UPDATE REPORT

JOINT EVIDENCE BASE AND INFRASTRUCTURE STUDY

AUGUST 2019 – VERSION 1.1

Heathrow Airport Limited & Heathrow Strategic Planning Group

Contents

1 Introduction

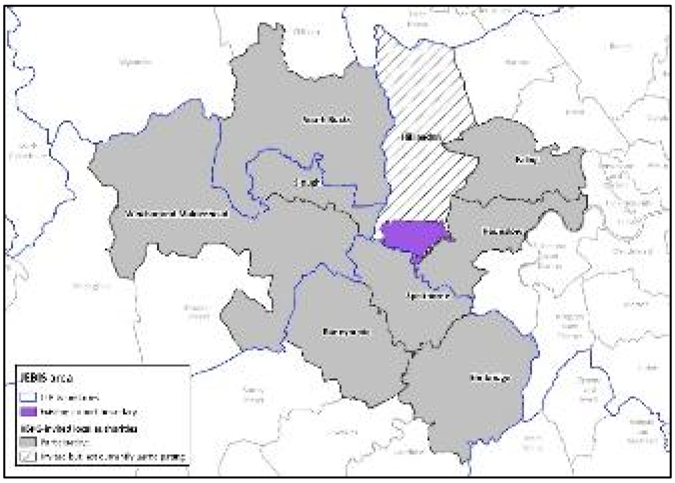
1.1 A Joint Evidence Base and Infrastructure Study (JEBIS) was produced in 2018 for the Heathrow Strategic Planning Group (HSPG) and Heathrow Airport Limited (HAL) by Quod and Arup. The report was intended to provide background research to inform joint working associated with a potential Development Consent Order (DCO) application for the expansion of Heathrow Airport. It was agreed that the JEBIS would continue to be a working document and be updated from time to time to respond to more information becoming available about Heathrow's proposals, changes in baseline information and changes in policy.

1.2 This first addendum (referred to as version 1.1), produced by Quod, includes updated projections commissioned from Oxford Economics. These apply interim employment projections produced for the current Airport Expansion Consultation undertaken by Heathrow Airport Limited (HAL) to their background regional economic model which provides projections of total employment, workforce and households in the area around the Airport. It then goes on to consider these projections against the Government's own population projections, methodology for identifying housing targets for planning purposes and London Plan targets. This report should be read alongside the suite of earlier JEBIS reports (now referred to as version 1.0), and particularly that for Stage 4, which contained the previous round of projections and targets.

1.3 The findings and conclusions in this report represent the views of consultants based on model outputs as described in the text. They were not prepared as part of the evidence base for any current or draft local plans, although Authorities may use them to inform their evidence base where relevant and to support strategic plan making.

1.4 The intention of the Study was to provide an evidence base for the study area, in the context of the wider region and sub-region, concerning the potential impacts of the expansion of Heathrow Airport. A Study Area was defined in partnership with the HSPG group, following the Planning Practice Guidance approach to defining commercial property markets and housing market areas. The Core Study area is shown in Figure 1, below:

Figure 1: Core Study Area



1.5 The Study also identifies other spatial areas for assessment. This included a wider sub-regional area incorporating the Elizabeth Line West sub-area in the Draft New London Plan (2018) and the Thames Valley Berkshire, Buckinghamshire Thames Valley and M3 LEP areas. It also, where appropriate, considered other market areas including current labour market catchment areas, and property market areas for logistics and offices.

1.6 The evidence base looked principally at potential impacts on the local economy, labour market and associated demand for employment land and housing over the period of airport expansion. The Airport Masterplan submitted with the DCO will provide capacity for some of the employment floorspace but there will also be impacts on the wider area. It also assessed associated infrastructure requirements.

1.7 It was not intended to provide a planning framework for the Core Study Area authorities. The work was intended to be 'non-spatial' in that it did not make any specific recommendations on the distribution of any growth – which is a decision for the authorities (and the proposed Joint Spatial Planning Framework) arising from the JEBIS and other evidence. Following the production of the JEBIS suite of reports the authorities are currently in the early stages of developing their approach to joint planning.

1.8 The JEBIS was a five-stage study. Stages 1 and 2 defined the economic development scenarios for the JEBIS Core Study Area, bringing together current projections with those for Heathrow to produce combined scenarios, which enabled potential labour and property demand to be identified. Stages 3 and 4 involved testing the implications of these scenarios for their economic impacts and the planning of the local area. Stage 5 identified what infrastructure is planned and might be required based on these implications. Finally, this was drawn together in a further 'Summary Report and Possible Implications for Strategic Planning' (October 2018). The JEBIS will be further updated as the Masterplan process progresses to ensure that the implications of the DCO application and Masterplan are evidenced on a joint basis to support wider strategic planning.

