

STAGE 3 REPORT

JOINT EVIDENCE BASE AND INFRASTRUCTURE STUDY

Contents

1	Introduction and Brief	1
2	Labour market impacts and issues	4
3	Commercial property market impacts and issues	12
4	Conclusions and next steps	21

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1 Introduction and Brief

This draft report is part of the Joint Evidence Base and Infrastructure Study, prepared jointly by Arup and Quod. This work is in draft. The findings and conclusions in this draft report represent the views of consultants. They do not form part of the evidence base for any current or draft Local Plans. No policy conclusions can be drawn from this report; it is necessary background work to inform joint working associated with a potential Development Consent Order (DCO) application relating to the expansion of Heathrow Airport.

Introduction

- 1.1 The Joint Evidence Base and Infrastructure Study (JEBIS) has been commissioned by Heathrow Airport Limited (HAL) and the Heathrow Strategic Planning Group (HSPG).
- 1.2 The intention of the Study is to provide an evidence base for the authorities in the study area, in the context of the wider region and sub-region, concerning the potential impacts of the expansion of Heathrow Airport. The evidence base looks principally at potential impacts on the local economy, labour market and associated demand for employment land and housing. It will assess associated infrastructure requirements to support this level of development.
- 1.3 It is not intended to provide a planning framework for the authorities – it will be up to them individually and collectively as to how they wish to use the evidence base. The work is intended to be ‘non-spatial’ in that it will not make any specific recommendations on the distribution of any growth – this will again be a choice for the authorities arising from the evidence, their own evidence and local plans and future joint working.
- 1.4 As agreed by the HSPG, the JEBIS will cover two main parts:
 - Assessment of the potential impact of the Heathrow proposals on local economic development, demand for employment floorspace and on demand/need for housing resulting from increased employment;
 - Infrastructure and infrastructure funding to support this development.
- 1.5 The JEBIS is a five-stage study. It is an iterative process, with the findings of each stage tested through consultation and formal workshop sessions with HSPG partners, both to ensure that all key data is being considered and to further define the required outputs from each stage influenced by the findings of the completed stages. The intention is for an effective and useable evidence base to be produced as a final output, supported by the interim reports. This Draft Report is the third of the five interim reports and follows directly from the Draft Stage 2 Report.
- 1.6 Stages 1 and 2 are about defining the economic development scenarios for the area, bringing together current projections with those for Heathrow, to produce some combined scenarios and identify potential labour and property demand. Stages 3 and 4 are about testing the implications of these scenarios for their economic impacts and the planning of the local area. Stage 5 is about identifying what infrastructure is planned and might be required based on these implications.
- 1.7 The aim of Stage 2 was to bring together the study areas and the employment forecasts established and reviewed in Stage 1, in order to create combined employment growth forecasts. The aim of Stage 2 was to understand the extent to which Heathrow expansion will create additional employment growth above that

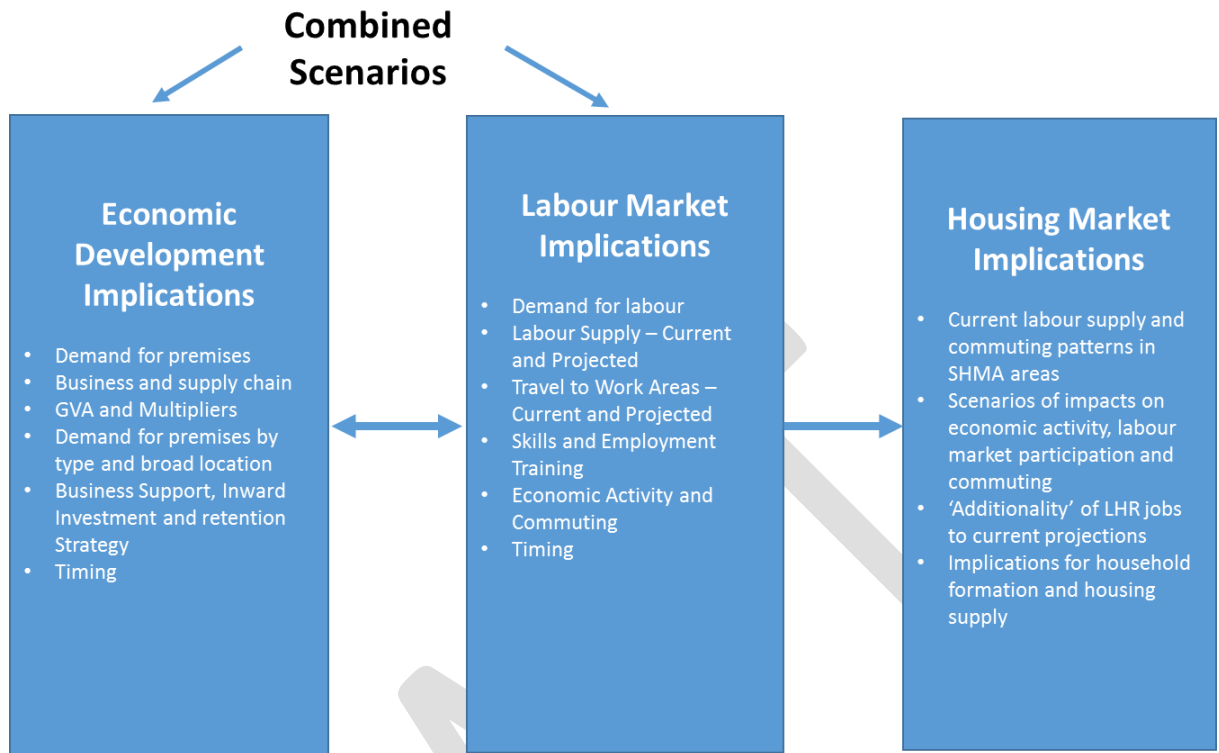
which will occur regardless – the ‘additionality’. Stage 2 reviewed Heathrow employment impacts in order to establish the breakdown of current and future Heathrow employment into direct, indirect and induced categories. It also reviewed projections and estimates of background employment growth. It used the Oxford Economics model to produce a central employment growth scenario with additional jobs from Heathrow expansion, including projections by local authority within the JEBIS Core Area.

Stage 3: Implications for Economic Development and the Labour Market

Brief

- 1.8 The purpose of Stage 3 is to assess the implications of the combined employment growth forecasts developed in Stage 2 for economic development and planning to meet labour market and property requirements. The forecasts from Stage 2 entail an uplift in employment within the HSPG boroughs as a result of Heathrow expansion and this uplift will be over and above the baseline growth that will occur regardless.
- 1.9 This uplift in employment will have an impact on local and regional commercial property markets and labour markets, as shown in Figure 1 below. In terms of commercial property markets, an uplift in employment will entail an increase in demand for employment sites and floorspace. There are a variety of ways in which local property and labour markets may respond to this increase in employment.
- 1.10 Stage 3 will produce an analysis of the relationship between jobs and labour markets across the sub-region. Heathrow is already the major employment site within the HSPG area and one of the largest employment sites in the country. This already has a major impact on labour markets, with around 50% of workers at Heathrow travelling from the five nearest boroughs.
- 1.11 Data from the Oxford Economics model will be used to support a review of local labour markets in order to understand how these markets relate to existing employment, including elements such as economic activity of residents, demographics and commuting patterns. This model takes account of baseline labour market conditions and demographics, as well as modelling change in the future. This study will identify current and future labour market requirements by broad area which will feed into an assessment of the potential impacts on local housing markets in Stage 4.
- 1.12 Planned improvements in transport infrastructure such as Crossrail will improve access to Heathrow as well as improving access to and from the HSPG boroughs. This in turn may affect future commuting patterns. This study will take account of potential future changes.
- 1.13 This analysis will draw on work from Stage 2, which reviewed current employment at Heathrow in order to estimate sectoral breakdowns of direct, indirect and induced employment connected to Heathrow. This then supported the combined employment growth forecasts produced as part of this Study.
- 1.14 Stage 3 will aim to identify and assess the future demand for employment floorspace across the HSPG districts, including the ‘baseline’ growth position and the ‘additionality’ of demand as a result of the airport expansion. It will also identify the potential location and timing of demand and those uses that have specific locational requirements (particularly on and close to airport), and those with more flexibility to be provided in the wider HSPG or sub-region.
- 1.15 This study will suggest potential interventions to maximise local benefits, including employment and training and inward investment activities, which can help the HSPG authorities, LEPs and other partners plan for growth.

