall and Wolverhampton combined.

Table 9 – Employees by job type in the West Midlands Metropolitan Area

Category	Birmingham	Solihull	Coventry	Sandwell & Dudley	Walsall & Wolver'ton	Total WMMA
Agriculture & fishing	300	250	180	300	120	1,200
Energy & water	*	*	*	*	*	7,300
Manufacturing	48,600	9,100	18,200	44,900	32,900	153,800
Construction	16,700	7,700	4,100	17,000	9,600	55,100
Distribution, hotels &	105,000	21,600	31,100	58,800	48,000	264,600

Category	Birmingham	Solihull	Coventry	Sandwell & Dudley	Walsall & Wolver*ton	Total WMMA
restaurants						
Transport & communications	23,400	7,800	6,600	12,400	11,600	61,900
Banking, finance & insurance etc.	111,500	25,000	31,200	38,200	36,000	242,600
Public administration, education & health	156,000	19,000	42,100	61,500	55,100	333,700
Other services	20,600	4,000	5,500	9,700	9,600	49,400
TOTAL	484,400	95,700	141,600	244,700	203,200	1,169,600

Source: ABI, 2008; * denotes where values cannot be presented due to data confidentiality

4.1.9. **Table 9** illustrates the high dependency of this region's economy on the public sector which accounts for a third of a million jobs or 29% of total employment. The biggest sector contributions are:

- public administration, education and health – Birmingham (32%), Coventry (30%), Sandwell & Dudley (25%) and Walsall & Wolverhampton (27%); and
- banking, finance, insurance – Solihull (26%).

4.1.10. Analysis of GVA data shows that within the WMMA, Solihull provides the highest per capita contribution, and is the only area above the UK average, with the Black Country districts of Dudley & Sandwell and Walsall & Wolverhampton providing the lowest (**Table 10**).

Table 10 – GVA per capita for the West Midlands Metropolitan Area

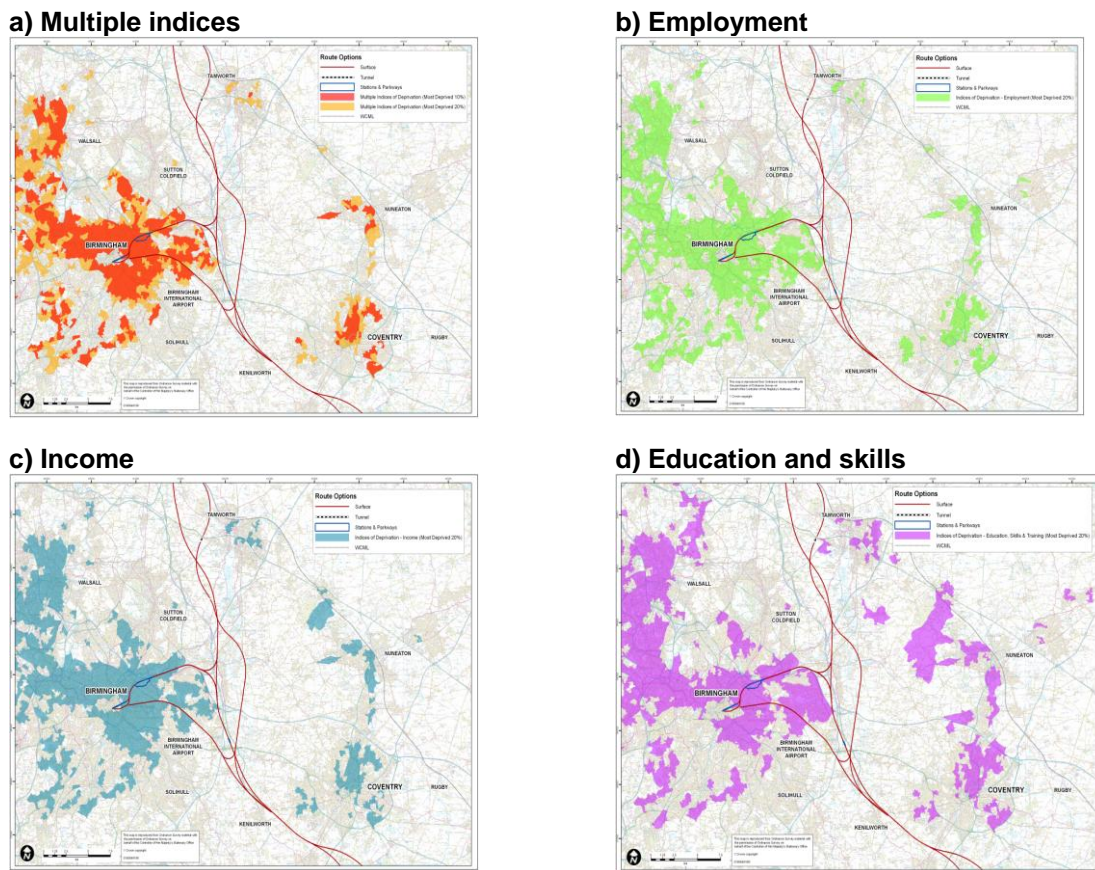
NUTS Level 3	GVA per head 2007	Difference to UK average
Birmingham	£19,358	-5.2%
Solihull	£22,581	+10.5%
Coventry	£18,848	-7.7%
Dudley & Sandwell	£15,117	-26.0%
Walsall & Wolverhampton	£16,053	-21.4%
West Midlands Metropolitan Area	£17,962	-12.1%
West Midlands Region	£17,044	-16.6%
United Kingdom	£20,430	-

Source: ONS Regional GVA, December 2009

Deprivation

4.1.11. The deprivation measurements indicate that the spread of deprivation is very consistent across the indicators, with the generally same area coverage resulting from the employment, income and education and skills indices. This is illustrated in **Figure 4** and suggests that a mix of job and skills creation would be important in tackling deprivation in the region.

Figure 4 – West Midlands Deprivation according to Multiple Deprivation Indices



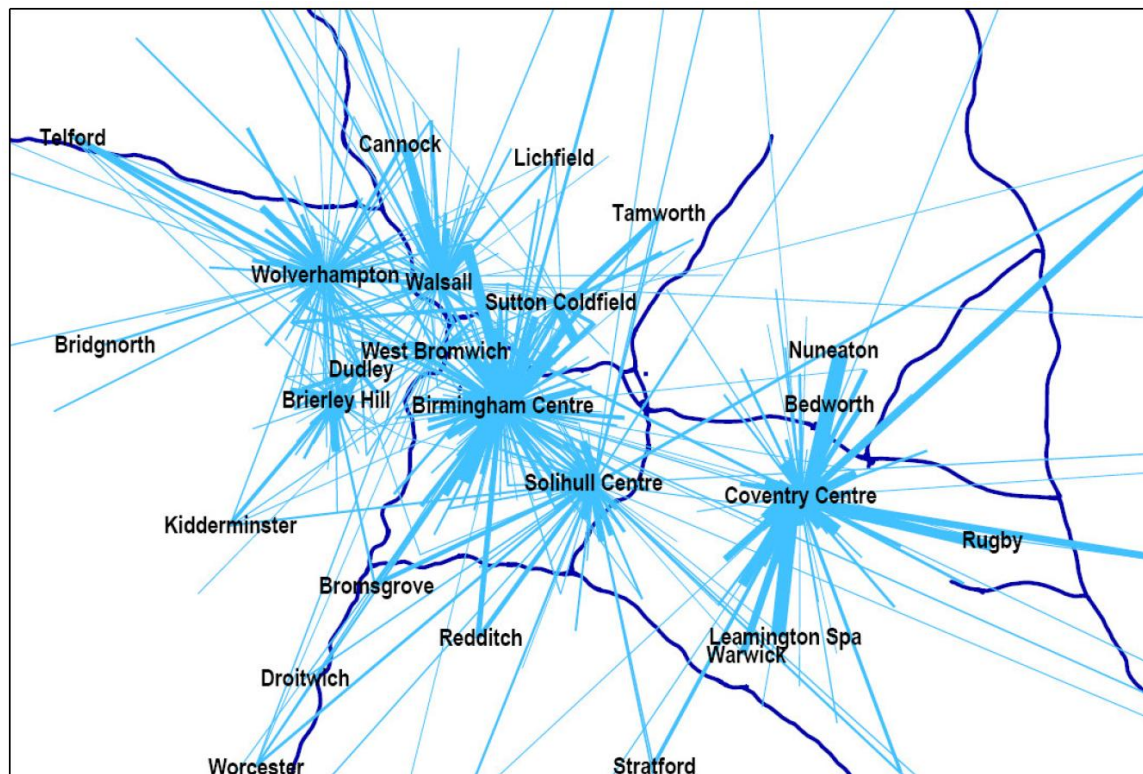
Key: Multiple Indices (top-left): dark orange = areas in the 10% most deprived, light orange = areas in the 20% most deprived; Other indices: shaded areas show the areas in the 20% most deprived for each index

Source: Department for Communities and Local Government data; Mapped by Temple Group

Description of Transport Network

- 4.1.12. Journeys in the WMMA are poly-centric in nature, with a number of economic centres as destinations, dominated by Birmingham city centre, Solihull and Coventry (see **Figure 5**).

Figure 5 – Travel Patterns for the Key West Midlands Activity Centres

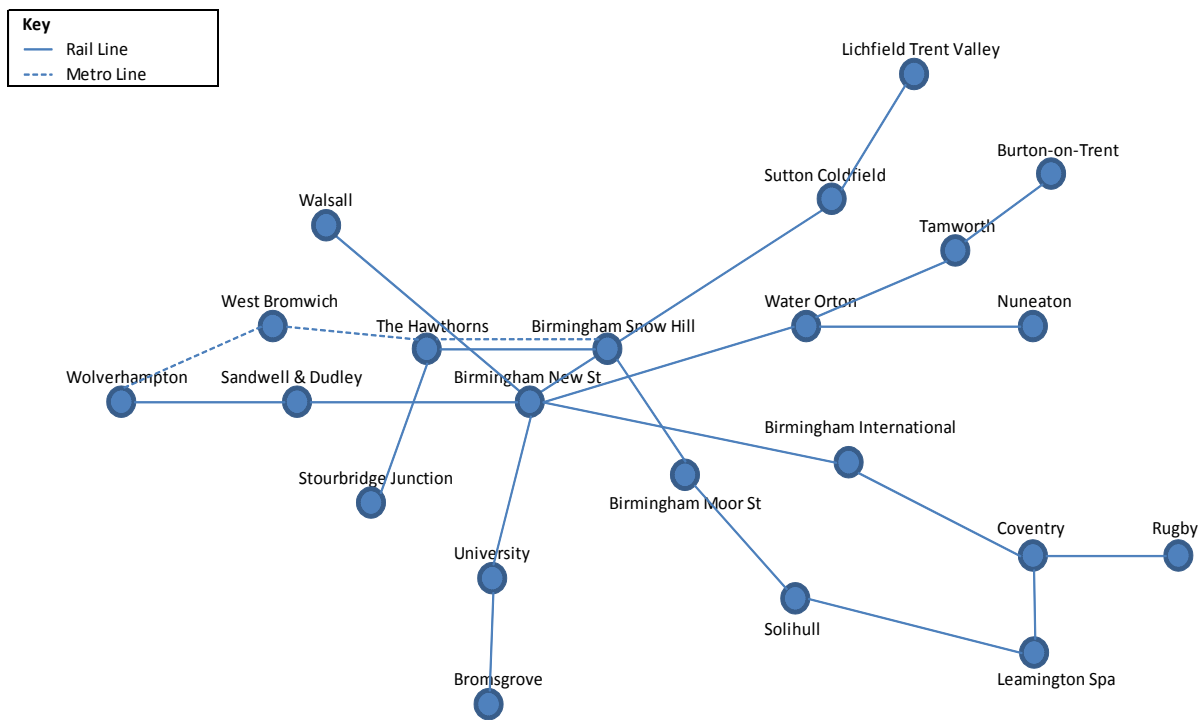


Source: WM TIF Choices and Challenges for the future 2006

- 4.1.13. The motorway network in the West Midlands is one of the most congested in the country, the 'box' around the conurbation defined by the M6, M5 and M42 caters for both local trips and long distance through-traffic.
- 4.1.14. **Figure 6** shows stations which lie within approximately 30 minutes of Birmingham's three city centre stations, either by rail or Metro. These locations and routes would be a key contributor to the labour market for commercial developments near to a high speed station at Curzon Street.
- 4.1.15. The West Midlands Route Utilisation Strategy (RUS) describes the current train loadings as 'several services are operating at or beyond seating capacity, and in some cases passenger loads exceed the nominal train capacity' where train capacity includes an allowance for standing⁸. Whilst services are busy, they are not crowded on the same level as those in other cities (notably London). Growth of 2.4% per annum is expected and there are a number of schemes to increase the capacity of services into Birmingham, including train and platform lengthening.

⁸ West Midlands and Chilterns Route Utilisation Strategy Document – draft for consultation (Network Rail, November 2010)

Figure 6 – Key locations within 30 minutes of Birmingham stations



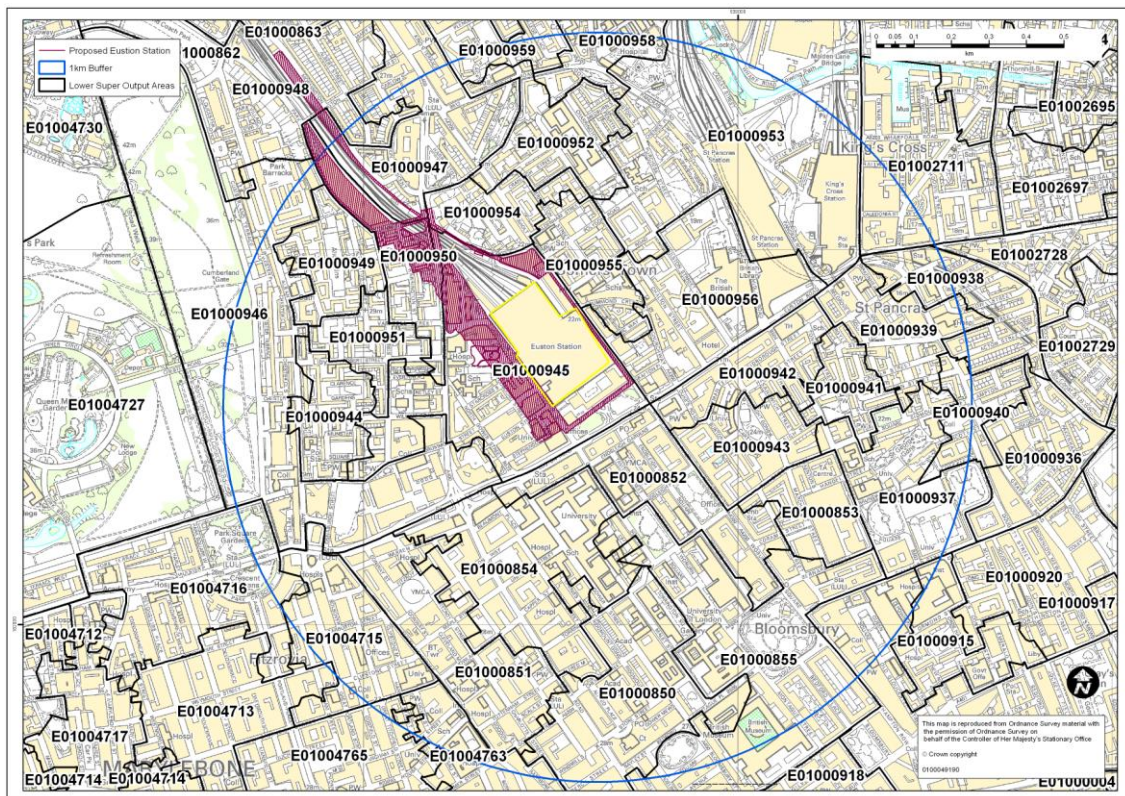
Source: CB analysis; National Rail Enquiries

4.2. The Local economies around HS2 Stations

London Euston

- 4.2.1. The proposed HS2 station at London Euston is located on, and around, the existing National Rail/London Underground site and has 24 Lower-level Super Output Areas (LSOAs) located within its 1km catchment (see **Figure 7**).