2 Updated Projections

Projections and Forecasts Used in Joint Evidence Base (JEBIS) Reports

2.1 The initial JEBIS reports used a range of evidence to identify potential effects of the expansion of Heathrow on the area. This included an assessment of the content of all of the known baseline data and previous impact assessments relating to the Airport, and a wider assessment of local trends in the economy and property market.

2.2 It also included two pieces of work commissioned to inform the emerging Heathrow proposals and partners' response to these. The first was a series of reports by Lichfields, comprising the Heathrow Employment Land Forecasting Study (ELFS) which projected potential future demands for different types of employment land based on relationships with growth at the Airport.

2.3 The second, to put the proposed growth of the Airport in the context of the very substantial regional (London/West London/Thames Valley) economy and its interactions with background changes in employment, population and demographics, was commissioned versions of Oxford Economics Regional Model and Local Authority District Model, comprising the baseline models and bespoke runs based on assumptions about direct employment growth at Heathrow.

2.4 This is an integrated model, based on the observed interrelationship between demographic and economic indicators. The model is 'trend based' and therefore extrapolates forward existing relationships. For the purposes of the JEBIS study it should therefore be seen as a 'do as now' model in terms of sectoral and demographic trends. It does not make assumptions on the basis of policy decisions eg. the decision on the third runway or housing targets, but its datasets are based on existing sectoral strengths and rates of demographic growth and therefore housing delivery. It does not assume that any pro-active actions are taken by HAL, or by local partners to capture growth in the area including catalytic growth.

2.5 The scope of this Update Report only covers an update of this model. It is an interim update as Heathrow's estimates of direct employment will be updated for the application for Development Consent in 2020 and feed into an updated JEBIS assessment. This update version 1.1 report should therefore be read in that context – as one part of a wider evidence base and to be further updated to reflect the eventual DCO submission.

Oxford Economics Model

2.6 The Oxford Economics forecasts are produced within a fully-integrated system. This includes a macro-economic model which makes assumptions about baseline growth based on overall economic growth forecasts and within that sectoral trends related to demographic (population and household) forecasts.

2.7 The local model makes assumptions about migration, commuting and activity rates when producing employment and population forecasts. The local authority area forecasts are predominately 'economics led' based on the assumption that migration (i.e. net changes in people moving to an area either nationally or internationally) is shaped by employment growth The methodology also takes account of the fact that jobs in local area will also be filled by existing non-employed local residents and commuters, as well as migrants.

2.8 In simple terms the model allocates additional jobs partly to existing local residents who are not economically active (i.e. the unemployed or inactive), in-commuters or new migrants. The balance between these three groups depends on existing economic/employment rates of non-employed existing residents (so if everyone already has a job then the new jobs must be filled by commuters or migrants) and existing commuting patterns and the balance from migrants. The population and employment forecasts are inter-linked, so if more people are attracted into an area this will have has implications for the employment forecasts via demand for local services (education, healthcare, retailing, leisure etc.). The model is interlinked as developments in one local area affect another, so the models solve simultaneously.

2.9 The inputs to the bespoke model runs are the direct employment forecasts broken down by sector and location. The model then calculates indirect and induced employment by Local Authority and identifies where those taking the jobs would live and the impact on (among other things) commuting and household numbers.

2.10 In order to provide these inputs Quod modelled the likely sectoral breakdown of jobs based on the Heathrow Employment Survey and official data (See Stage 2 report). The direct jobs were then split between Hillingdon and Hounslow boroughs on the basis of the current split in air transport related jobs, again based on ONS data.

2.11 It was agreed that two scenarios would be run, one based on the HAL forecast of direct employment and one based on the Airport Commission. This was on the basis that the identification of direct employment is clear in each model, including assumptions about dates. Effectively the Heathrow figure provided a 'central case' and the Airports Commission a 'high end' scenario. These are effectively seen as 'bookends' for the range of foreseeable scenarios at this time.