Figure 1: Stages 3 and 4



2 Labour market impacts and issues

Employment growth and existing conditions

- 2.1 As set out in Stage 2, Heathrow expansion will lead to an expansion in employment within the Core Area above future baseline growth. Overall, modelled growth using the Oxford Economics model indicates that employment uplift from Heathrow will consist of approximately 48,175 jobs within the JEBIS Core Area, predominately likely to fall within Hillingdon and Hounslow. This includes direct employment, indirect (supplier) employment, and induced employment (stimulated by employee spending). The numbers in Figure 2 do not include the wider “catalytic” employment growth made possible by the growth of Heathrow, the nature, extent and location of which is to some degree a policy choice for the local authorities in the area.

Figure 2: Oxford Economics modelled employment growth (baseline and additional, central case scenario)

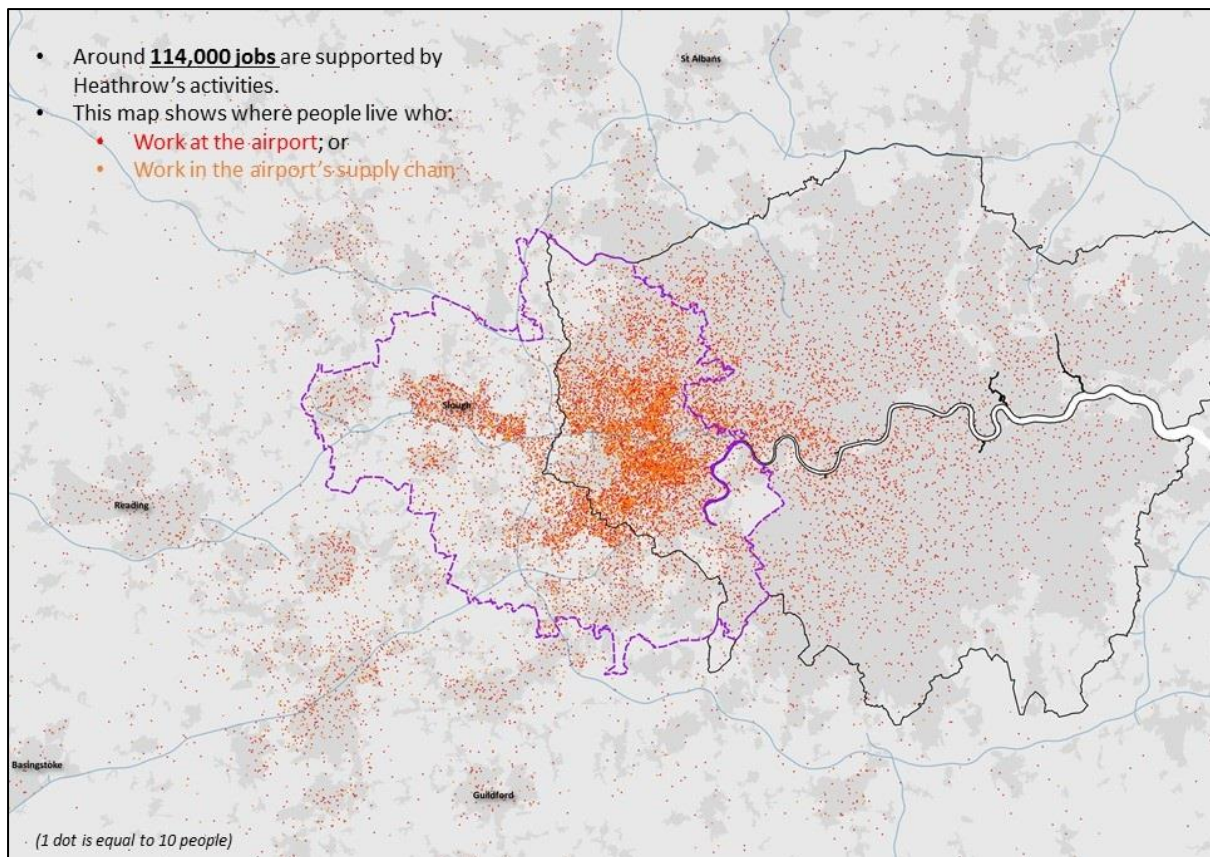


- 2.2 It should be stressed that this is a ‘policy-off’ modelling of employment impacts and location; it does not take into account potential policies by authorities to attract or direct this growth to particular locations, such as planning for additional employment space or policies to attract specific sectors such as the logistics and storage sector.
- 2.3 These additional jobs include approximately 35,600 direct jobs which are reliant on the airport, and as a result will be predominately based on or near the airport and within Hillingdon and Hounslow. Employment expansion at Heathrow is also likely to predominately occur within the Transportation and Storage sector, as well as other sectors such as Accommodation and Food Services and Administrative and Support Service Activities.

Commuting

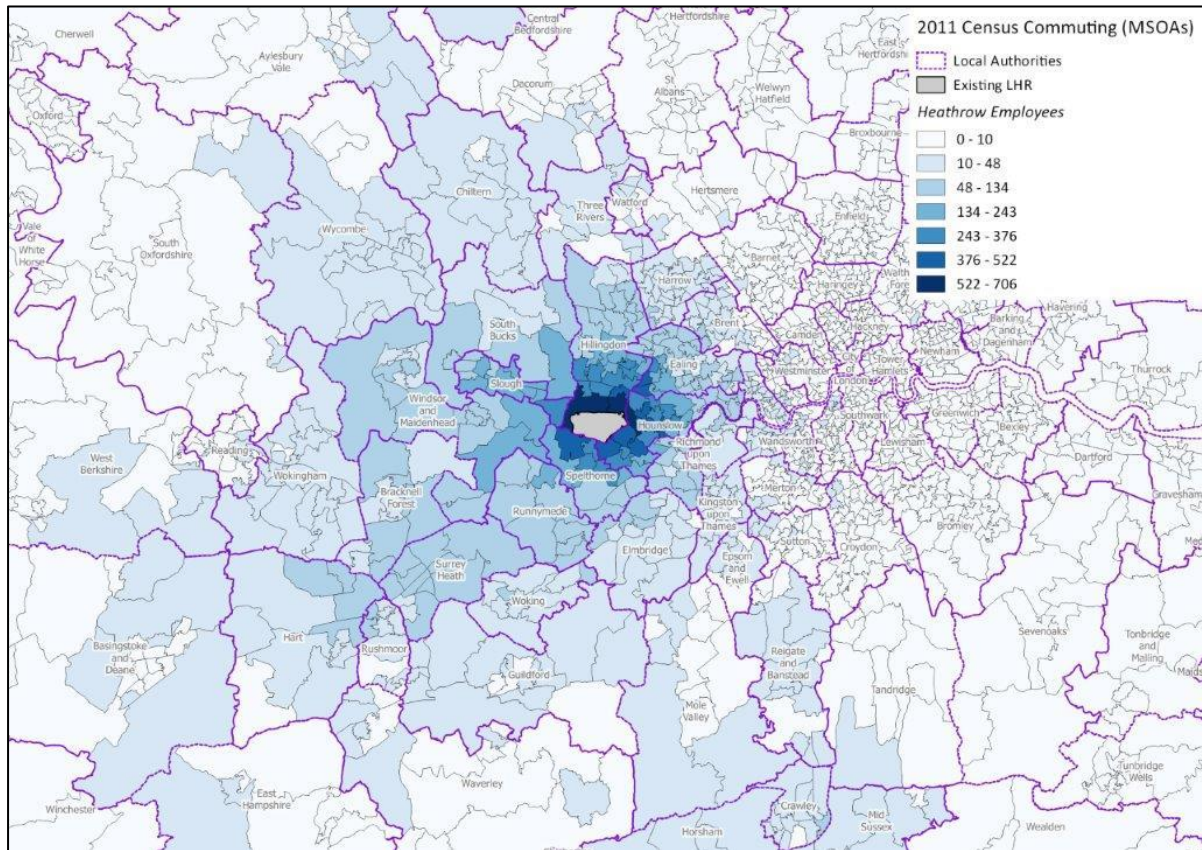
- 2.4 Existing Heathrow-related employment (direct, indirect and induced) consists of around 114,000 jobs within London and the South East. Employees working in Heathrow-related employment currently travel from a very wide area, but in particular this workforce is particularly drawn from within those local authorities and areas closest to Heathrow, as Figure 3 shows:

Figure 3: Current employee distribution (all employment)



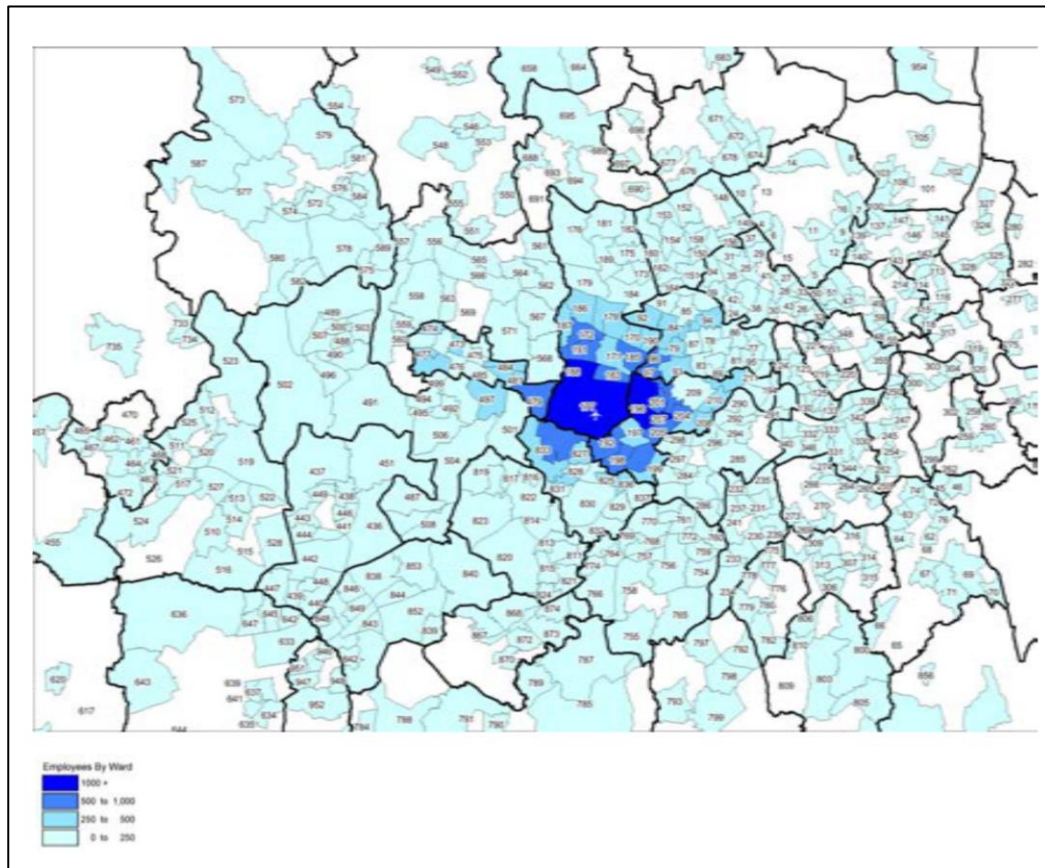
- 2.5 This distribution shows the importance of the Slough and Heathrow Travel to Work Area (TTWA), with Heathrow acting as a major employment area at the centre of the TTWA. This pattern is reflected in data on commuting to Heathrow and its immediate surroundings from the 2011 Census:

Figure 4: Heathrow on-site employment (travel to work), Census 2011



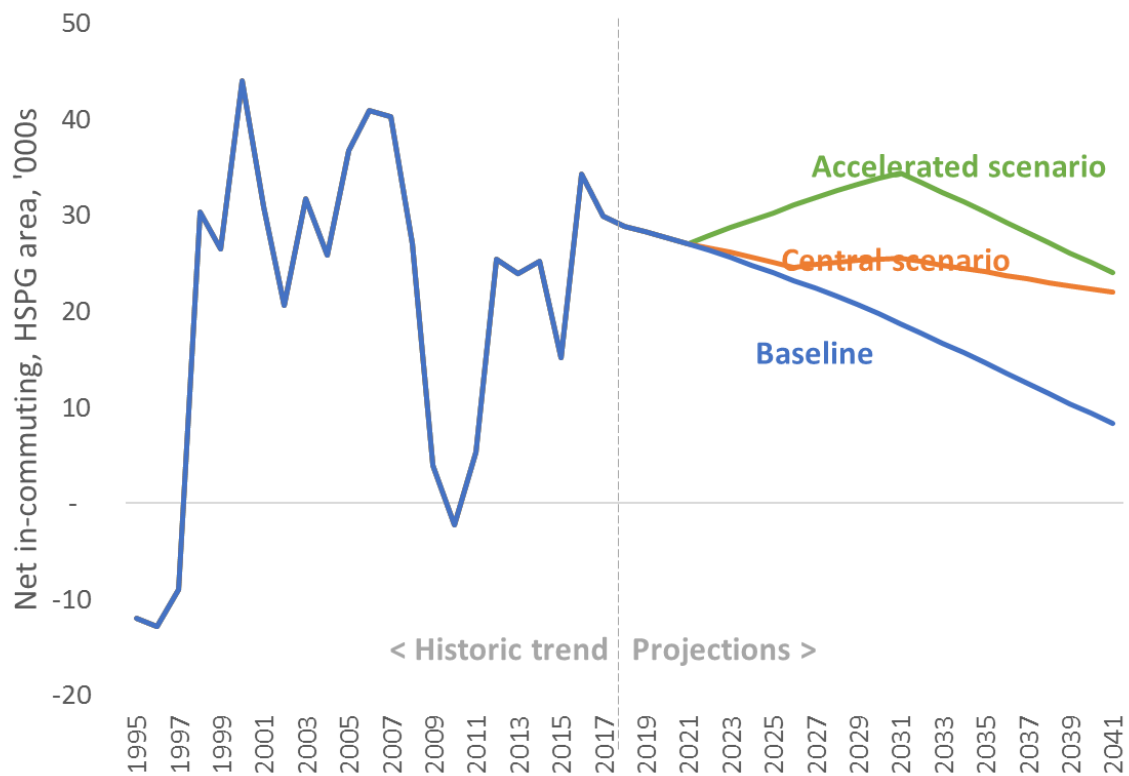
- 2.6 This again reflects the strength of commuting patterns within the Slough and Heathrow TTWA. These patterns are also reflected in data from HAL's own 2013/14 employment survey on where employees work:

Figure 5: Heathrow employees (travel to work), HAL 2013/14 Employment Survey



- 2.7 These existing patterns are important factors that affect the economic and labour market implications of employment growth due to Heathrow expansion. It shapes the assessments presented in this study of how employees will be distributed and how local labour markets will be affected by Heathrow expansion.
- 2.8 Data from the Oxford Economics model shows that commuting patterns within the JEBIS authorities are expected to change in the baseline scenario without Heathrow expansion, with net in-commuting to the Core Area falling (driven in particular by growth in out-commuting from Ealing and Spelthorne). However, the model projects that employment growth as a result of Heathrow will prevent much of this fall in net in-commuting. This represents an important way in which local labour markets would respond to employment growth

Figure 6: Commuting patterns (Oxford Economics model)