Figure 7 – Proposed HS2 Station at Euston with LSOA Boundaries



Source: HS2, mapping by Temple Group

Socio-demographic Characteristics

4.2.2. This section provides a description of the socio-demographic characteristics of the residents living within the 1km Euston station catchment.

Population Size & Age

4.2.3. The catchment area has a much larger proportion of population between 16 and 34 than the London average, who potentially would be in further education or employment.

Table 11 – Population Size & Age within 1km of London Euston: 2001 Census

Category	Euston Catchment	London
Aged 0 to 15 years	17%	20%
Aged 16 to 34 years	43%	31%
Aged 35 to 64 years	30%	36%
Aged 65 years & over	10%	12%
All people	36,134	7,172,091

Source: Office of National Statistics

Economic Activity Rates

4.2.4. Although the area has a greater number of people aged between 16 and 34 than the London average, it also has a higher proportion of economically inactive residents, with a relatively large population of students living in the area (44% of 'other' economically inactive residents are students).⁹

⁹ Office of National Statistics

Table 12 – Economic Activity Rates within 1km of London Euston: 2001 Census

Category	Euston Catchment	London
Economically Active - Employed or Self-employed	45%	60%
Economically Active – Unemployed	5%	4%
Economically Active - Full Time Student	5%	3%
Economically Inactive - Permanently Sick/Disabled	6%	5%
Economically Inactive - Retired/Other	39%	28%

Source: Office of National Statistics

Social Grade / Skills

4.2.5. Within the catchment area the proportion of people on state benefit or unemployed, is significantly higher than the London average, and there are fewer workers with higher skills.

Table 13 – Approximate Social Grades within 1km of London Euston: 2001 Census

Category	Euston Catchment	London
AB: Higher and intermediate managerial / administrative / professional	23%	26%
C1: Supervisory, clerical, junior managerial / administrative / professional	30%	33%
C2: Skilled manual workers	9%	11%
D: Semi-skilled and unskilled manual workers	15%	14%
E: On state benefit, unemployed, lowest grade workers	22%	15%

Source: Office of National Statistics

4.2.6. Considering qualifications in the catchment area, there are more people qualified with multiple A-Levels or degrees (or equivalent) than the London average.

Table 14 – Highest qualifications obtained¹⁰ within 1km of London Euston: 2001 Census

Category	Euston Catchment	London
No qualifications	22%	24%
1+ O-Levels/GCSE, NVQ Level 1, Foundation GNVQ	9%	13%
5+ O-Levels/GCSE (A*-C), School Certificate, 1+ A-Levels, NVQ Level 2, Intermediate GNVQ	12%	17%
2+ A-Levels, Higher School Certificate, NVQ Level 3, Advanced GNVQ	18%	10%
First degree, Higher degree, NVQ Levels 4-5, HND, HNC, Qualified Teacher/Doctor/Dentist/Nurse, Midwife, Health Visitor	36%	31%
Other / unknown	4%	5%

Source: Office of National Statistics

Household Tenure

4.2.7. There is a high level of social housing in the station catchment area, particularly to the north and west of Euston station. A low proportion of residents own the household in which they reside.

¹⁰ Residents aged 16 or over

Table 15 – Household Tenure within 1km of London Euston: 2001 Census

Category	Euston Catchment	London
Total Households	15,388	3,015,997
Owned	22%	57%
Social Rented	51%	26%
Private Rented	23%	15%
Living Rent Free	3%	2%

Source: Office of National Statistics

Ethnicity

4.2.8. The area has high levels of non-white ethnicity (in particular Asian or Asian British) compared to London as a whole, which is already much above the country average.

Table 16 – Ethnicity within 1km of London Euston: 2001 Census

Category	Euston Catchment	London
White	62%	71%
Mixed	3%	3%
Asian or Asian British	19%	12%
Black or Black British	9%	11%
Chinese or Other	6%	3%

Source: Office of National Statistics

Deprivation

4.2.9. **Table 17** provides a breakdown of the sources of deprivation (weighted by population) for the LSOAs within the Euston station catchment. Traditionally, areas in the top 10% or 20% are considered as being significantly deprived and therefore warrant targeted regeneration policies.

4.2.10. Based on this, on the whole, the residents of this area are not especially deprived compared to other parts of the country, with an overall deprivation ranking of 23.8%. However, sources of deprivation are significant with respect to barriers to housing and services and the living environment.

Table 17 – Population Weighted Deprivation within 1km of Euston Station

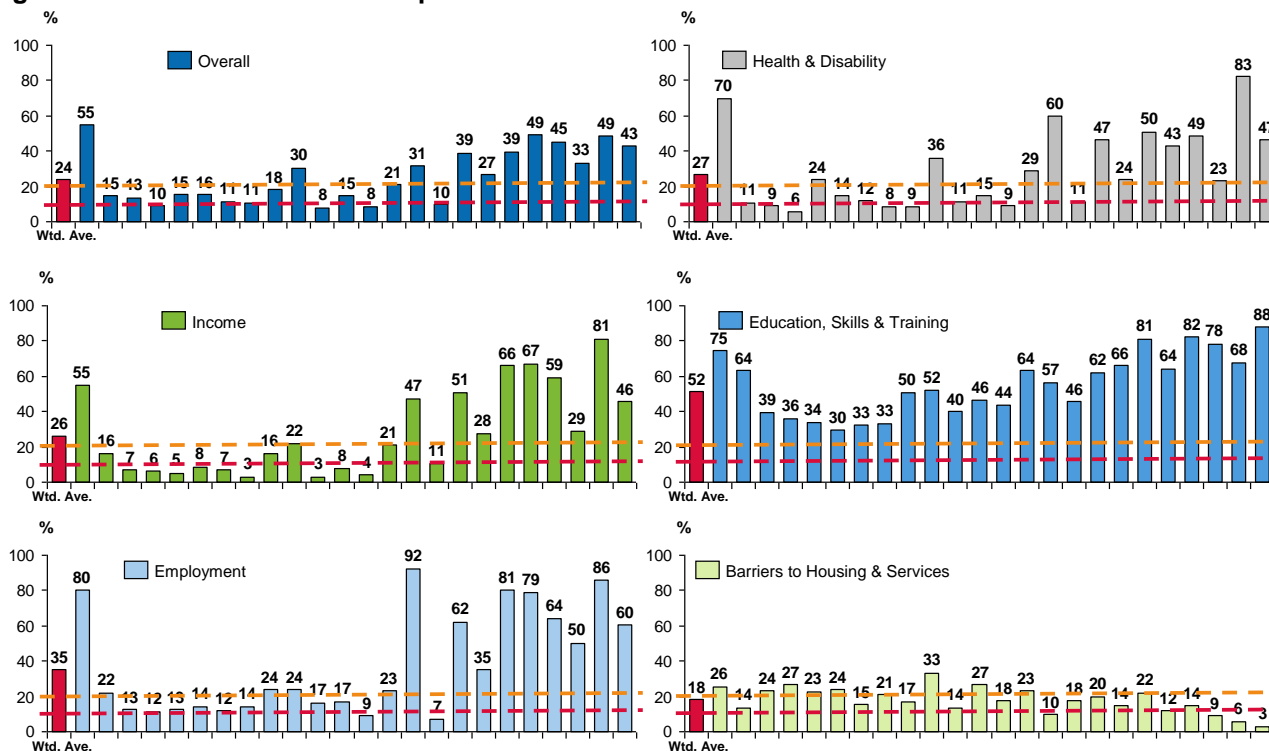
Category	Weighted Average Rank of Most Deprived LSOAs
Overall	23.8%
Income	25.9%
Employment	35.2%
Health & Disability	27.0%
Education, Skills & Training	51.7%
Barriers to Housing & Services	18.0%
Crime	39.8%
Living Environment	9.8%

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.2.11. Further insight can be gained by examining the LSOAs on an individual basis.

4.2.12. **Figure 8** shows selected sources of deprivation for each of the LSOAs within the Euston catchment, with each bar representing one LSOA.

Figure 8 – Selected Sources of Deprivation in LSOAs within 1km of Euston Station



Note: Charts indicate the percentage rank for each LSOA in the station catchment and the population weighted average (red bars). For example, a rank of 40% indicates that the LSOA is in the top 40% most deprived LSOAs in England.

LSOAs under the red dashed line are in the 10% most deprived LSOAs, and LSOAs under the orange dashed line are in the 20% most deprived.

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.2.13. The overall measure of deprivation (top-left) shows that 12 of the 24 LSOAs are in the 20% most deprived LSOAs, and that three LSOAs are in the 10% most deprived.

4.2.14. The remaining charts show that income, employment and health/disability are the main drivers of deprivation. In fact, nine of the LSOAs are in the top 10% with respect to income deprivation and 12 LSOAs are in the 20% most income deprived. Employment deprivation is significant (20%) for 12 LSOAs and health/disability deprivation is significant for 11.

4.2.15. Barriers to housing and services is also an issue (14 LSOAs face significant deprivation), possibly reflecting the high property prices in central London. This mostly affects the LSOAs that are not suffering from severe income and employment deprivation.

Employment & Business

4.2.16. The catchment area around Euston station includes a significant proportion of employees from the banking, finance & insurance sectors as well as public sector and transport & communications jobs. Over half (52%) of employees work in sectors with a high elasticity to productivity, that could benefit significantly from improved accessibility.

Table 18 – Employment within the catchment area of Euston station

Category	Employees	Percent
Agriculture & fishing	0	0%
Energy & water	0	0%
Manufacturing	2,600	3%
Construction	2,000	2%
Distribution, hotels & restaurants	14,900	15%
Transport & communications	17,500	17%
Banking, finance & insurance etc.	32,300	32%

Public administration, education & health	20,400	20%
Other services	10,200	10%
TOTAL	100,000	100%

Source: ABI, 2008; * denotes where values cannot be presented due to data confidentiality

Land Use Characteristics

- 4.2.17. The area immediately around Euston station contains a mixture of office development (particularly at Melton Street and Eversholt Street), residential, hotel and retail land uses. There are also significant educational land uses to the south of the Euston Road at University College London, and the University College Hospital is adjacent to the university.
- 4.2.18. Euston has been designated as an ‘opportunity area’ within the London Plan and as such it is one of London’s major strategic development priorities. Also, the London Borough of Camden’s Core Strategy, a planning framework in place for the regeneration and redevelopment of the area, identified potential for 70,000 square metres of office floor space, 1,500 new homes and retail development.
- 4.2.19. The London Plan and Camden’s Core Strategy refer to the Euston area as a whole, i.e. not just the HS2 site but the environs around Euston. In contrast, the socio-economic appraisal has only analysed the impact on the HS2 footprint. Development here should provide an appropriate mix of uses, including a substantial amount of new housing (with an appropriate tenure and dwelling mix) but also employment and retail uses. Even without HS2, redevelopment is envisaged as Network Rail have identified the site as requiring development to accommodate increasing passengers in the future.
- 4.2.20. Based on existing planning permissions/applications, development pipeline and the local market, future additional floor space in the Euston station footprint without HS2 could be in the region of 45,000 square metres of office space (accommodating approximately 3,200 jobs), 1,178 hotel beds (equivalent to 550 jobs), 5,000 square metres of educational space and 2,000 square metres of industrial space (equivalent to 50 jobs). There could also be 540 residential units, accommodating around 1,300 people.
- 4.2.21. There is considerable activity in the Euston/Kings Cross development market, and the majority of schemes are mixed use developments and seek to maximise the site’s density. These schemes include Kings Cross Central, Regent’s Place and 132-142 Hampstead Road.