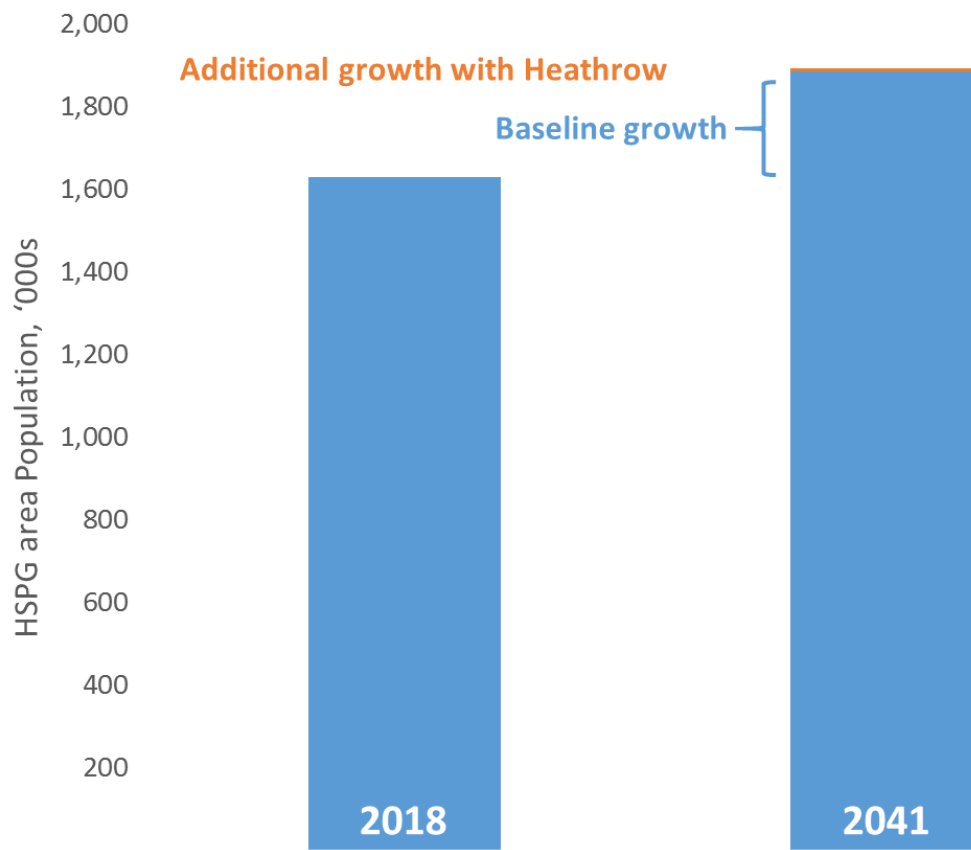


- 2.9 It is also worth noting that transport and surface access plans and strategies for Heathrow, and the Core Area more widely, will have an important effect on commuting patterns; initiatives such as Crossrail, High Speed Two, Piccadilly Line upgrades, bus network upgrades and Western Rail and Southern Rail Access to Heathrow would enhance access to Heathrow from London and the South East and broaden the potential labour market for an expanded airport.

Labour market capacity

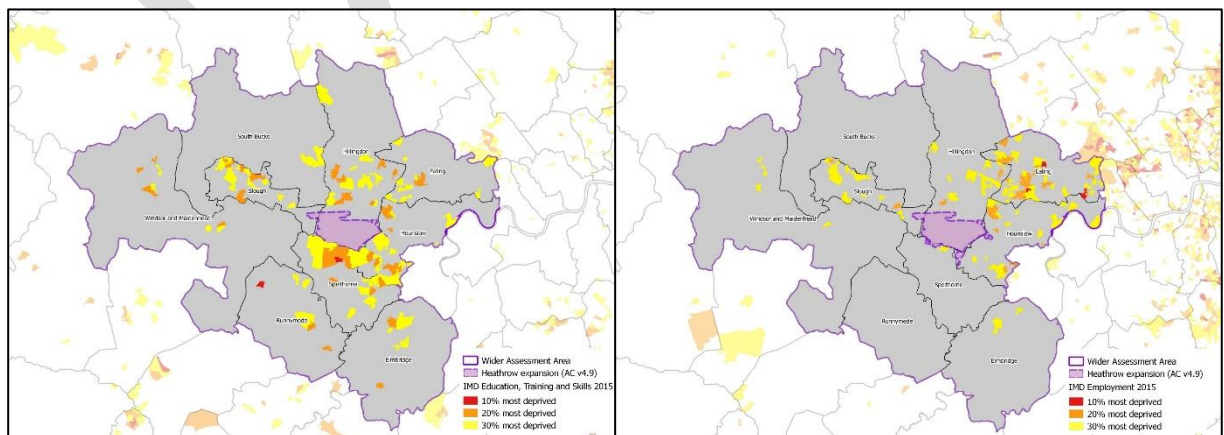
- 2.10 One of the most important factors that will determine the labour market implications of employment growth as a result of Heathrow expansion is baseline demographics and economic activity. The Core Area already has a substantial population, and this is forecast both by the Oxford Economics model and by Office for National Statistics and Greater London Authority (GLA) projections to increase up to 2041. The Oxford Economics model in particular projects strong baseline growth in the Core Area, and projects that Heathrow expansion will lead to a proportionately very small level of additional population growth of approximately 10,000 to 2041:

Figure 8: Baseline and additional population growth to 2041 (Oxford Economics model)



- 2.11 Demographics and economic activity are a key reason for the relatively small amount of additional population growth. This relates partly to the level of labour market 'slack' or spare capacity under the baseline scenario. Some of this capacity relates to unemployed, underemployed or economically inactive people. There is at present some evidence of economic inactivity or unemployment in parts of the Core Area. For example, data from the Indices of Multiple Deprivation (IMD) 2015 shows some deprivation in terms of employment and education, training and skills in the Core Area, indicating areas with higher rates of residents currently experiencing unemployment or underemployment:

Figure 9: IMD 2015, Education, training and skills (left) and employment (right) domains of deprivation



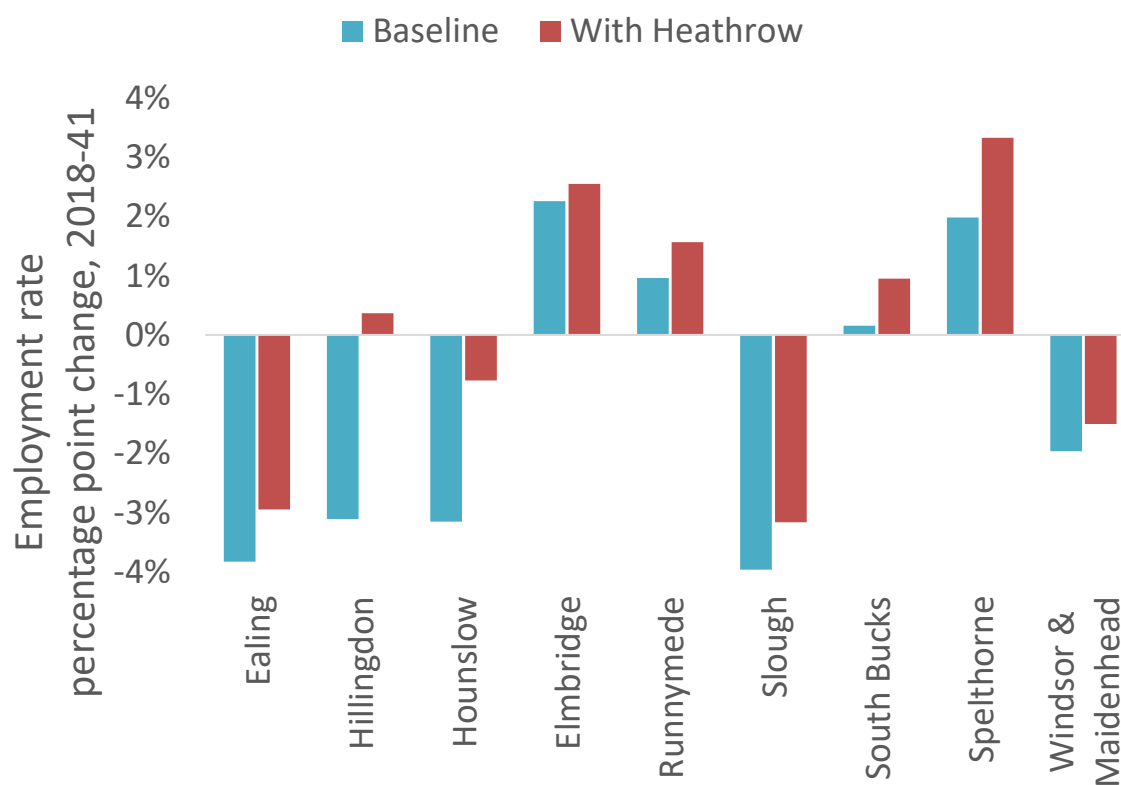
2.12 Economic activity rates in the Core Area are currently high, according to Annual Population Survey data for 2017:

Table 1: Economic activity rates

Area	%
Ealing	79.6
Elmbridge	78.4
Hillingdon	78.7
Hounslow	81.6
Runnymede	84.9
Slough	79.2
South Bucks	78.3
Spelthorne	84.6
Windsor and Maidenhead	84.3
Slough and Heathrow TTWA	80.4
England	78.6
London	78.2
South East	81.4

2.13 The Oxford Economics model forecasts that baseline employment rates in several authorities within the Core Area will fall between 2018 and 2041, including in Hillingdon and Hounslow. However, employment growth as a result of Heathrow expansion is forecast to increase employment rates relative to the baseline. In Hillingdon, this means that there is forecast to be net growth in employment rates as opposed to a fall:

Figure 10: Employment rate change to 2041 (Oxford Economics model)



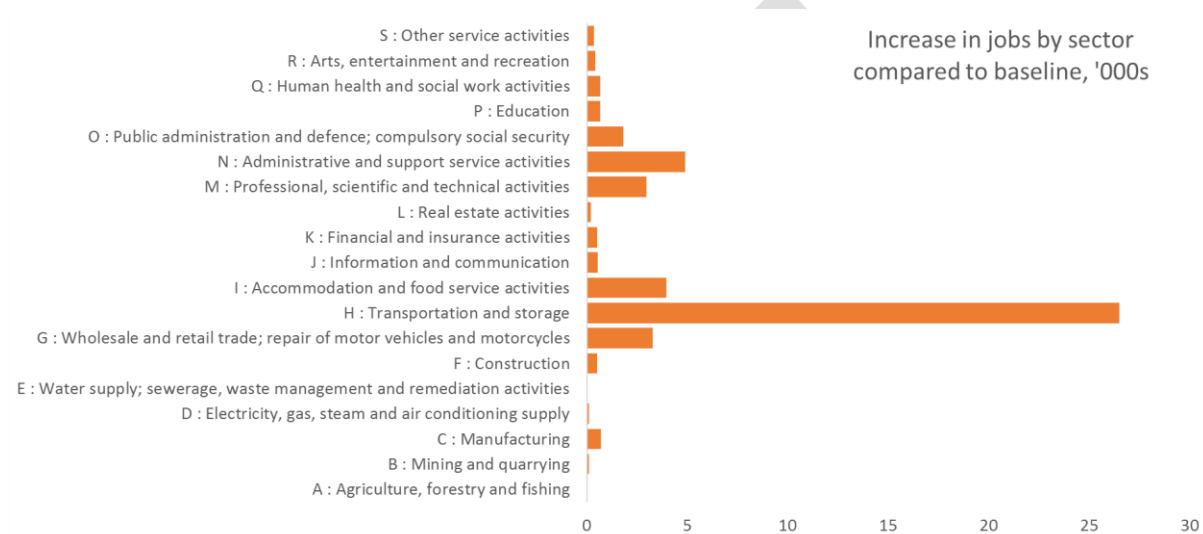
- 2.14 This demonstrates that the baseline scenario forecasts that there will be some labour market 'slack' or capacity over the period to 2041 such as economic inactivity, and that employment growth as a result of Heathrow expansion would be able to fill a large portion of this capacity and provide jobs for some residents who may otherwise be economically inactive, unemployed or underemployed.
- 2.15 It should be noted that this is a modelled outcome based on several trends, and that it is 'policy-off'. There are a range of policy interventions that could be used to affect labour market outcomes in response to growth from Heathrow. For example, active labour market and skills and training measures could boost employment rates and help residents access new employment opportunities, while measures to increase transport accessibility can widen the labour market catchment for Heathrow and allow easier access to Heathrow-related jobs for more people. HSPG will explore and develop in detail measures to manage labour market implications such as these.

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3 Commercial property market impacts and issues

- 3.1 Employment growth as a result of Heathrow expansion will entail an increase in demand for employment floorspace. Its location and the extent of land required varies based on the use. This demand will be particularly concentrated in certain sectors. As shown below, much of this employment growth will be concentrated in the Transportation and Storage sector (with an additional 26,000 jobs over the baseline), as well as other sectors which serve the airport's operation and users, such as the Administrative and Support Services sector (an additional 5,000 jobs) and the Accommodation and Food Services sector (an additional 4,000 jobs):

Figure 11: Employment growth by sector (Oxford Economics model)



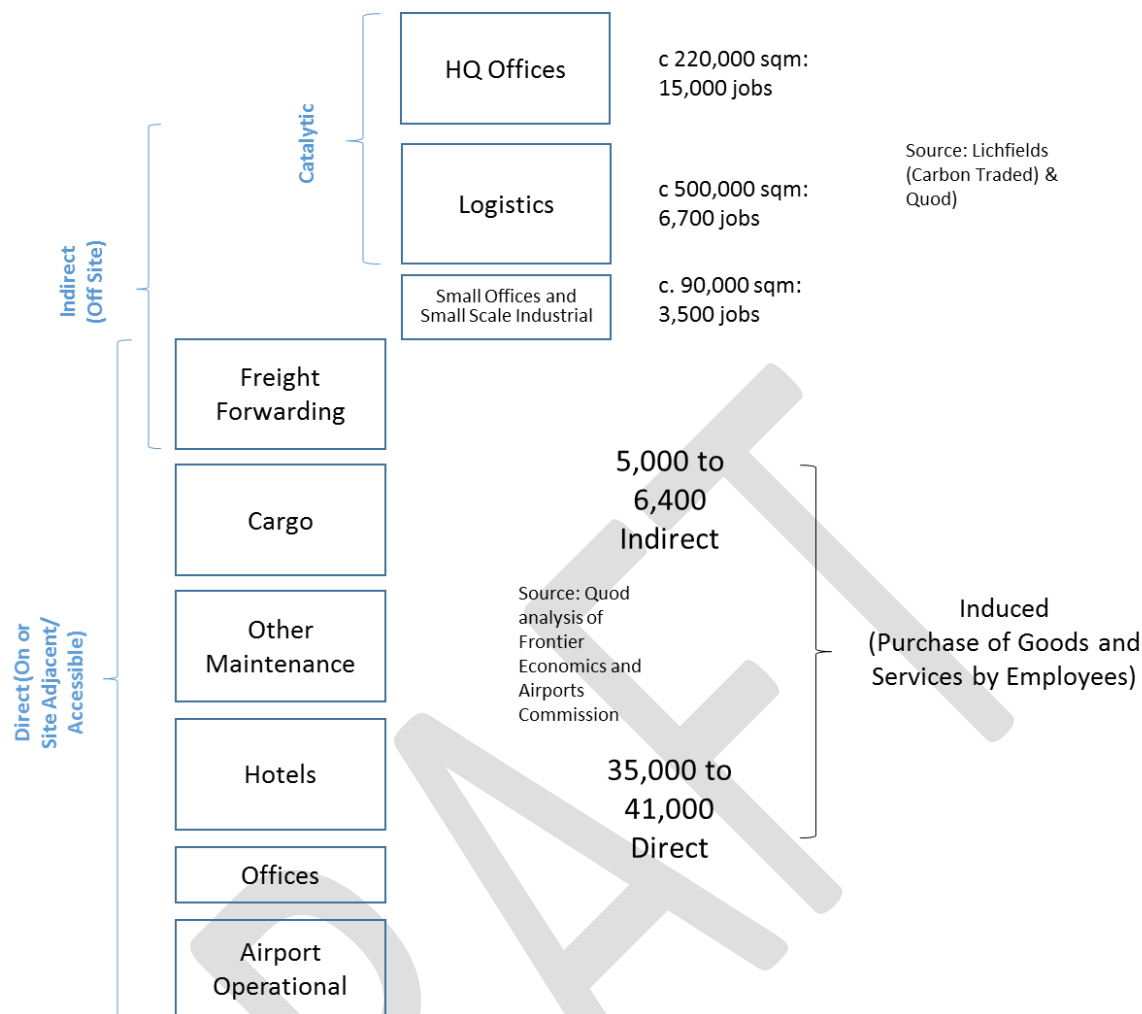
- 3.2 This indicates that a large share of increased demand for employment floorspace will be in the Transportation and Storage sector, in B-use classes (particularly B8 but also B1 and B2). This will also have particular locational requirements, depending on the sub-sector it falls within.
- 3.3 A previous analysis of future employment space demand was produced by Lichfields (2018). This study divides direct, indirect and induced future jobs into different types of employment use and assesses how much floorspace would be required and whether it would be on or near to the airport or within the wider sub-region:

Figure 12: Lichfields analysis of employment floorspace requirements

		Growth by 2040			On or Close	Sub-Regional
		Carbon Capped				
		Floorspace m ² / Bedrooms (GEA)	GIA/NIA	Jobs		
Hotels	4* and over	5,249	0	2,625	5,249	
	3* and under	2,489	0	830	2,489	
	All	7,738	0	3,454	7,738	
Industry and Warehousing (B2/8)	Cargo Handling	648,296	0	8,419	648,296	?
	Freight Forwarding	112,671	0	1,463	112,671	?
	Airport Catering	67,262	0	961	67,262	?
	Maintenance	27,908	22,536	479	27,908	
	Other airport-related logistics	513,871	0	6,674		513,871
	Light industrial	25,686	20,741	441		25,686
	Heavy industrial	23,959	22,761	484		23,959
	All	0	0	18,922	856,137	563,516
Offices (B1)	On-airport offices	53,440	43,153	3,596	53,440	
	Offices in airport supply chain	108,966	87,990	7,333	108,966	?
	Small-scale local offices	37,935	30,633	2,553	37,935	Town Centres
	Large-scale corporate	184,639	149,096	12,425		184,639
	All	420,453	339,516	28,293	200,341	220,112

- 3.4 Quod analysis of this approach, applied to employment growth forecasts by Frontier Economics and the Airports Commission, indicates how new jobs would fall within direct, indirect and induced categories:

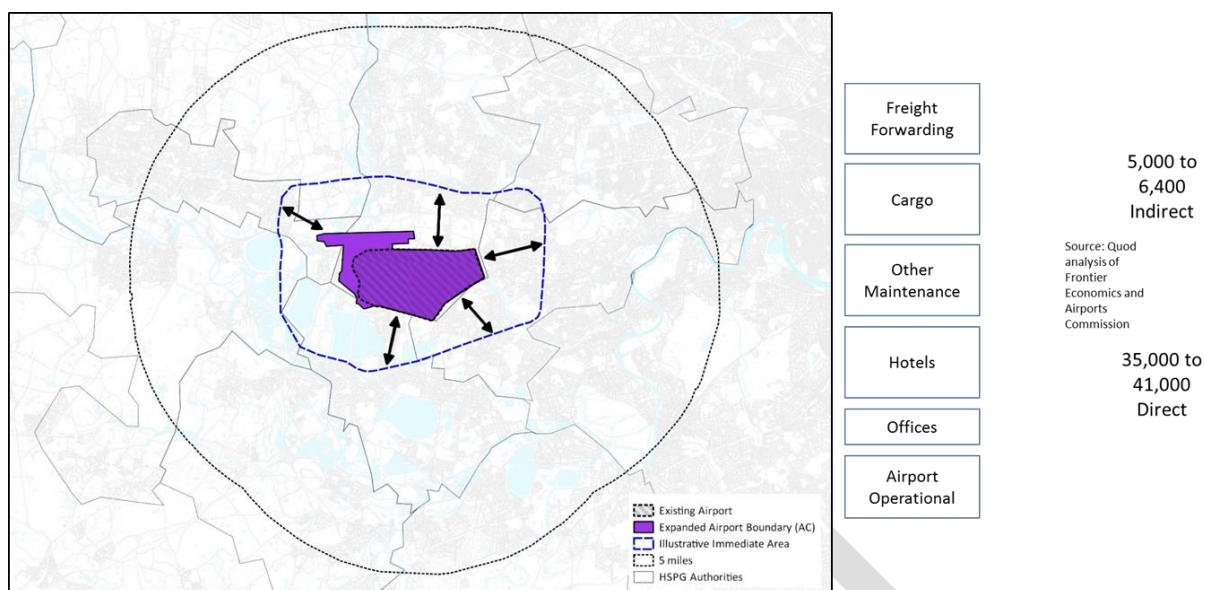
Figure 13: Indicative sectoral employment floorspace breakdown



Accommodating employment – direct jobs

- 3.5 This indicates how the locational requirements for increased employment floorspace depend on their relationship to the airport and whether they are direct, indirect, induced or catalytic (jobs created by the wider role of the airport in the regional economy in attracting investment). Direct jobs require proximity to the airport, either within, or a short distance from the airport boundary (dependent also on the directness of transport access). For example, airport-related hotels require quick and convenient access to terminals in order to serve airport users, as do directly airport-related offices (such as those supporting airline activity).
- 3.6 A key part of accommodating this direct employment on or near the airport will be the masterplanning process of the expanded airport and its relationship to surrounding areas undertaken by HAL as part of its Development Consent Order (DCO) application. This will be a key element of ensuring the new airport integrates with surrounding areas. The airport masterplan will include space for direct employment uses such as retail, maintenance or cargo. Integrating the airport with surrounding areas will also be important for ensuring the efficient operation of direct off-airport employment such as hotels:

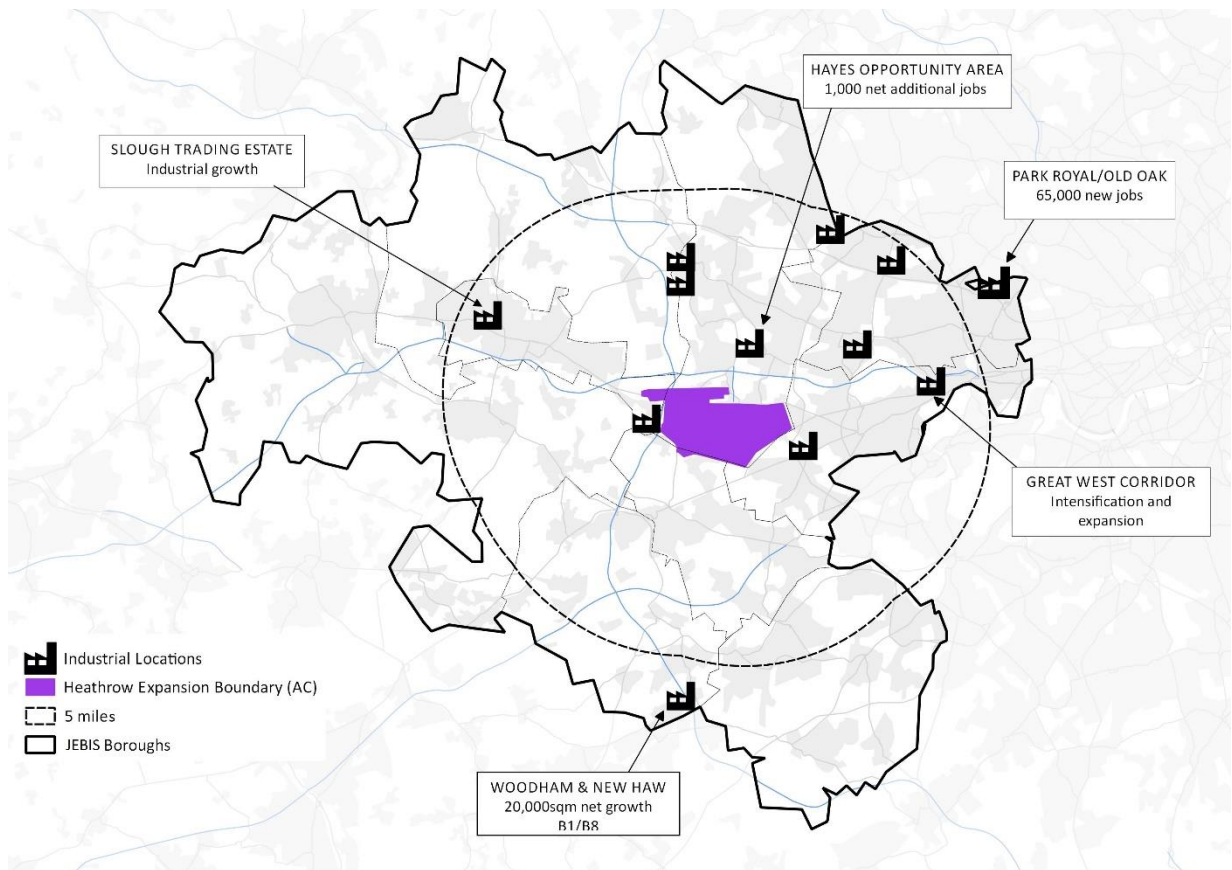
Figure 14: Spatial approach – airport masterplan and integration