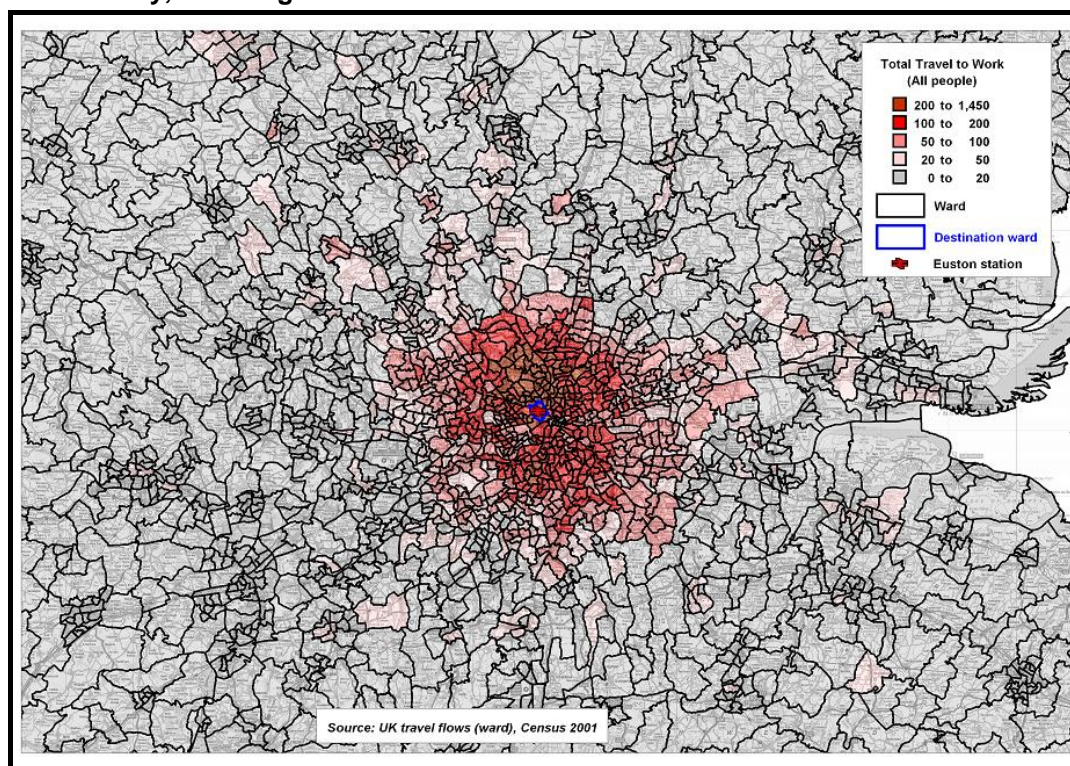
Description of the Transport Network

- 4.2.22. Euston High Speed station would be integrated with the existing station which is the terminus for existing WCML services to intercity destinations such as Birmingham, Manchester, Liverpool and Glasgow. It is also the terminus for services to Crewe and Northampton, as well as to commuter stations such as Milton Keynes, Berkhamsted, Hemel Hempstead and Watford junction. London Overground services also operate from Euston to Watford junction. Euston has a London Underground station served by the Northern and Victoria lines, and Euston Square, a 10 minute walk away, is served by the Circle, Metropolitan and Hammersmith & City Lines.
- 4.2.23. Euston has a bus station and operates a number of bus services across London. Highway access to Euston is restricted by the congestion zone to the south combined with significant congestion during peak periods.

Travel to Work Patterns

- 4.2.24. London Euston station is close to four electoral wards – Regents Park, St Pancras and Somers Town, Bloomsbury, and Kings Cross – analysis of commuting trips to these four wards is shown in **Figure 9** below.

Figure 9 – Travel to work patterns for Regents Park, St Pancras and Somers Town, Bloomsbury, and Kings Cross wards



Source: Census 2001

4.2.25. Trips to the Euston station area originate from a wide range of locations, reflecting the capital's public transport network. The four wards of Regents Park, St Pancras and Somers Town, Bloomsbury, and Kings Cross account for just 6% of trips, the next highest contributing ward is Kentish Town with 0.5%. Journeys to work for the Euston area are much longer than to the other High Speed station locations with trips from across London and the Home Counties, in particular Harrow, St Albans, Hemel Hempstead, Orpington and Twickenham.

4.3. Summary

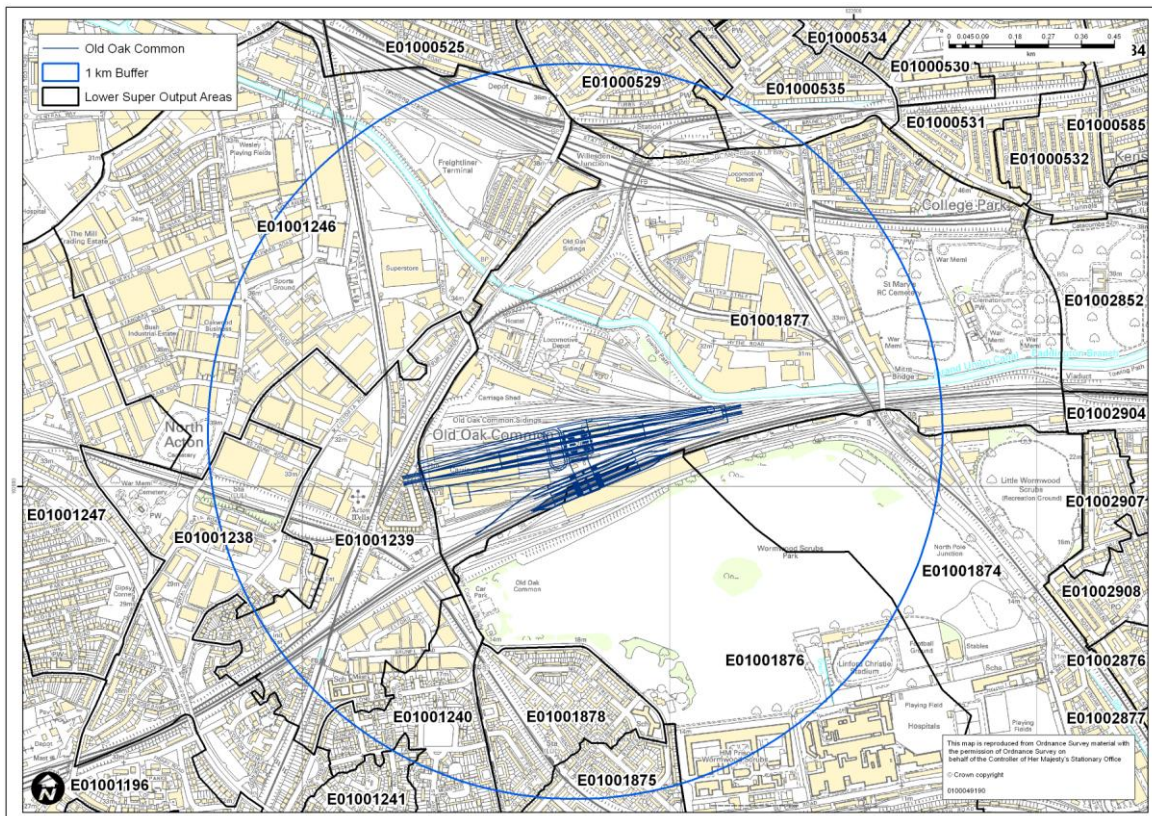
4.3.1. The residents in the Euston catchment are generally of lower average age than London as a whole. A large proportion of these residents are economically inactive (45%), reflecting the relatively large student population that resides there. More residents hold higher levels of education than the London average (possibly reflecting the student population), although this is not reflected in the social grade of resident workers. A low proportion of residents live in owner-occupied households (22%) and a large proportion in social rented housing (51%). There is also high levels of non-white ethnicity in the area (38%).

4.3.2. There are high levels of income deprivation in the Euston station catchment area, although the travel to work pattern suggests that the majority of those who work near Euston station (94%) do not live in that area. Employment in the catchment area is dominated by banking, finance & insurance (30%) and public administration, education & health (20%).

4.4. The Local Economy around Old Oak Common

4.4.1. The proposed HS2 station at Old Oak Common is located to the west of London near Willesden (**Figure 10**). This station would provide an interchange with Crossrail (enabling connections to Heathrow in the west and to the city and Canary Wharf in the East) and the Great Western Main Line.

Figure 10 – Proposed HS2 Station at Old Oak Common with LSOA Boundaries



Source: HS2, mapping by Temple Group

Socio-demographic Characteristics

Population Size & Age

4.4.2. The Old Oak Common station area is fairly representative of London with a slightly higher proportion of people aged 16 to 34.

Table 19 – Population Size & Age within 1km of Old Oak Common: 2001 Census

Category	Old Oak Common Catchment	London
Aged 0 to 15 years	21%	20%
Aged 16 to 34 years	35%	31%
Aged 35 to 64 years	34%	36%
Aged 65 years & over	10%	12%
All people	10,325	7,172,091

Source: Office of National Statistics

Economic Activity Rates

4.4.3. There are slightly higher proportion of economically inactive (retired/other) people than the London average.

Table 20 – Economic Activity Rates within 1km of Old Oak Common: 2001 Census

Category	Old Oak Common Catchment	London
Economically Active - Employed or Self-employed	54%	60%
Economically Active – Unemployed	5%	4%
Economically Active - Full Time Student	3%	3%
Economically Inactive - Permanently Sick/Disabled	6%	5%
Economically Inactive - Retired/Other	32%	28%

Source: Office of National Statistics

Social Grade / Skills

4.4.4. The catchment area has more semi-skilled and unskilled workers than the London average, and slightly more on benefit/unemployed.

Table 21 – Approximate Social Grades within 1km of Old Oak Common: 2001 Census

Category	Old Oak Common Catchment	London
AB: Higher and intermediate managerial / administrative / professional	20%	26%
C1: Supervisory, clerical, junior managerial / administrative / professional	33%	33%
C2: Skilled manual workers	12%	11%
D: Semi-skilled and unskilled manual workers	18%	14%
E: On state benefit, unemployed, lowest grade workers	17%	15%

Source: Office of National Statistics

4.4.5. There are significantly more people with no qualifications than the London average, with one in three adults (over the age of 16) having no qualifications at all.

Table 22 – Highest qualifications obtained within 1km of Old Oak Common: 2001 Census

Category	Old Oak Common Catchment	London
No qualifications	33%	24%
1+ O-Levels/GCSE, NVQ Level 1, Foundation GNVQ	12%	13%
5+ O-Levels/GCSE (A*-C), School Certificate, 1+ A-Levels, NVQ Level 2, Intermediate GNVQ	14%	17%
2+ A-Levels, Higher School Certificate, NVQ Level 3, Advanced GNVQ	9%	10%
First degree, Higher degree, NVQ Levels 4-5, HND, HNC, Qualified Teacher/Doctor/Dentist/Nurse, Midwife, Health Visitor	26%	31%
Other / unknown	6%	5%

Source: Office of National Statistics

Household Tenure

4.4.6. The area has a higher proportion of social housing than the London average, and home ownership is relatively low.

Table 23 – Household Tenure within 1km of Old Oak Common: 2001 Census

Category	Old Oak Common Catchment	London
Total Households	4,021	3,015,997
Owned	44%	57%
Social Rented	39%	26%

Private Rented	15%	15%
Living Rent Free	2%	2%

Source: Office of National Statistics

Ethnicity

4.4.7. Like Euston, the area has a higher proportion of non-white people with Black or Black British origin accounting for a significant proportion.

Table 24 – Ethnicity within 1km of Old Oak Common: 2001 Census

Category	Old Oak Common Catchment	London
White	61%	71%
Mixed	5%	3%
Asian or Asian British	10%	12%
Black or Black British	19%	11%
Chinese or Other	5%	3%

Source: Office of National Statistics

Deprivation

4.4.8. **Table 25** provides a breakdown of the sources of deprivation (weighted by population) for the LSOAs within the Old Oak Common station catchment. On the whole, the residents of this area can be considered to experience significant deprivation compared to other parts of the country, with an overall deprivation ranking of 18.6%. This largely relates to income deprivation and issues regarding barriers to housing and services.

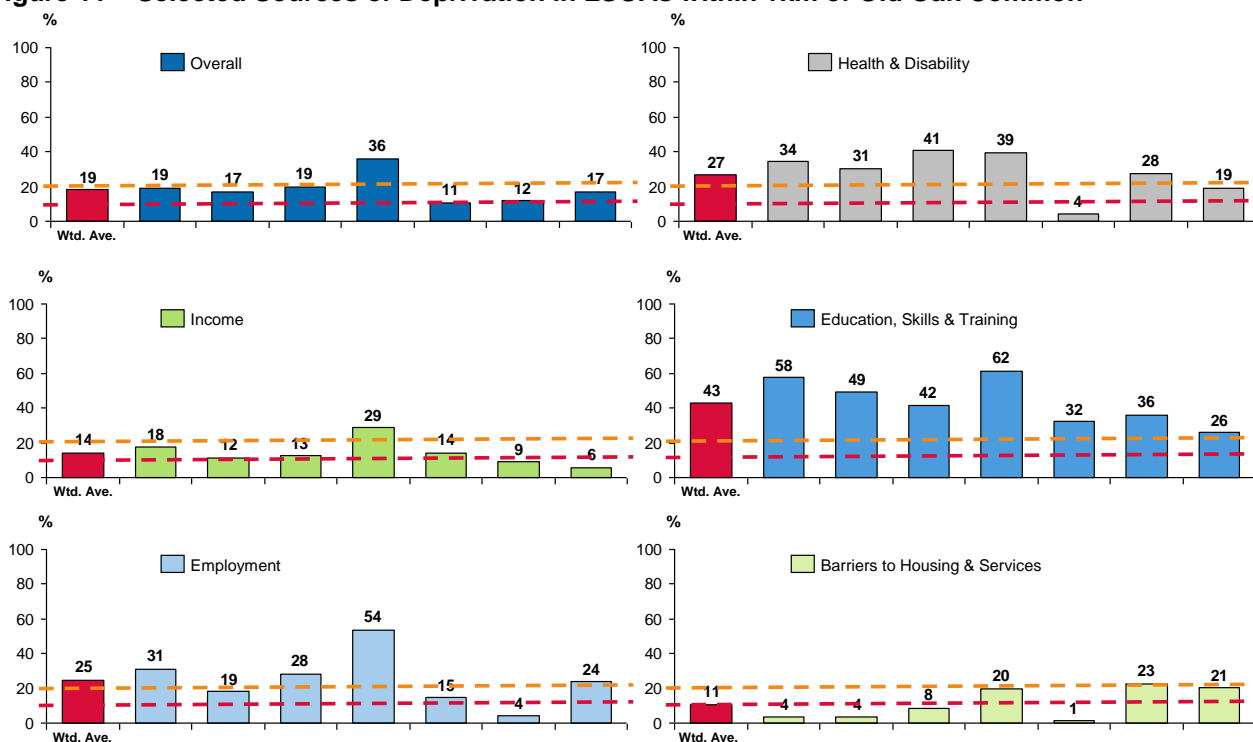
Table 25 – Population Weighted Deprivation within 1km of Old Oak Common

Category	Weighted Average Rank of Most Deprived LSOAs
Overall	18.6%
Income	14.4%
Employment	24.9%
Health & Disability	26.9%
Education, Skills & Training	43.2%
Barriers to Housing & Services	10.8%
Crime	32.6%
Living Environment	21.6%

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.4.9. **Figure 11** shows selected sources of deprivation for each of the LSOAs within the Old Oak Common catchment, with each bar representing one LSOA.

Figure 11 – Selected Sources of Deprivation in LSOAs within 1km of Old Oak Common



Note: Charts indicate the percentage rank for each LSOA in the station catchment and the population weighted average (red bars). For example, a rank of 40% indicates that the LSOA is in the top 40% most deprived LSOAs in England. LSOAs under the red dashed line are in the 10% most deprived LSOAs, and LSOAs under the orange dashed line are in the 20% most deprived.

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.4.10. The pattern of deprivation on an individual LSOA basis is generally consistent with the overall picture, although some LSOAs are showing significant deprivation in relation to employment and health/disability.

Employment & Business

4.4.11. The catchment area around Old Oak Common station is dominated by public sector employment (over 30% of jobs), driven by Wormwood Scrubs prison and Hammersmith Hospital. **Table 26** also shows that there is a large share of employment in the distribution, hotels and restaurants, and the banking, finance and insurance sectors.

Table 26 – Employment within the catchment area of Old Oak Common station

Category	Employees	Percent
Agriculture & Fishing	*	*
Energy & Water	*	*
Manufacturing	1,700	12%
Construction	500	4%
Distribution, hotels & restaurants	3,500	24%
Transport & communications	700	5%
Banking, Finance & Insurance etc.	2,800	20%
Public Administration, Education & Health	*	*
Other Services	*	*
TOTAL	14,500	100%

Source: ABI, 2008; * denotes where values cannot be presented due to data confidentiality

Land Use Characteristics

4.4.12. The land is bound by Willesden Junction station to the north, Kensal Green cemetery to the east, Wormwood Scrubs Park, Nature Reserve and the Great Western Main Line

(GWML) to the south and the London Overground line to Richmond to the west. The site is located at the eastern edge of Park Royal, within the Park Royal Opportunity Area. Park Royal is the largest and most important industrial location in London, employing around 40,000 people in over 2,000 companies across a site area spanning approximately 750 hectares. The predominant use in the area is industrial with a relatively low proportion of office and healthcare use.

- 4.4.13. According to research conducted by Park Royal Partnership (PRP), land use within Park Royal is split between storage and distribution (c.38%), industrial use (c.14%), business use (c.5%) and motor trades (c.8%). The remainder of land usage is made up of recycling of waste and scrap, leisure, pockets of residential and medical usage. The stock is generally of poor quality and there is relatively little demand for large office units, as offices tend to be ancillary to the main storage, distribution and industrial uses. The current and predominant land use at the site can be categorised as railway uses, bus depot, waste processing facility, metals recycling site, general industrial and distribution, car retail and vacant industrial units.
- 4.4.14. There is approximately 1.5 million square metres of industrial stock in Park Royal, a significant level for a Greater London location. Over the last 20 years there has been approximately 94,000 square metres of space completed at Park Royal. However, the trend has seen far fewer completions since 2001, reflecting the fewer large scale development opportunities in the area due to the piecemeal nature of land ownership. This has been exacerbated by the downturn in the economy from 2007 onwards. In the last five years approximately half of the completed stock has been developed on a speculative basis, with the remainder developed either on a pre-let basis or purpose built for owner occupiers.
- 4.4.15. Park Royal is generally occupied by a large number of small to medium sized businesses serving the London markets rather than being dominated by large businesses; however, it is home to several major occupiers, the largest of which are in the food and drink sectors. In general, manufacturing occupation in the area has seen a steady decline over the past few years and this has accelerated throughout the recession. Other occupiers include distribution & logistics, The Central Middlesex hospital, pharmaceutical companies, the film and TV sector, creative industries, storage operators, motor repair and the auto retail trade.
- 4.4.16. Without HS2, it is not anticipated that there would be a material change to the area. It is estimated that an additional 100,000 square metres of industrial space could be provided (equivalent to approximately 2,800 jobs), reflecting the replacement of existing buildings that become obsolete with new, modern industrial units.

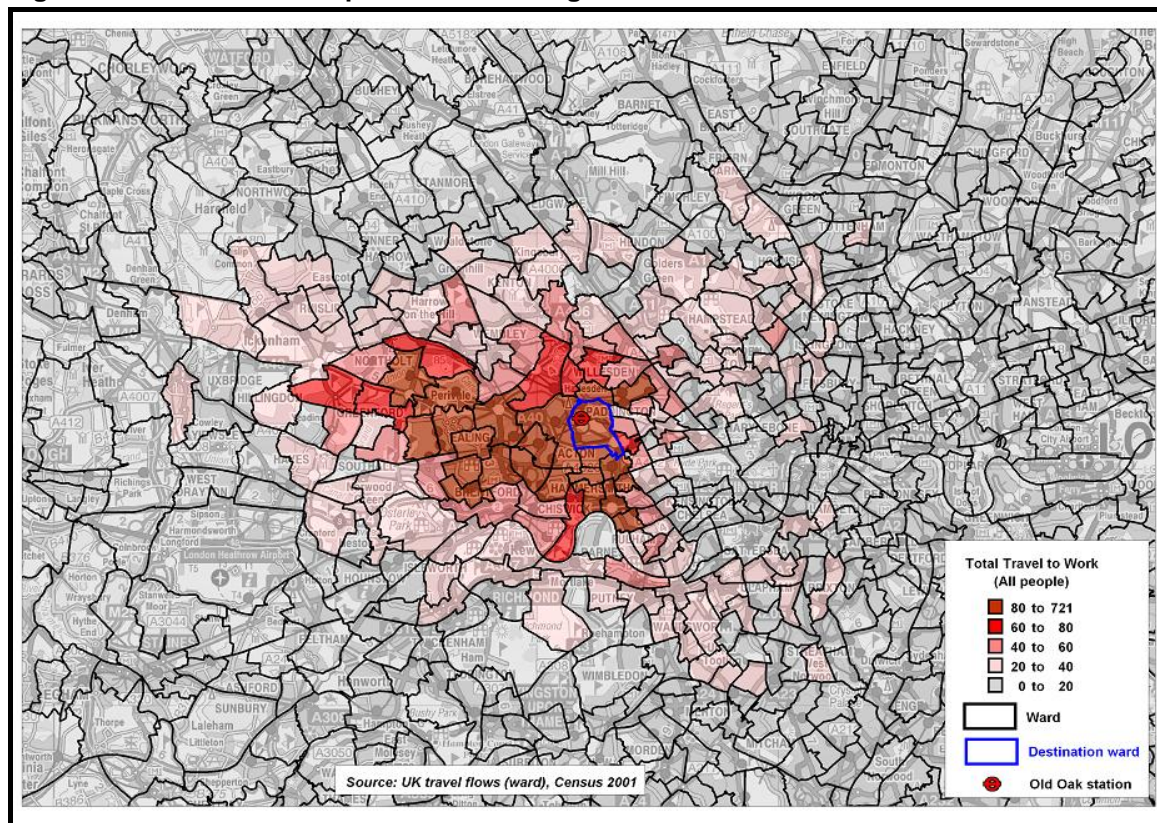
Description of the Transport Network

- 4.4.17. The site of the Old Oak Common high speed station is currently used for railway sidings on the Great Western Main Line (GWML). A Crossrail station would be built across the GWML at Old Oak Common to enable passengers to interchange from the high speed network onto Crossrail services to destinations including Heathrow Airport, Bond Street, Liverpool Street and Canary Wharf.
- 4.4.18. Access to the highway network would be provided at the new high speed station. The A40 is close by providing access to London's Strategic Road Network, although new access roads would be required. New bus services would also be needed to serve the new station.

Travel to Work Patterns

- 4.4.19. 'College Park and Old Oak' ward contains the site for the new Crossrail station, as well as the prison and hospital, and has been used as the destination for commuting trips to analyse the travel to work patterns (**Figure 12**).

Figure 12 – Travel to work patterns for College Park and Old Oak ward



Source: Census 2001

4.4.20. The travel to work area for College Park and Old Oak ward is much more localised than for Euston. Around 6% of workers are resident in the same ward, other important wards for originating trips are East Acton, Wormholt and White City, and Fulham Reach which are all close by. Currently few people travel from outside north west London to work in this location.

Summary

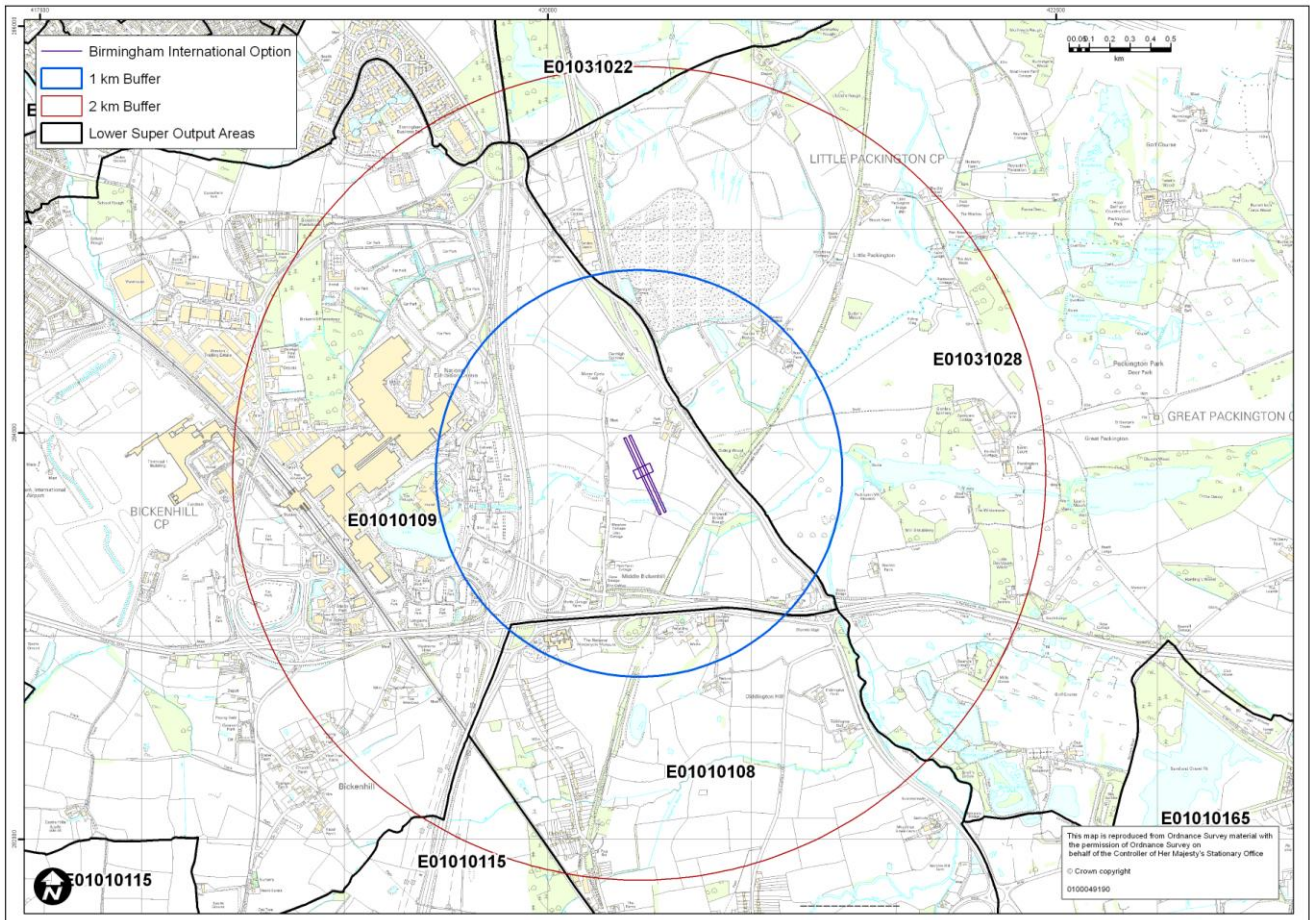
4.4.21. The residents in the Old Oak Common catchment have an age profile and economic activity rates that are broadly consistent with the London average. More residents have no qualifications compared to the London average (33%), which is partially reflected in the employment grade of resident workers. A low proportion of residents live in owner-occupied households (44%) and a large proportion in social rented housing (39%). There are also high levels of non-white ethnicity in the area (39%).

4.4.22. The areas around Old Oak Common are in the 20% most deprived in the country, particularly for income and barriers to housing and services, which is reflected in the travel to work patterns. Those working near the proposed HS2 station live within relatively close proximity. The key sector contributing to local employment is the public sector with over 30% of jobs, whilst 24% of jobs are in the distribution, hotels and restaurants industry classification, and 20% are in banking, finance & insurance.

4.5. The Local Economy around Birmingham Interchange

4.5.1. The proposed HS2 interchange station for Birmingham would be located in a relatively open area to the east of BIA and NEC (**Figure 13**), but effectively surrounded by existing roads.

Figure 13 – Proposed HS2 Station at the Birmingham Interchange with LSOA Boundaries



Source: HS2, mapping by Temple Group

Socio-demographic Characteristics

Population Size & Age

4.5.2. The station catchment area includes a small population which has a higher proportion of people aged 35 to 64 than average for the West Midlands, as shown in **Table 27**.

Table 27 – Population Size & Age within 2km of the Birmingham Interchange: 2001 Census

Category	B'ham Interchange Catchment	West Midlands
Aged 0 to 15 years	19%	21%
Aged 16 to 34 years	20%	25%
Aged 35 to 64 years	45%	39%
Aged 65 years & over	16%	16%
All people	6,625	5,267,308

Source: Office of National Statistics

Economic Activity Rates

4.5.3. There are more employed or self-employed people living within the catchment area than the West Midlands average, and unemployment is low.

Table 28 – Economic Activity Rates within 2km of the Birmingham Interchange: 2001 Census

Category	B'ham Interchange Catchment	West Midlands
Economically Active - Employed or Self-employed	66%	60%
Economically Active - Unemployed	2%	4%

Category	B'ham Interchange Catchment	West Midlands
Economically Active - Full Time Student	2%	2%
Economically Inactive - Permanently Sick/Disabled	6%	6%
Economically Inactive - Retired/Other	25%	28%

Source: Office of National Statistics

Social Grade / Skills

4.5.4. There are more workers in the catchment area with the highest social grade than the average for the region.

Table 29 – Approximate Social Grades within 2km of the Birmingham Interchange: 2001 Census

Category	B'ham Interchange Catchment	West Midlands
AB: Higher and intermediate managerial / administrative / professional	32%	20%
C1: Supervisory, clerical, junior managerial / administrative / professional	32%	27%
C2: Skilled manual workers	13%	17%
D: Semi-skilled and unskilled manual workers	11%	19%
E: On state benefit, unemployed, lowest grade workers	11%	17%

Source: Office of National Statistics

4.5.5. Considering the qualifications of the residents within the catchment area, there are fewer people with no qualifications than the West Midlands average, with more people at Intermediate GNVQ level or degree level (or equivalents).