Accommodating employment in the wider sub-region

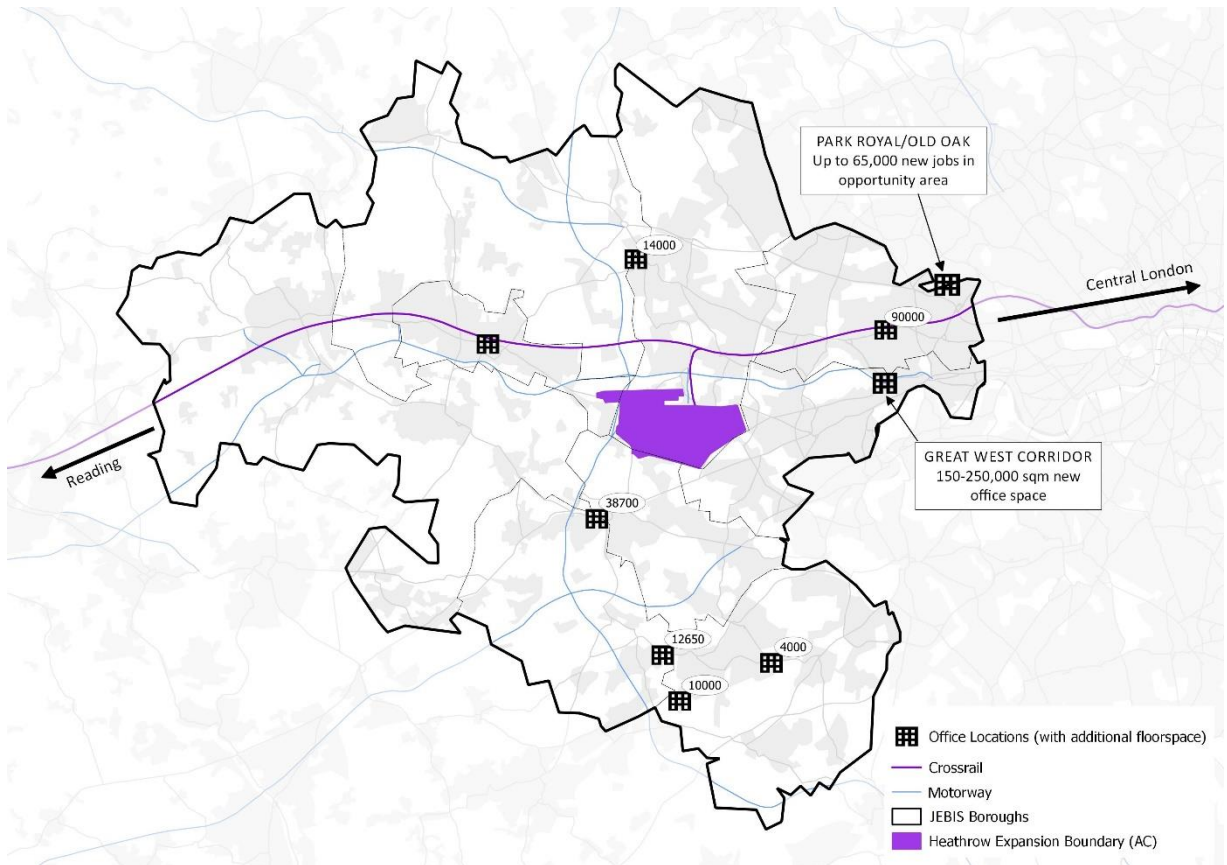
- 3.7 Indirect and induced jobs by contrast tend to have looser proximity needs; for example, while freight forwarding and directly airport-related offices require short journey times to the airport, headquarters and general logistics can function with longer journey times. However, these do have other requirements, such as good transport links to the airport.
- 3.8 There are opportunities within the Core Area and the wider Sub-Region to accommodate employment floorspace demand as a result of Heathrow expansion. There are numerous employment centres specialising in different sectors such as offices or logistics within the Core Area. The authorities in the Core Area have through their local plans and their economic development strategies also identified locations for economic development and expansion, which this study has explored. These provide options and opportunities for the HSPG to create strategies and policies to plan for employment growth.
- 3.9 Industrial locations are particularly concentrated in west London, although important locations outside of London include Poyle Industrial Estate, Slough Trading Estate and Woodham and New Haw, which are located close to road and motorway links to Heathrow. Local authorities and the GLA are planning growth at several key locations, including intensification and expansion at the Heathrow Opportunity Area and other London Opportunity Areas.

Figure 15: Indicative industrial locations and planned growth



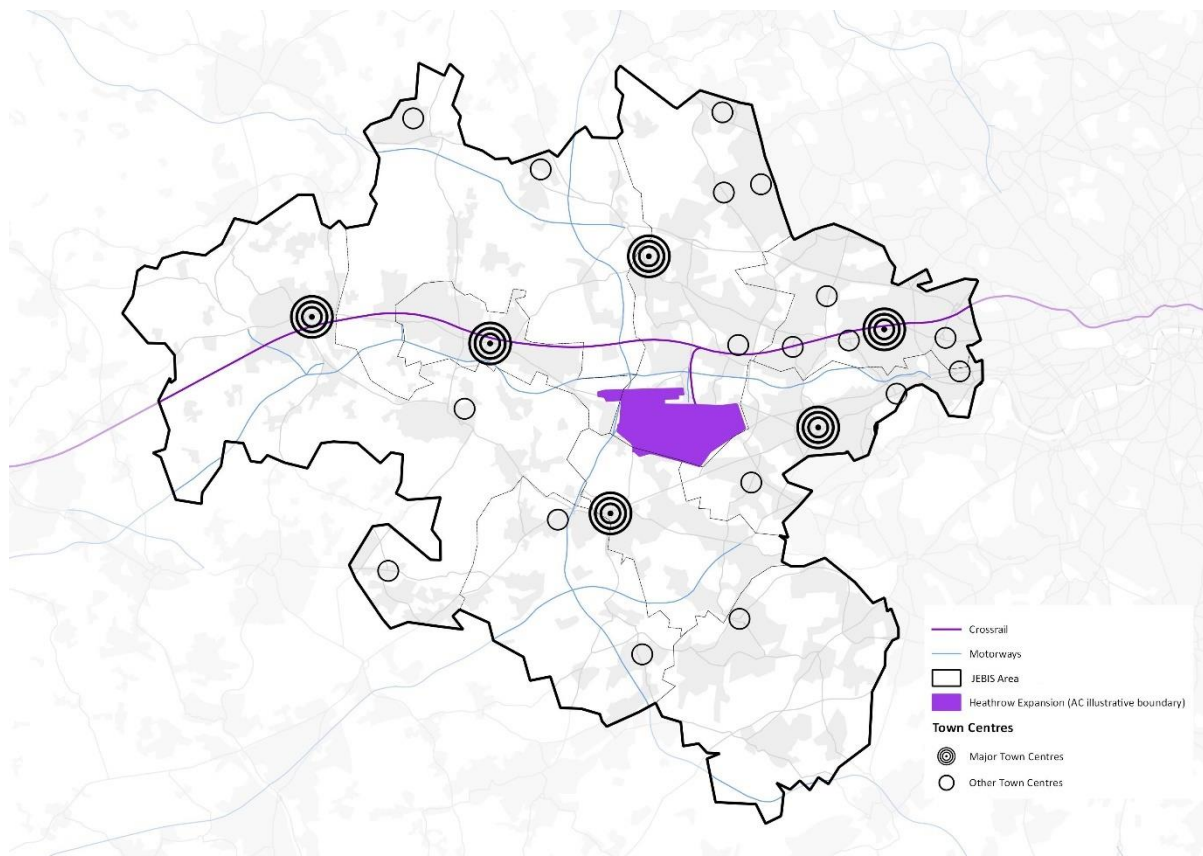
3.10 Office locations in the Core Area include major town centres as well as office parks in edge-of-town locations, with expansion already planned in several. There are also key office locations outside of the Core Area but well-located along transport routes to Heathrow. For example, Reading and Central London will both be linked to Heathrow by Crossrail from 2019:

Figure 16: Indicative office locations and planned growth



- 3.11 Town centres are also important growth points in the JEBIS area. Town centres have potential to capture indirect, induced and catalytic employment resulting from Heathrow expansion, particularly in services. Town centres range from local-scale centres to major district and metropolitan town centres. Vibrant town centres are a planning aim at local, regional and national level, with potential for authorities to consider further policies to capture and accommodate growth:

Figure 17: Town centres



3.12 Analysis of authorities in the JEBIS Core Area and the Wider Sub-Region indicates different local economic roles and functions, with some specialising in office locations and others with large industrial stock. Taken together, these present a range of opportunities for accommodating growth as a result of Heathrow expansion.

Table 2: Local authority economic roles and functions – Berks, Bucks and Surrey authorities

Authority	Office		Industrial		Comments
	Function	Stock (VOA 2016)	Function	Stock (VOA 2016)	
Windsor & Maidenhead	Supporting Centres, Central Berks: Maidenhead Windsor	c. 410k sqm	Smaller Estates: Central Berks	c. 310k sqm	Good core office offer. Industrial capacity limited and constrained.
Slough	Supporting Centre: E Berks	c. 400k sqm	Main Centre	c. 1.2 million sqm	Good quality office capacity and availability. Industrial supply major but constrained.
South Bucks	Local Centre: Bucks	c. 140k sqm	Smaller Estates	c. 180k sqm	Supply/capacity constrained

Spelthorne	Supporting Centre	c. 200k sqm	Smaller Estates:	c. 322k sqm	Reasonable recent office performance in Staines and pipeline. Limited logistics, small industrial
Elmbridge	Local Centre	c. 251k sqm	Smaller Estates	c. 340k sqm	Business park/industrial, e.g. Brooklands and small town centre offices. Poor PT accessibility to Heathrow
Runnymede	Supporting centre	c. 283k sqm	Smaller Estates	c. 259k sqm	Heathrow facing office and industrial in NE of district (Egham). Strong service economy.
Reading	Main Centre: C Berks	c. 550k sqm	Main Centre: C Berks	c. 700k sqm	Office Capacity and Pipeline (Western Rail Link/Crossrail)
Bracknell Forest	Supporting Centre: C Berks	c. 400k sqm	Smaller Estates: C Berks	c. 330k sqm	Not 'core' Heathrow
Wokingham	Supporting Centre: C Berks	c. 430k sqm	Medium Centre: C Berks	c. 450k sqm	Not 'core' Heathrow
Chiltern	Local Centre: Bucks	c. 120k sqm	Smaller Estates: Bucks	c. 210k sqm	Supply/capacity constrained
Aylesbury Vale	Local Centre: Bucks	c. 170k sqm	Main Centre: Bucks	c. 900k sqm	Significant B2/B8 allocation/surplus
Wycombe	Supporting Centre: Bucks	c. 390k sqm	Main Centre: Bucks	c. 750k million sqm	Supply/capacity constrained
Guildford	Supporting Centre	c. 305k sqm	Smaller Estates	c. 383k sqm	Strong core town centre and business park offer and pipeline
Woking	Local Centre	c. 204k sqm	Smaller Estates	c. 353k sqm	Not currently 'core' Heathrow, local market
Surrey Heath	Local Centre	c. 162k sqm	Smaller Estates	c. 325k sqm	Not 'core' Heathrow
Waverley	Local Centre	c. 131k sqm	Smaller Estates	c. 263k sqm	Supply/capacity constrained

Table 3: Local authority economic roles and functions – West London authorities and centres

Location		Office		Industrial		Comments
	Function	Stock (VOA 2016)	Function	Stock (VOA 2016)		
Hillingdon	Large office market. Suburban and Heathrow-related office	c. 633k sqm	Important SILs and Heathrow-related warehousing. Large warehousing and logistics sector.	c. 1 million sqm		Important industrial and logistics function. Increasing office space in borough but industrial space decreasing. Some

	parks, some town centre esp. Uxbridge				new land designated, capacity for intensification. Relatively high industrial vacancy rates.
<i>Stockley Park/Hayes</i>	<i>New office park location (Stockley), some smaller offices in Hayes</i>		<i>Designated SIL. Major industrial location but some release ongoing.</i>		<i>Designated as London Opportunity Area in New London Plan. Prologis site designated LSIS, development under way.</i>
<i>Uxbridge</i>	<i>Town centre office location</i>		<i>Two major SIL sites: large industrial and logistics clusters</i>		<i>Planned expansion of town centre and office space on RAF site</i>
<i>Heathrow/M4</i>	<i>Mostly Heathrow-related</i>		<i>Heathrow-related, part of wider Heathrow Opportunity Area</i>		<i>Key airport and surrounds masterplanning issue</i>
Hounslow	Large office market, esp. town centres and office park	c. 650k sqm	Large stock, strong Heathrow-related sectors	c. 1.3 million sqm	Strong Heathrow-related industrial and warehousing offer. Large office market with strong Heathrow relations in west
<i>Heathrow/Bedfont/Feltham</i>	<i>Some new office park space, e.g. Bedfont Lakes</i>		<i>Mix of Heathrow-related and general industrial space</i>		<i>Good proximity to Heathrow and strong existing office/industrial markets.</i>
<i>Great West Corridor</i>	<i>Varying office uses including media</i>		<i>SIL and LSIS locations, warehousing and manufacturing location</i>		<i>London Opportunity Area – intensification of industrial space and major new office space</i>
Ealing	Smaller stock than neighbouring boroughs	c. 370k sqm	Very large stock, especially in Park Royal	c. 2.02 million sqm	Strong industrial stock, but declining. Relatively low industrial vacancy rate. Park Royal and other industrial release planned.
<i>Park Royal/Old Oak</i>	<i>Minor function, but new space planned</i>		<i>Very large industrial centre, c. 2.3 m sqm</i>		<i>London Opportunity Area – major new jobs and homes planned. Consolidation of SIL in Park Royal.</i>
<i>Southall</i>	<i>Minor function, but new space planned</i>		<i>Large airport-related warehousing and logistics cluster</i>		<i>Strong Heathrow-linked industrial role. London Opportunity Area, regeneration underway.</i>
<i>Greenford/Perivale</i>	<i>Minor</i>		<i>Large industrial stock, servicing central London</i>		<i>Large but less Heathrow-related industrial centre, some release in recent years</i>

4 Conclusions and next steps

- 4.1 This report has examined the implications of employment growth as a result of Heathrow expansion on labour markets and employment property markets. Heathrow expansion will create approximately 48,000 jobs, which will be split between direct, indirect and induced employment, and which will predominately be located close to the airport in Hillingdon and Hounslow.
- 4.2 This employment expansion will create employment opportunities for local residents, and it is likely that most jobs will be filled by residents of the Core Area. Baseline population growth and other demographic changes will mean that there will be considerable capacity within local labour markets in the Core Area to fill new jobs. Employment expansion will also lead to demand for employment floorspace, particularly in areas close to the airport and particularly for industrial/logistics and office space. There are a range of opportunities within the Core Area to accommodate this growth.
- 4.3 A key purpose of the HSPG is to allow participating authorities to examine sub-regional planning needs resulting from Heathrow expansion. While the JEBIS will further examine infrastructure needs and opportunities in Stage 5, it will ultimately be the role of the authorities individually and collectively to decide what policies to pursue. This report suggests that employment impacts as a result of Heathrow expansion will provide opportunities for authorities to maximise the positive impacts of new jobs. It has also suggested areas where authorities can explore policies to manage growth and maximise opportunities, such as building skills and training or planning for employment land. This suggests that the HSPG should be a forum to explore future options and decisions for planning for employment growth.