Table 30 – Highest qualifications obtained within 2km of Birmingham Interchange: 2001 Census

Category	B'ham Interchange Catchment	West Midlands
No qualifications	30%	34%
1+ O-Levels/GCSE, NVQ Level 1, Foundation GNVQ	17%	17%
5+ O-Levels/GCSE (A*-C), School Certificate, 1+ A-Levels, NVQ Level 2, Intermediate GNVQ	21%	19%
2+ A-Levels, Higher School Certificate, NVQ Level 3, Advanced GNVQ	7%	7%
First degree, Higher degree, NVQ Levels 4-5, HND, HNC, Qualified Teacher/Doctor/Dentist/Nurse, Midwife, Health Visitor	18%	16%
Other / unknown	7%	7%

Source: Office of National Statistics

Household Tenure

4.5.6. The area has a very high proportion of owned property and very little social housing.

Table 31 – Household Tenure within 2km of the Birmingham Interchange: 2001 Census

Category	B'ham Interchange Catchment	West Midlands
Total Households	2,595	2,153,672
Owned	81%	70%
Social Rented	9%	21%
Private Rented	8%	7%
Living Rent Free	2%	3%

Source: Office of National Statistics

Ethnicity

4.5.7. The station catchment area is almost exclusively white and has very little other ethnicity.

Table 32 – Ethnicity within 2km of the Birmingham Interchange: 2001 Census

Category	B'ham Interchange Catchment	West Midlands
White	97%	89%
Mixed	1%	1%
Asian or Asian British	1%	7%
Black or Black British	1%	2%
Chinese or Other	0%	1%

Source: Office of National Statistics

Deprivation

4.5.8. **Table 33** provides a breakdown of the sources of deprivation (weighted by population) for the LSOAs within the Birmingham Interchange station catchment. On the whole, the residents of this area are not considered to experience significant deprivation compared to other parts of the country, with an overall deprivation ranking of 56.6%. However, there is significant deprivation with respect to barriers to housing and services (12.5%).

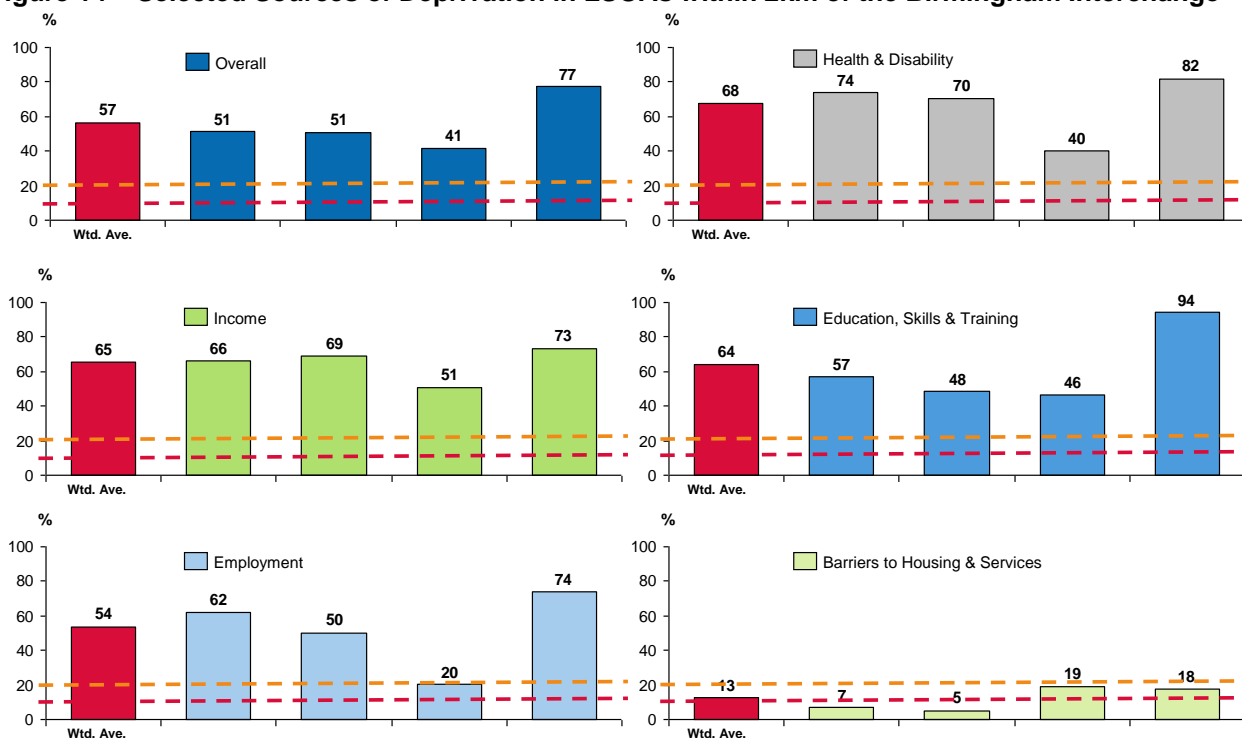
Table 33 – Population Weighted Deprivation within 2km of the Birmingham Interchange

Category	Weighted Average Rank of Most Deprived LSOAs
Overall	56.6%
Income	65.3%
Employment	53.7%
Health & Disability	67.8%
Education, Skills & Training	63.8%
Barriers to Housing & Services	12.5%
Crime	60.6%
Living Environment	67.7%

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.5.9. **Figure 14** shows selected sources of deprivation for each of the LSOAs within the Birmingham Interchange catchment, with each bar representing one LSOA.

Figure 14 – Selected Sources of Deprivation in LSOAs within 2km of the Birmingham Interchange



Note: Charts indicate the percentage rank for each LSOA in the station catchment and the population weighted average (red bars). For example, a rank of 40% indicates that the LSOA is in the top 40% most deprived LSOAs in England.

LSOAs under the red dashed line are in the 10% most deprived LSOAs, and LSOAs under the orange dashed line are in the 20% most deprived.

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.5.10. The pattern of deprivation on an individual LSOA basis is generally consistent with the overall picture, although one LSOA is showing significant deprivation in relation to employment.

Employment & Business

4.5.11. The transport and communications sector is more significant within the catchment area of Birmingham Interchange, reflecting the presence of the airport. Banking, finance and insurance is still the dominant sector, accounting for 36% of employment. Some 64% of employees work in sectors with a high elasticity of productivity.

Table 34 – Employment within the catchment area of Birmingham Interchange station

Category	Employees	Percent
Agriculture & fishing	0	0%
Energy & Water	*	*
Manufacturing	*	*
Construction	1,500	9%
Distribution, hotels & restaurants	2,400	14%
Transport & communications	4,800	28%
Banking, Finance & Insurance etc.	6,300	36%
Public Administration, Education & Health	*	*
Other Services	*	*
TOTAL	17,500	100%

Source: ABI, 2008; * denotes where values cannot be presented due to data confidentiality

Land Use Characteristics

4.5.12. The proposed station is located approximately 17 km east of Birmingham city centre, and 5 km north east of Solihull town centre. It is currently occupied by open fields and is

situated in the Green Belt on land under the jurisdiction of Solihull Metropolitan Borough Council (SMBC). The M42 passes roughly north-south direction just west of the site which also accesses BIA, 0.5 miles to the west, via junction 6. The NEC venue is also located off this junction. A new light rail type people mover would link the new Interchange station with both the International station and the airport.

- 4.5.13. The Green Belt has been strongly protected in recent years through planning policy, and recent applications for development within it have been refused even where they would comprise proposed extensions to established existing Business Parks.
- 4.5.14. The potential zone of influence of this station has been extended out to the existing M42 corridor, which predominantly runs south east from junction 6 round to junction 4, and where a number of large existing Business Parks have been developed with future space for expansion. These include Birmingham Business Park, Blythe Valley Business Park and Solihull Business Park, and schemes such as Eagle Court, Trinity Park, The Green, and Fore.
- 4.5.15. The existing stock in this location is office-led and there are few residential properties. Industrial/ warehousing development is concentrated around the M6 corridor to the north of the Birmingham conurbation, in lower cost locations. Retail is also sparse along this corridor and would remain so because of its out-of-town location. Current retail planning policy is to locate retail development in town and city centre locations.
- 4.5.16. Permitted schemes have an estimated 230,000m² expansion space but the market has slowed considerably and it is estimated that future floor space in the Birmingham International area without HS2 would be less than that with permission, at 93,000 square metres of office space (equivalent to approximately 6,600 jobs), 300 hotel beds (equivalent to 150 jobs) and 5,000 square metres of leisure space (equivalent to 50 jobs).

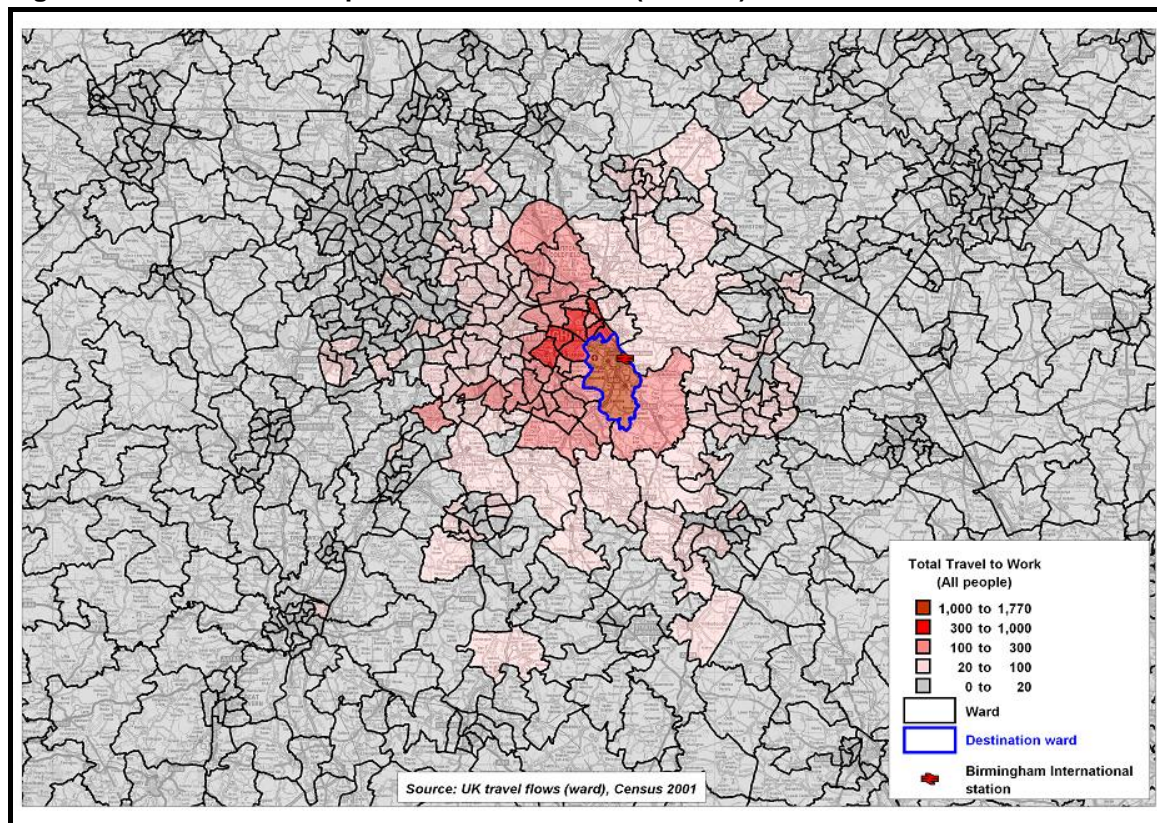
Description of the Transport Network

- 4.5.17. The Birmingham Interchange station location has excellent access to the highway network, being adjacent to Junction 6 of the M42, the A45 and the A452. National Express coaches connect the airport to a number of major cities as well as other airports such as Heathrow, Gatwick, Stansted, Luton and Manchester. Local buses provide connections with the city centre and surrounding districts.
- 4.5.18. The high speed station would be connected to Birmingham International train station which has the AirRail Link 'people mover' to transfer passengers to Birmingham Airport. The existing Birmingham International rail station also provides links to destinations such as Birmingham New Street, Coventry, Leamington Spa, Oxford and London.

Travel to Work Patterns

- 4.5.19. Bickenhill ward includes the NEC and BIA and has been used as the destination for commuting trips to investigate where such trips originate from.

Figure 15 – Travel to work patterns for Bickenhill (Solihull) ward



Source: Census 2001

4.5.20. The travel to work area for the Birmingham Interchange station area is extremely localised with almost 10% of workers resident in the same ward (Bickenhill). Other key origins are Chelmsley Wood and Sheldon, which are close by. Workers also come from the Solihull and Sutton Coldfield areas, although very few from the Black Country or Coventry.

Summary

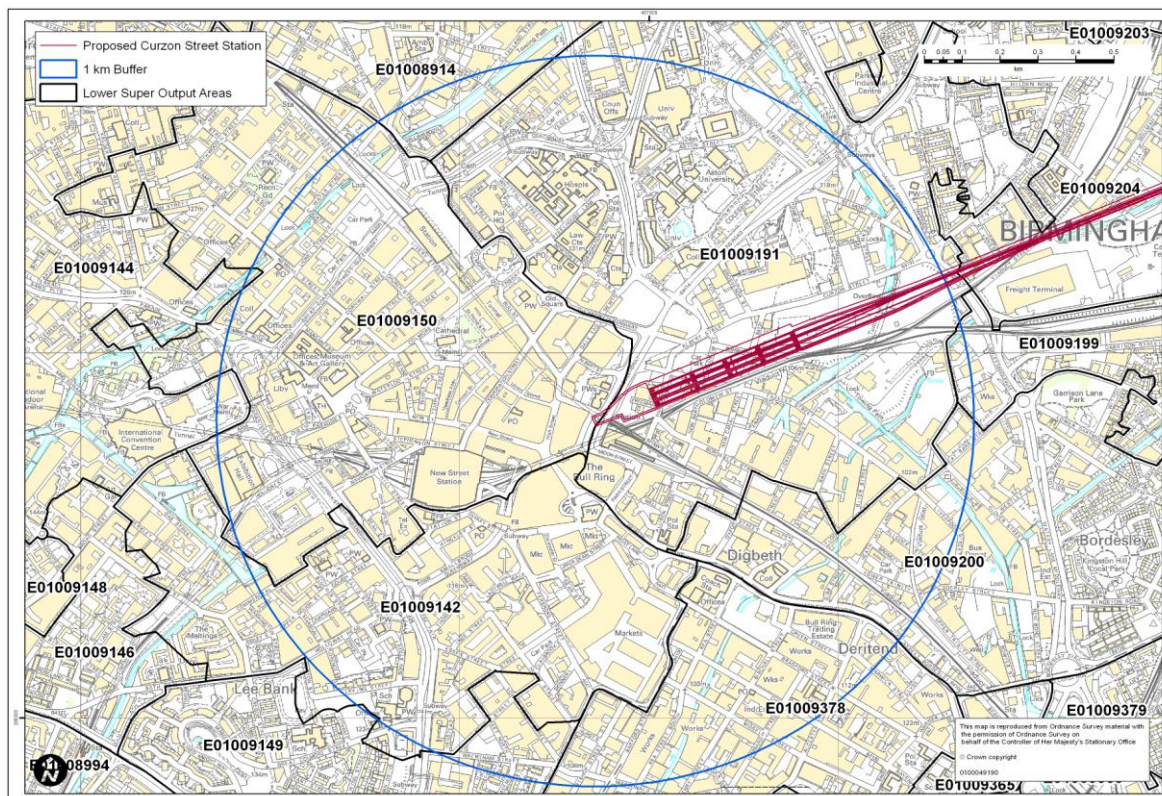
4.5.21. The residents in the Birmingham Interchange catchment have an age profile and economic activity rates that are broadly consistent with the West Midlands average, with slightly more people in the 35-64 age bracket (45%), and people who are economically active and employed (66%). Unemployment is low (2%). Qualifications are consistent with the West Midlands average, although there is a higher proportion of residents that have 'higher and intermediate managerial/administrative/professional' and 'supervisory, clerical, junior managerial /administrative/professional' jobs (32% for both grades). A high proportion of households are owner-occupied (81%) and a low proportion of households live in rented social housing (9%). There are also high levels of white ethnicity in the area (97%).

4.5.22. On the whole, the residents of this area are not considered to experience significant deprivation compared to other parts of the country, with an overall deprivation ranking of 56.6%. However, there is significant deprivation with respect to barriers to housing and services (12.5%). Some 36% of local employment is in banking, finance and insurance, and 28% in transport and communications. Travel to work patterns suggest that a relatively large proportion of jobs are taken up by residents in the same ward.

4.6. The Local Economy around Birmingham Curzon Street

4.6.1. The central Birmingham terminal station would be located near Curzon Street adjacent to Moor Street station, in the Eastside area of the city (**Figure 16**).

Figure 16 – Proposed HS2 Station at Birmingham Curzon St with LSOA Boundaries



Source: HS2, mapping by Temple Group

Socio-demographic Characteristics

Population Size & Age

4.6.2. The catchment area around the proposed Curzon Street station has a fairly small population that includes a very high proportion of people aged 16 to 34, as shown in **Table 35**.

Table 35 – Population Size and Age within 1km of Birmingham Curzon St: 2001 Census

Category	Curzon St Catchment	West Midlands
Aged 0 to 15 years	11%	21%
Aged 16 to 34 years	60%	25%
Aged 35 to 64 years	22%	39%
Aged 65 years & over	7%	16%
All people	8,908	5,267,308

Source: Office of National Statistics

Economic Activity Rates

4.6.3. The reason for the high proportion of young adults in the area is shown below with a significant full time student population. There is also a significant proportion of other economically inactive residents.

Table 36 – Economic Activity Rates within 1km of Birmingham Curzon St: 2001 Census

Category	Curzon St Catchment	West Midlands
Economically Active - Employed or Self-employed	27%	60%
Economically Active - Unemployed	8%	4%
Economically Active - Full Time Student	12%	2%
Economically Inactive - Permanently Sick/Disabled	6%	6%
Economically Inactive - Retired/Other	47%	28%

Source: Office of National Statistics

Social Grade / Skills

4.6.4. The area has a higher proportion of people on state benefit, unemployed or lowest grade workers than the regional average.

Table 37 – Approximate Social Grades within 1km of Birmingham Curzon St: 2001 Census

Category	Curzon St Catchment	West Midlands
AB: Higher and intermediate managerial / administrative / professional	18%	20%
C1: Supervisory, clerical, junior managerial / administrative / professional	24%	27%
C2: Skilled manual workers	12%	17%
D: Semi-skilled and unskilled manual workers	21%	19%
E: On state benefit, unemployed, lowest grade workers	25%	17%

Source: Office of National Statistics

4.6.5. In terms of qualifications, the catchment area does have a significantly higher proportion of people who are qualified to degree level (or equivalent).

Table 38 – Highest qualifications obtained within 1km of Birmingham Curzon St: 2001 Census

Category	Curzon St Catchment	West Midlands
No qualifications	34%	34%
1+ O-Levels/GCSE, NVQ Level 1, Foundation GNVQ	12%	17%
5+ O-Levels/GCSE (A*-C), School Certificate, 1+ A-Levels, NVQ Level 2, Intermediate GNVQ	15%	19%
2+ A-Levels, Higher School Certificate, NVQ Level 3, Advanced GNVQ	12%	7%
First degree, Higher degree, NVQ Levels 4-5, HND, HNC, Qualified Teacher/Doctor/Dentist/Nurse, Midwife, Health Visitor	21%	16%
Other / unknown	5%	7%

Source: Office of National Statistics

Household Tenure

4.6.6. The area has a high proportion of social housing and a slightly higher proportion of private rented accommodation than the regional average.

Table 39 – Household Tenure within 1km of Birmingham Curzon St: 2001 Census

Category	Curzon St Catchment	West Midlands
Total Households	3,283	2,153,672
Owned	23%	70%
Social Rented	59%	21%
Private Rented	12%	7%
Living Rent Free	5%	3%

Source: Office of National Statistics

Ethnicity

4.6.7. The area is more cosmopolitan than the region as a whole with higher proportions of all non-white ethnicity groups. In particular there is a significant Asian or Asian British population.

Table 40 – Ethnicity within 1km of Birmingham Curzon St: 2001 Census

Category	Curzon St Catchment	West Midlands
White	62%	89%
Mixed	5%	1%
Asian or Asian British	17%	7%
Black or Black British	11%	2%
Chinese or Other	5%	1%

Source: Office of National Statistics

Deprivation

4.6.8. **Table 41** provides a breakdown of the sources of deprivation (weighted by population) for the LSOAs within the Birmingham Curzon Street station catchment. On the whole, the residents of this area are considered to experience significant deprivation compared to other parts of the country, with an overall deprivation ranking of 14.9%. In terms of its sources, there is significant deprivation with respect to barriers to health/disability (7.9%), barriers to housing and services (8.6%) and the living environment (10.4%).

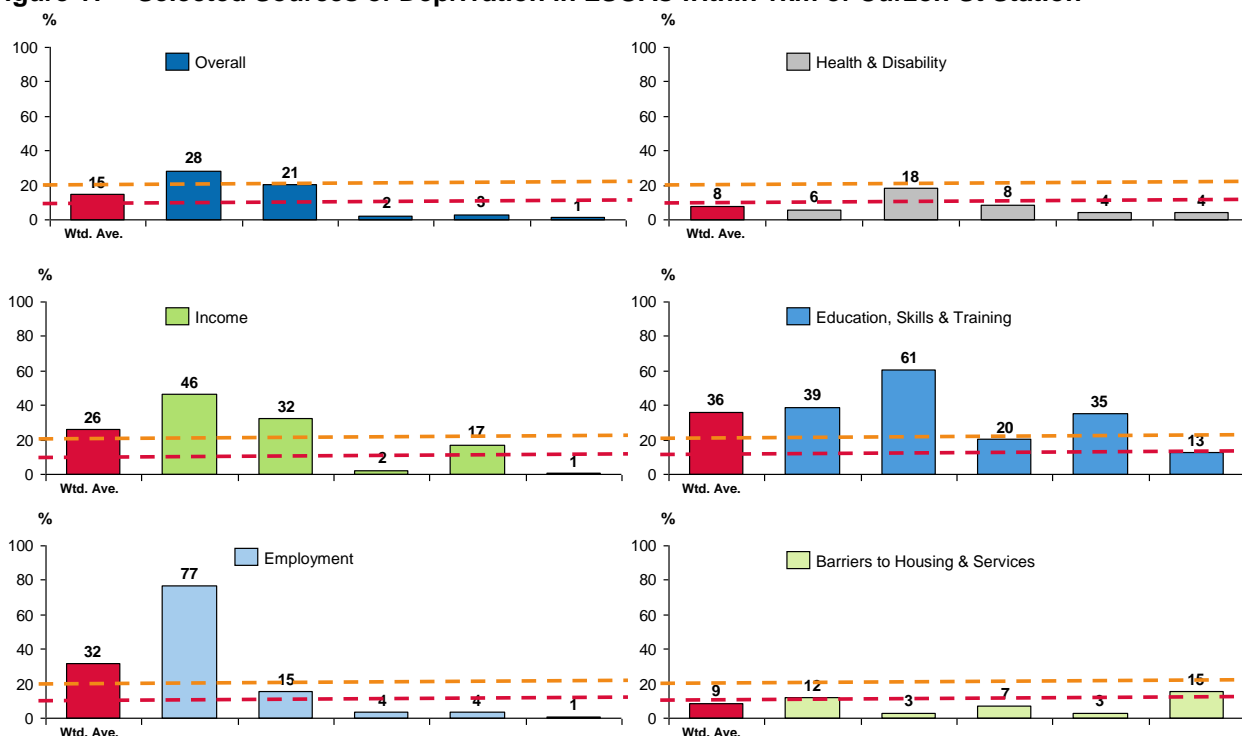
Table 41 – Population Weighted Deprivation within 1km of Curzon St Station

Category	Weighted Average Rank of Most Deprived LSOAs
Overall	14.9%
Income	25.7%
Employment	31.9%
Health & Disability	7.9%
Education, Skills & Training	35.6%
Barriers to Housing & Services	8.6%
Crime	20.5%
Living Environment	10.4%

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.6.9. **Figure 17** shows selected sources of deprivation for each of the LSOAs within the Birmingham Curzon Street catchment, with each bar representing one LSOA.

Figure 17 – Selected Sources of Deprivation in LSOAs within 1km of Curzon St Station



Note: Charts indicate the percentage rank for each LSOA in the station catchment and the population weighted average (red bars). For example, a rank of 40% indicates that the LSOA is in the top 40% most deprived LSOAs in England. LSOAs under the red dashed line are in the 10% most deprived LSOAs, and LSOAs under the orange dashed line are in the 20% most deprived.

Source: Booz & Company Analysis of CLG Indices of Multiple Deprivation

4.6.10. The pattern of deprivation on an individual LSOA basis is generally consistent with the overall picture, with individual LSOAs showing severe deprivation.

Employment & Business

4.6.11. Levels of employment within the station’s catchment area are shown in the table below, dominated by the banking, finance and insurance sector. Half of all employees (49%) work in sectors that have a high elasticity of productivity suggesting that there would be significant benefits resulting from improved accessibility.

Table 42 – Employment within the catchment area of Curzon Street station

Category	Employees	Percent
Agriculture & fishing	0	0%
Energy & Water	*	*
Manufacturing	4,600	4%
Construction	1,200	1%
Distribution, hotels & restaurants	21,300	18%
Transport & communications	6,400	5%
Banking, Finance & Insurance etc.	52,400	44%
Public administration, education & health	27,500	23%
Other services	3,900	3%
TOTAL	118,000	100%

Source: ABI, 2008; * denotes where values cannot be presented due to data confidentiality

Land Use Characteristics

- 4.6.12. The proposed site is currently predominantly vacant and/or underutilised land. Eastside is proposed as a key development zone by Birmingham City Council and there is an existing masterplan for future development of this area comprising predominantly office, leisure and education uses.
- 4.6.13. Much of the area is designated as a Conservation Area and there are a number of listed and locally listed buildings. There is currently a 6.3 ha site located at Montague Street occupied by two waste transfer depots. This site is designated within the Birmingham Unitary Development Plan (2005) for primarily residential development.
- 4.6.14. The area to the south of Eastside, in a segment bounded by the existing New Street and Moor Street railway lines, is characterised by 19th century workshops and warehouse complexes, alongside some 1960s units. The majority of the stock is occupied with uses including MOT garages, depots and workshops however appears of low grade, offering low cost space in a relatively poor quality environment and upper floor space is underutilised. The recently published Big City Plan, Birmingham's city centre masterplan, envisages this area forming creative business, entertainment and cultural development.
- 4.6.15. Future floor space (without HS2) predictions are based on the assumption of limited development of the area south of the existing railway line, with the exception of known schemes with planning permission. An additional 195,000 square metres of office space is planned (equivalent to approximately 13,800 jobs), 1,000 hotel beds (equivalent to 500 jobs), 40,000 square metres of leisure space (equivalent to 500 jobs), 45,000 square metres of educational space and 25,000 square metres of retail space (equivalent to 1,100 jobs). There could be 3,000 residential units capable of housing 7,200 people. Some 35,000 square metres of industrial space would be lost (equivalent to 1,000 jobs).

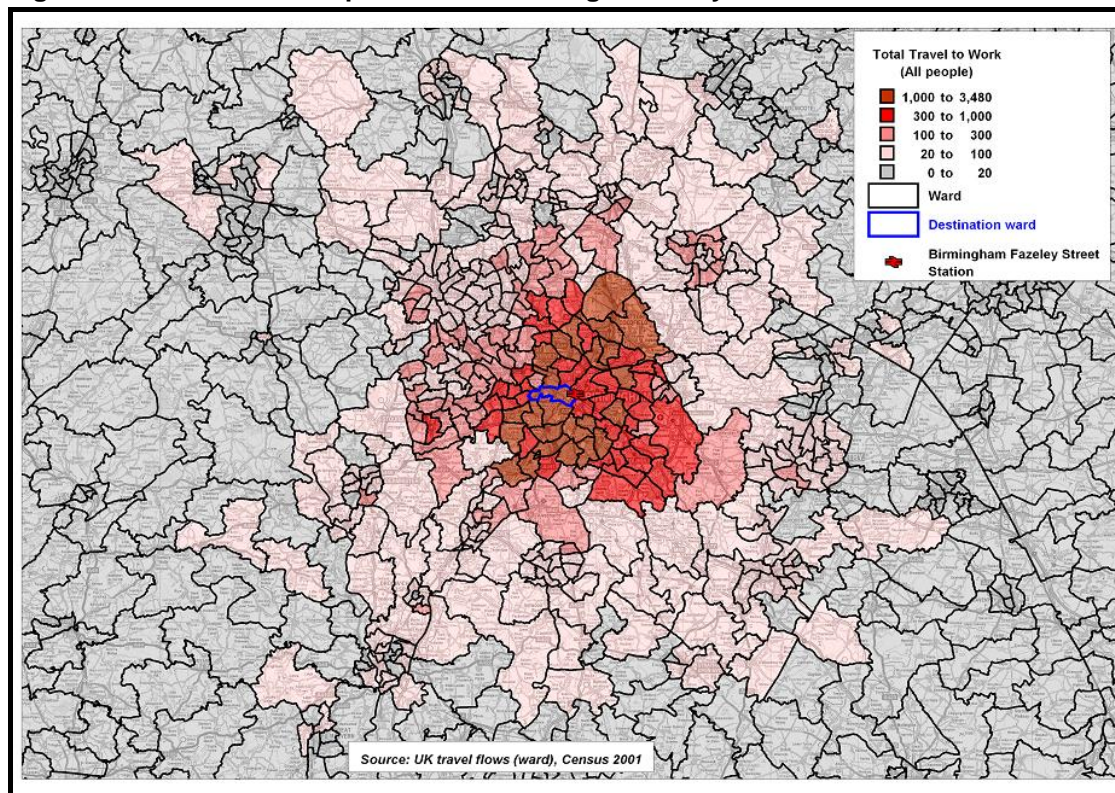
Description of the Transport Network

- 4.6.16. The proposed new high speed terminal station in Birmingham would be to the east of the existing Moor Street station, and the development would deliver a means of access between the two stations. Birmingham's light rail system, the Metro, links Wolverhampton with Birmingham Snow Hill via West Bromwich. An extension to New Street station has recently been given approval, and Centro's strategy is to extend the tram further to Curzon Street and ultimately further to BIA and the Birmingham Interchange High Speed station.
- 4.6.17. Moor Street station is currently served by Chiltern services to London Marylebone via Solihull, and London Midland services to Worcester and Malvern via Snow Hill and Kidderminster, to Leamington Spa via Solihull, and to Stratford-upon-Avon via Shirley. Birmingham New Street is a 10 minute walk from Moor Street, for services to Redditch, Lichfield, Walsall, Wolverhampton and beyond. New Street is also the hub for CrossCountry services to all over the UK.
- 4.6.18. A large number of bus services connect Moor Street to Birmingham city centre and beyond to the wider WMMA. Highway access to Curzon Street is limited due to its proximity to Birmingham city centre. The Middleway Ring Road (A4540) contains the city centre and although Curzon Street is accessible from the Ring Road, it is highly congested during peak periods.

Travel to Work Patterns

- 4.6.19. Ladywood ward has been used to analyse commuting patterns for Curzon St station as it includes Snow Hill, New Street and the area to the west of these stations, which are more representative of the type of development that would be expected at Curzon St. **Figure 18** below shows the travel to work patterns as captured in the 2001 Census.

Figure 18 – Travel to work patterns for Birmingham Ladywood ward



Source: Census 2001

4.6.20. More workers originate within the Ladywood ward than any other ward, followed by Edgbaston to the south. Harborne (west of the university), Sutton Coldfield, Moseley (south east of Edgbaston), Sandwell and Selly Oak (south of the university) are important origins. The majority are from the Birmingham and Solihull districts, with areas to the west of Birmingham city centre less well represented.

Summary

4.6.21. A large proportion of the residents in the Birmingham Curzon Street catchment are aged between 16-34 age bracket (60%), and a large proportion of people are economically inactive (53%). This partly reflects the large student population in the area. Similar to Euston, a larger proportion of residents hold higher levels of education. A low proportion of households are owner-occupied (23%) and a large proportion of households are using social renting (59%). There are also relatively high levels of non-white ethnicity in the area (38%).

4.6.22. On the whole, the residents of this area are considered to experience significant deprivation compared to other parts of the country, with an overall deprivation ranking of 14.9%. In terms of its sources, there is significant deprivation with respect to barriers to health/disability (7.9%), barriers to housing and services (8.6%) and the living environment (10.4%). Local employment is dominated by banking, finance and insurance (44%) and public administration, education and health (23%). Travel to work patterns show that the majority are from the Birmingham and Solihull districts, with areas to the west of Birmingham less well represented.

4.7. Key Locations on the Classic Network

Milton Keynes

4.7.1. The table below shows the housing and employment densities for Milton Keynes local authority between 2003 and 2008, including a 10% increase in employment density over this period. The density of new dwellings in Milton Keynes has risen from a low of 27 per hectare in 1998-2001 up to 53 per hectare in 2006-2009.

Table 43 – Housing and employment densities for Milton Keynes local authority

Category	2003	2004	2005	2006	2007	2008
Housing density (dwellings per sq km)	289	293	296	301	306	313
Employment density (jobs per sq km)	421	433	430	426	449	461

Source: ABI; ONS Neighbourhood statistics

4.7.2. Milton Keynes has been identified as one of four potential growth centres in the south east region to 2021 and is forecast to become a city of regional importance with a population of over 300,000¹¹. The strategy produced by the Milton Keynes Partnership includes strategic growth policies such as the provision of up to 13,000 houses in the urban area between 2011 and 2031, delivery of 7-8,000 in the south east growth area including 4,800 in the city, and development in the South West growth area in Aylesbury Vale of 15,000 dwellings between 2021 and 2031.

Coventry

4.7.3. Housing and employment densities in Coventry have remained fairly constant over the five year period between 2003 and 2008 with growth of 2% and 1% respectively. However the density of new dwellings in Coventry has risen from a low of 31 per hectare in 1994-1997 up to 62 per hectare in 2006-2009.

Table 44 – Housing and employment densities for Coventry local authority

Category	2003	2004	2005	2006	2007	2008
Housing density (dwellings per sq km)	1300	1304	1305	1312	1321	1331
Employment density (jobs per sq km)	1418	1431	1448	1427	1411	1437

Source: ABI; ONS Neighbourhood statistics

4.7.4. The Regional Spatial Strategy (RSS) panel report recommended 33,500 new dwellings in Coventry between 2006 and 2026. In particular, Coventry is designated a 'growth point' with the housing supply being increased by 9,000 by 2016.

Rugby

4.7.5. The density of housing in the local authority of Rugby has risen by 9% between 2003 and 2008. The density of new dwellings in Rugby has risen from a low of 22 per hectare in 1994-1997 to 40 per hectare in 2006-2009. Employment density in Rugby has also risen by 6% between 2003 and 2008.

¹¹ The new plan for Milton Keynes – a growth strategy to 2031 (Milton Keynes Partnership, June 2006)

Table 45 – Housing and employment densities for Rugby local authority

Category	2003	2004	2005	2006	2007	2008
Housing density (dwellings per sq km)	109	110	112	114	116	119
Employment density (jobs per sq km)	115	113	119	115	116	122

Source: ABI; ONS Neighbourhood statistics

4.7.6. The RSS report for the West Midlands recommended an additional 11,000 new dwellings in Rugby between 2006 and 2026.

Northampton

4.7.7. The housing density in Northampton local authority has increased by 6% between 2003 and 2008. The density of new dwellings in Northampton increased from 28 per hectare in 1994-97 to 54 in 2006-09. Employment densities have also increased by 4% between 2003 and 2008.

Table 46 – Housing and employment densities for Northampton local authority

Category	2003	2004	2005	2006	2007	2008
Housing density (dwellings per sq km)	1044	1054	1064	1074	1092	1108
Employment density (jobs per sq km)	1494	1560	1532	1532	1548	1549

Source: ABI; ONS Neighbourhood statistics

4.7.8. The West Northants Emergent Joint Core Strategy projects a minimum of 43,000 new dwellings by 2026 in the Northampton Implementation Area¹². However the Joint Planning Unit published a local approach to housing provision in November 2010 that showed 26,200 houses in Northampton by 2026 (9,000 of which have already been built)¹³.

¹² West Northamptonshire Emergent Joint Core Strategy (July 2009)

¹³ <http://www.westnorthamptonshirejpu.org/News/tabid/55/Default.aspx> (accessed 6 December 2010)

5. Socio-economic Impacts of HS2

- 5.1.1. The investment in a high speed rail network has the potential to deliver a mix of local development and regeneration impacts, as well as wider intra- and inter-regional redistributive impacts. For example, it could encourage firms and people to move closer to high speed rail stations and key locations on the WCML corridor that would benefit from improvements in commuter services. However, the extent to which this would occur would very much depend on how any new high speed rail network and station developments are integrated with local and regional land use and transport planning strategies.
- 5.1.2. The focus of this study is on defining and quantifying the potential development, regeneration and employment impacts within the catchments of the proposed HS2 stations. It is also to provide a high level assessment of the benefits and impacts due to the proposed enhancements in local services along the WCML corridor. These impacts are set out in the sections below.

5.2. Potential Development & Employment Impacts around HS2 Stations

- 5.2.1. The potential impacts of HS2 on the stimulation of development and employment were assessed within 1km of HS2 stations, with the exception of Birmingham Interchange where the catchment has been extended to include the NEC and surrounding areas. The assessment has estimated the scale of residential and commercial development that might happen within 10-15 years of completion of the stations. This analysis has provided a broad indication of possible employment impacts. The results should be interpreted within the context of local market dynamics which make it difficult to be precise about future market conditions. The future impact has been estimated using professional judgement on the future level of development activity and the potential take up of resulting employment opportunities by the local population.
- 5.2.2. It should be noted that changes to the transport system would not drive this development on their own; they depend, for example, on the ways in which transport changes integrate with local development plans and strategies. The results should be set within the wider context. There are many other factors in addition to transport accessibility that people and businesses would take into account when making land use decisions. For households, this can relate to the price of housing, and proximity to relatives, friends and places of employment, as well as to health and education facilities and other amenities. Businesses would consider the location of their markets and suppliers when making location decisions. In many cases, business decisions about where to locate would be constrained by social and lifestyle factors that are important for their staff. Most fundamentally, however, businesses would want to locate in areas where there is access to sufficient labour catchments; this can be supported by improved transport accessibility, but there are other important factors, such as whether the local labour force possesses the skills required.
- 5.2.3. HS2 would support the intensification of development in the locations served by the stations, hence leading to agglomeration and wider economic growth. It can also support the regeneration of economically deprived areas in those cities, which is of particular importance for centres such as Birmingham, which has significant deprivation in areas close to where the new station would be built.
- 5.2.4. It is important also to consider some secondary effects that result from such land use change. The benefits of attracting people and businesses to locate around HS2 station locations in London and Birmingham could come at the expense of other parts of those cities or elsewhere in the UK. Expectation of a northwards extension of HS2 could help to sustain the regeneration of other connected cities in the UK.

London Euston

- 5.2.5. The area around Euston station is relatively deprived and in need of regeneration, as recognised by local and regional land use policy. It has a significant proportion of social housing and economically inactive residents (nearly half of whom are students).
- 5.2.6. The redevelopment of Euston station would include the demolition of some 190 dwellings in four apartment blocks at the Regent’s Park Estate, a predominantly council-owned housing estate. Approximately 25 further dwellings and 20 commercial premises located in Euston, Melton and Cobourg streets, would also require demolition. HS2 Ltd would be committed to working closely and at an early stage with the London Borough of Camden and the GLA and with community groups, residents’ associations and affected residents generally to ensure that effective arrangements are in place to meet the housing needs of those affected by demolition of these dwellings, and to help to address wider impacts on the local community.
- 5.2.7. HS2 is likely to have a significant positive effect on the regeneration of the area in the immediate vicinity of Euston station, including rental/capital values in the areas surrounding the HS2 footprint. However, it is not likely that HS2 would be a significant catalyst for further increases to the floor space in the wider Euston area because the market would seek to maximise the density in this prime central London location in the normal course of development activity.
- 5.2.8. Based on a high level planning review of the station footprint and a review of the proposed and existing development activity around the station, a potential over-station development has been modelled above the proposed HS2 station. This development is likely to be a mixed use scheme including office, residential, retail and leisure accommodation. It is likely to be restricted to circa 9 storeys in height to avoid impact on strategic viewing corridors.
- 5.2.9. The table below shows how HS2 could increase net office development by 20,000 square metres, equivalent to approximately 1,400 jobs. Retail space could increase by 16,000 square metres broadly equivalent to 700 jobs. There could also be a net increase of 290 residential units as a result of HS2, providing space for around 700 people. There would also be a net loss of industrial floor space of 2,000 square metres or approximately 50 jobs. In total the net additional employment within the catchment area due to HS2 is likely to be in the region of 2,000 jobs.

Table 47 – Potential development impact around Euston station

Use	Existing floor space which would be lost	Future floor space without HS2	Future floor space with HS2	Net additional floor space from HS2
Office (sq m)	37,000	45,000	65,000	20,000
Residential (units)	250	540	830	290
Retail (sq m)	1,000	1,000	17,000	16,000
Hotel (beds)	742	1,178	1,178	0
Education (sq m)	5,000	5,000	5,000	0
Industrial (sq m)	0	2,000	0	-2,000

Source: Drivers Jonas Deloitte Analysis (December 2010)

- 5.2.10. Development around Euston station would not necessarily provide employment benefits to residents in the immediate area due to mismatches between skill levels and the nature of jobs attracted as well as the nature of the London labour market. That is, jobs around Euston are taken up by people from throughout London’s travel to work area.
- 5.2.11. Assuming that people commute to additional jobs in the area from similar places as to existing employment, then 6% of jobs would be filled by residents from within the Euston station catchment.

Old Oak Common

- 5.2.12. Old Oak Common is more deprived than the Euston area. A significant proportion of residents in the area have no qualifications – 33% compared to a London average of 24%. Given the nature of future employment is changing from industrial to office-based jobs, it is likely that a significant proportion of new jobs attracted to the area would be filled by non-local residents due to skill mismatches. The travel to work pattern could then become less localised than it is today especially given the radical improvements in accessibility to the area.
- 5.2.13. Future floor space assumptions have been based on a mid-point scenario of the masterplan options prepared for the London Borough of Hammersmith & Fulham in September 2009. In all scenarios it is assumed that the Old Oak Common Depot, North Pole Depot, and the proposed Crossrail sidings remain in rail related use and are not located elsewhere. The introduction of HS2, and an interchange with Crossrail would provide an opportunity for regeneration on land north of the Grand Union Canal currently occupied by industrial accommodation, to provide employment, residential and retail space at the expense of industrial land. Future floor space calculations of employment space assume that the existing light industrial floor space is replaced by a new office/ biomedical hub reflecting the aspirations of the local authority and other stakeholders. The number of residential units assumes an average size of 75 square metres reflecting a mix of flats and houses.
- 5.2.14. **Table 48** shows how HS2 could deliver 300,000 square metres of office space (equivalent to 21,300 jobs) as well as 30,000 square metres of retail space (equivalent to 1,300 jobs), 10,000 square metres of education space (equivalent to 150 jobs) and 4,300 residential units capable of accommodating some 10,400 people. This would replace some 100,000 square metres of industrial land (equivalent to 2,800 jobs). The net impact could be around 20,000 additional jobs.

Table 48 – Potential development impact around Old Oak Common station

Use	Existing floor space which would be lost	Future floor space without HS2	Future floor space with HS2	Net additional floor space from HS2
Office (sq m)	0	0	300,000	300,000
Residential (units)	0	0	4,330	4,330
Hotel (beds)	0	0	0	0
Retail (sq m)	0	0	30,000	30,000
Industrial (sq m)	90,000	100,000	0	-100,000
Education (sq m)	0	0	10,000	10,000

Source: Drivers Jonas Deloitte Analysis (December 2010)

- 5.2.15. The types of jobs available in this area would change from being predominantly industrial blue-collar jobs to office-based white-collar jobs, leading to more employment in finance, insurance or public sector industries and less employment in the manufacturing or distribution sectors.

Birmingham Interchange

- 5.2.16. The immediate station catchment area has a small local population that contribute a significant proportion of the employment at the NEC and BIA. Therefore any additional development here is likely to draw on a wider labour catchment.
- 5.2.17. The Green Belt has been strongly protected in recent years through planning policy, and recent applications for development within it have been refused even where they would comprise proposed extensions to established existing Business Parks. Retail development is sparse along this corridor and the potential for retail development has been assumed to be limited to that on any new station concourse. The primary net gains

from an economic perspective would therefore be in the office market. Permitted schemes have an estimated 230,000 square metres of expansion space, but the office market has been slow in the last two years, and in better economic times with HS2 Interchange station in existence, developers may be prepared to build speculatively again. On current activity levels, it has been assumed that only around 93,000 square metres of the permitted space might be built out, with additional turnover of tenants in the already built stock. With HS2, it has been assumed that twice this amount might be forthcoming.

- 5.2.18. It has been assumed that within the NEC complex, already excluded from the Green Belt, there could be small parcels of development land released for new schemes. There is a current application for a gaming licence for a mixed use scheme on a four acre plot; with around 50 acres of car parking land in the north east corner of the NEC site that is under-used for most of the year, and where small hotel development has recently been built. This might mean other similar sized schemes for hotel/ leisure could happen. Further, if the airport runway is extended and passenger numbers grow in accordance with forecasts, then the potential for hotel requirements in the area generally is likely to increase.
- 5.2.19. **Table 49** shows how HS2 could deliver an additional 47,000 square metres of office space (equivalent to 3,300 jobs), 600 hotel beds (equivalent to 300 jobs), 1,000 square metres of retail (equivalent to 50 jobs) and 10,000 square metres of leisure space (equivalent to 100 jobs). No residential units would be developed and 20 acres of open space would be lost. The net impact would be approximately 3,750 additional jobs.
- 5.2.20. Given the small local population in the catchment area, there is a risk that additional employment would not be locally sourced and would be provided from a wider area.

Table 49 – Potential development impact around Birmingham Interchange station

Use	Existing floor space which would be lost	Future floor space without HS2	Future floor space with HS2	Net additional floor space from HS2
Office (sq m)	0	93,000	140,000	47,000
Residential (units)	0	0	0	0
Hotel (beds)	0	300	900	600
Retail (sq m)	0	0	1,000	1,000
Leisure (sq m)	0	5,000	15,000	10,000
Parkland / open space (acres)	20	0	0	-20

Source: Drivers Jonas Deloitte Analysis (December 2010)

- 5.2.21. There is substantial potential for development within the boundaries of the NEC and much would depend on how easily accessible both the airport and NEC are from the new station.

Birmingham Curzon Street

- 5.2.22. The area around the station is characterised by a high proportion of social housing and low levels of economic activity with a significant student population.
- 5.2.23. The proposed site is currently predominantly vacant and/or underutilised land involving minimal demolition on the proposed approach to the city centre. However, the proposed station concourse and route through Eastside cuts through land where permitted schemes are proposed. As a result of this, the City Council has commissioned a new masterplan to reconfigure proposals around HS2 and also to consider interim development in the period up to 2026 when the station would become operational.
- 5.2.24. The assessment of floor space assumptions (with and without HS2) are broadly based on the masterplan options and known permitted schemes. Adjustments have been made for

those schemes situated on the proposed route and concourse. An average residential unit size of 60-75 square metres has been applied depending on the location.

- 5.2.25. Some schemes, notably City Park Gate, Curzon Park and Birmingham City University Campus are unable to be developed in accordance with their permissions due to the proposed route of HS2. Therefore a scaled back version of the mixed use schemes has been assumed, and in the case of BCU a relocation to the Eastside Locks site (at the expense of the existing proposed scheme). It is assumed that HS2 would act as a catalyst for redevelopment of the area around the station.
- 5.2.26. **Table 50** shows that HS2 could enable an additional 75,000 square metres of office space (equivalent to 5,300 jobs), 10,000 square metres of retail space (equivalent to 450 jobs), 400 hotel beds (equivalent to 200 jobs), 10,000 square metres of education space (equivalent to 150 jobs) and 10,000 square metres of leisure space (equivalent to 100 jobs). There would also be an additional 1,000 residential units with capacity for around 2,400 people.
- 5.2.27. This would be all at the expense of 55,000 square metres of industrial area which equates to 1,500 jobs. The net impact would therefore be in the order of 4,700 additional jobs.
- 5.2.28. Assuming that people commute to additional jobs at HS2 station developments in the same patterns as for existing employment in those areas, then the 4% of jobs would be filled by residents within the Birmingham Curzon Street station catchment.

Table 50 – Potential development impact around Birmingham Curzon Street station

Use	Existing floor space which would be lost	Future floor space without HS2	Future floor space with HS2	Net additional floor space from HS2
Office (sq m)	0	195,000	270,000	75,000
Residential (units)	1,000	3,000	4,000	1,000
Hotel (beds)	0	1,000	1,400	400
Retail (sq m)	0	25,000	35,000	10,000
Leisure (sq m)	0	40,000	50,000	10,000
Industrial	-4,000	-35,000	-90,000	-55,000
Education	0	45,000	55,000	10,000
Parkland/Open Space (acres)	4	7	7	0
Other	0	7 storey car park, 6,000 sq m community space	2,000 sq m community space	

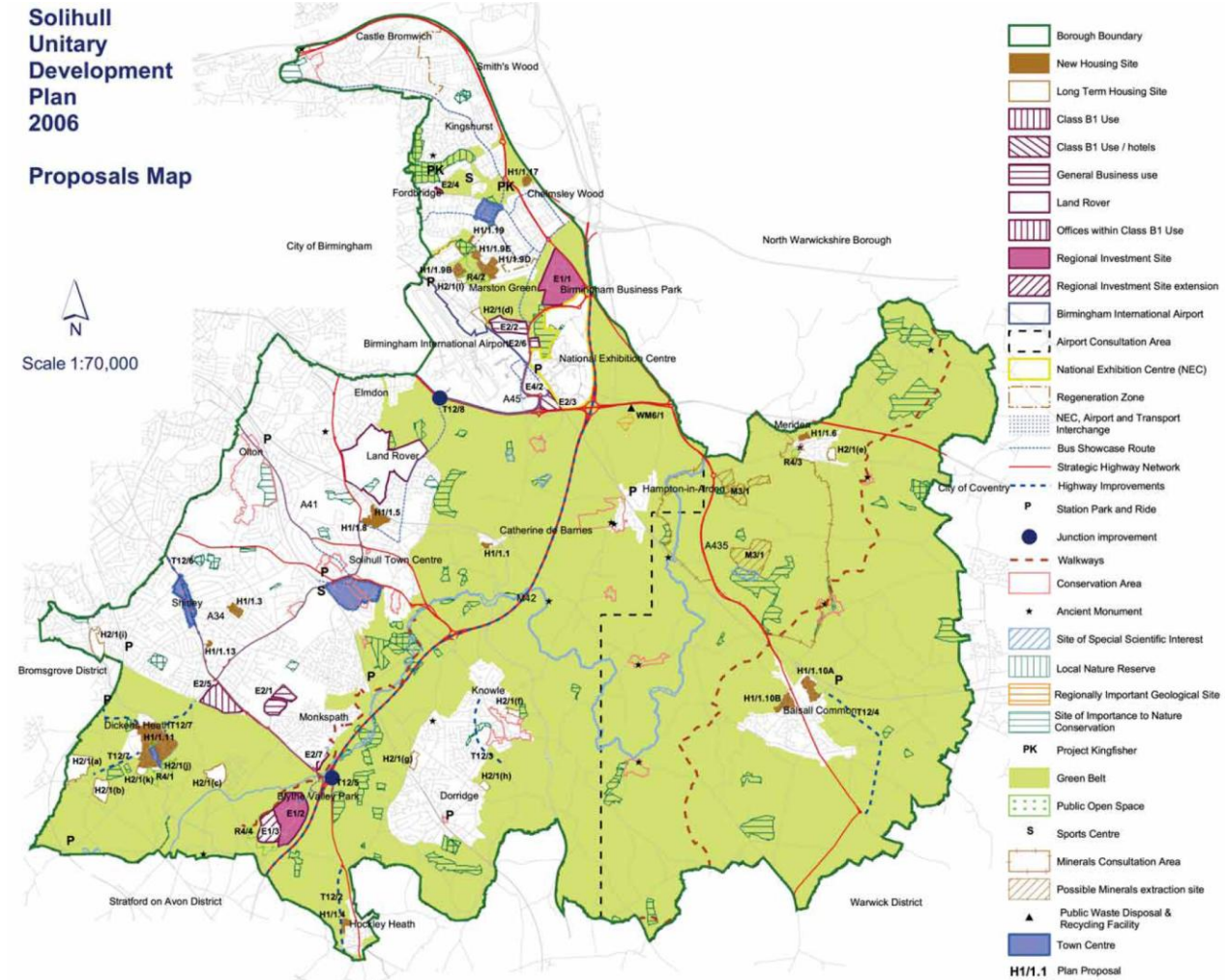
Source: Drivers Jonas Deloitte Analysis (December 2010)

- 5.2.29. This station would serve the majority of Birmingham's central employment area and so development in this location would have a more significant impact than at Euston. The existing travel to work patterns show commuters to this area come mostly from the Birmingham, Solihull and Sandwell districts with a lower proportion from Wolverhampton, Dudley and Coventry.

5.3. Necessary supporting mechanisms

- 5.3.1. For further development around the Birmingham Interchange station that cannot be accommodated within the NEC footprint, it might be necessary for Solihull MBC to change its policy on development within Green Belt land, in contrast to recent decisions to block plans to develop there. **Figure 19** shows the whole area bounded by the A45, M42 and M6 is designated Green Belt.

Figure 19 – Green Belt area around Birmingham Interchange station



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Mapsheet Borough of Solihull - 100023137 (2005)

Source: Solihull Unitary Development Plan (2006)

5.3.2. To facilitate additional development at Old Oak Common, there needs to be improved access to the new Crossrail station and the local road network. The existing rail sidings and industrial areas mean that the area does not have an extensive road network in place.

5.4. Potential impacts at key stations on the WCML

Milton Keynes

5.4.1. The introduction of HS2 would release a significant amount of capacity on the WCML. This capacity would be used to deliver 11 trains per hour during the peak between Milton Keynes Central and London Euston, seven of which are non-stop and the remaining five stopping at Watford junction only¹⁴. This would be a step change in the commuting service compared to the five trains per hour currently available.

5.4.2. This increase in capacity would support the growth plans outlined in the Milton Keynes 2031 strategy in attracting people who work in London. In addition to this, Milton Keynes would become better connected to other UK cities which may encourage commercial development. There would be two trains in the peak hour to each of Glasgow, Crewe, Manchester and Liverpool, and three trains in the peak hour to Northampton. Network Rail is currently building their new head office on the site of the old hockey stadium at Milton Keynes.

¹⁴ London to the West Midlands and Beyond – HS2 Technical Appendix (HS2, December 2009)

Coventry

- 5.4.3. Releasing capacity on the WCML would enable an increase in the frequency of Coventry to Birmingham trains during the peak hour from seven to nine. This could facilitate an increase in commuting into Birmingham along the Coventry corridor, including Canley, Berkswell, Marston Green, Lea Hall and Stechford. Four trains per peak hour to Euston and Rugby would also be enabled, an increase on the three trains in the current timetable. Increased commuter services would contribute to the delivery of planned growth at Coventry supporting its Growth Point designation.
- 5.4.4. Coventry already has a relatively high housing density so additional developments would probably need to be high density residential schemes.

Rugby

- 5.4.5. The introduction of HS2 would increase the number of fast trains per hour to London during the peak hour from three to four, as well as increasing the number of trains into Birmingham International and Birmingham New Street stations during the peak hour from three to four. Releasing capacity on the WCML would support housing growth at Rugby.
- 5.4.6. Rugby has fairly low housing densities, providing potential for residential development.

Northampton

- 5.4.7. Northampton currently has three trains to London in the morning peak hour, and two trains to Birmingham International and Birmingham New Street. With HS2, there would be an additional path (non-stop) to London, and Birmingham International would still have two trains in the peak hour. However there would only be one train in the peak hour that serves Birmingham New Street, with a faster journey time and fewer stops.
- 5.4.8. A reduced service to New Street may not be attractive for housing growth, although there would remain two trains per hour to Birmingham International which may support the commercial developments in the vicinity of the NEC described above.

Summary

- 5.4.9. In summary, Milton Keynes has relatively low housing and employment densities and has a fairly ambitious housing growth strategy, supported by a major step change in services post-HS2. Coventry has a relatively high housing density and a very ambitious housing growth strategy, supported by a significant change in train services. Rugby has low densities of housing and employment and therefore the potential to increase these through development. Northampton has reasonably high densities but the release of capacity due to HS2 is currently expected to have only a minor impact on local services therefore its potential to grow may be restricted.

Table 51 – Impact of HS2 on classic network stations

Category	Milton Keynes	Coventry	Rugby	Northampton
Housing density	1	4	0	3
Housing growth	3	0	2	0
Employment density	1	3	0	3
Change in services post-HS2	4	0	2	1
Potential to grow densities	4	1	3	0

Annex 1: LSOAs Included in the Analysis

The table below list the LSOAs that were included in each of the station catchments.

Table 52 – Lower Super Output Areas for station catchment areas

Euston	Old Oak Common	Birmingham Interchange	Birmingham Curzon St
Camden 021B	Ealing 015B	North Warwickshire 007D	Birmingham 050D
Camden 021C	Ealing 015C	Solihull 009A	Birmingham 059F
Camden 022A	Ealing 015D	Solihull 009B	Birmingham 061A
Camden 022B	Ealing 024A	Solihull 017A	Birmingham 068B
Camden 022C	Hammersmith and Fulham 001C		Birmingham 068D
Camden 022D	Hammersmith and Fulham 001D		
Camden 022E	Hammersmith and Fulham 001E		
Camden 023A			
Camden 023B			
Camden 023C			
Camden 023D			
Camden 023E			
Camden 024C			
Camden 025A			
Camden 025B			
Camden 025C			
Camden 025D			
Camden 025E			
Camden 026A			
Camden 026B			
Camden 026C			
Camden 026D			
Camden 028A			
Westminster 013A			

Source: Booz & Company, CB, Temple Group analysis