Updated Inputs and Model Updates

2.12 The inputs used for the original JEBIS assessment in 2018 were based on two scenarios, one based on Heathrow's assessment of employment growth produced by Frontier Economics in 2014 as part of Heathrow's *Taking Britain Further* submission to the Airports Commission, and one produced by the Airports Commission as part of its own assessments. Full background information on each of these assessments and the reasons for using them as inputs to this analysis was provided to HSPG members through a series of workshops and their use as scenarios was agreed. Details are set out in the JEBIS Stage 1 to 4 reports described above.

2.13 Heathrow is currently consulting on its updated plans through the Airports Expansion Consultation (AEC)[1] which runs to 13th September 2019. As part of the assessments for this consultation Heathrow produced an interim updated employment assessment based on more up to date assumptions on operations at the airport. This is not directly comparable to the previous Frontier model as it uses a simplified set of variables but is the current best estimate of likely employment growth as a result of Heathrow expansion[2]. This will be further updated in 2019 to inform the final Development Consent Order submission in 2020.

[1] https://aec.heathrowconsultation.com/?gclid=CjwKCAjwmtDpBRAQEiwAC6lm4_UcZVpJWc-EfxLXY-pDjlja8yRCE19pySVhrS5G8sN5G9e0CD_j4xoC31cQAvD_BwE&gclsrc=aw.ds

[2] Note that this does not include 'catalytic' employment, broadly defined as major businesses who may choose to locate close to an expanded airport, but without a significant functional relationship with the Airport

2.14 It was agreed with the HSPG group that the assessments would be updated using these figures, and retaining the Airports Commission assessment as an accelerated growth scenario. The new figures that were input to the model are shown in Figure 2 below. As with the previous assessments they were disaggregated by sector in line with ONS breakdowns which can be mapped against Heathrow employment surveys. These jobs were then assigned between host Boroughs in line with the breakdown of Air Transport jobs in baseline ONS data which inputs to the model.

Figure 2: Interim Direct Employment Assumptions (cumulative against baseline) 2019

Reference date	Employment Growth Against Baseline (2017)
2025	8,800
2030	22,100
2040	23,200

Source: Heathrow Airport Limited

2.15 These figures are then input to the Oxford Economics model which then provides projections of employment (workforce by Authority), population by authority, and households by authority. This can be compared to the baseline model to assess the net effects of the Heathrow proposals. Appendix 1 of this report includes summary numbers for each of these variables by HSPG authority for five-year time periods to 2040 and also the current baseline (2018) and the final model year (2041).

2.16 It should be noted that, consistent with Government population and household projections, and other economic forecasts, the 2019 baseline model predicted lower growth for all of the variables than the 2018 model. In relation to household growth this reflects lower projections of population – due to changes in assumptions about future births, longevity and migration – and rates of household formation. The Oxford Economics model uses official ONS data as input data and therefore follows the 2016-based household projections published since the original JEBIS report in projecting lower overall household numbers. The lower employment projections partly reflect changes in assumptions about economic growth but also these lower demographic projections. This is shown in Figures 3 and 4 below.

Figure 3: Baseline Projected Workforce Employment, HSPG Area Authorities (2018 and 2019)

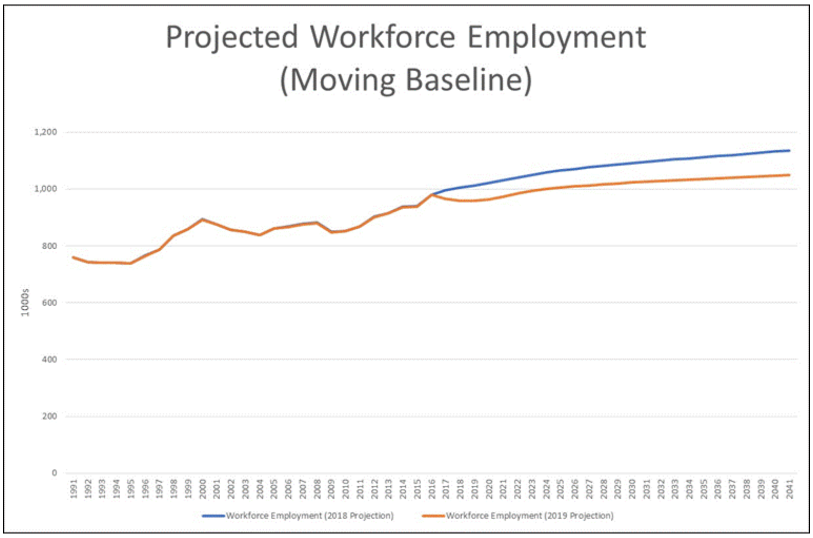
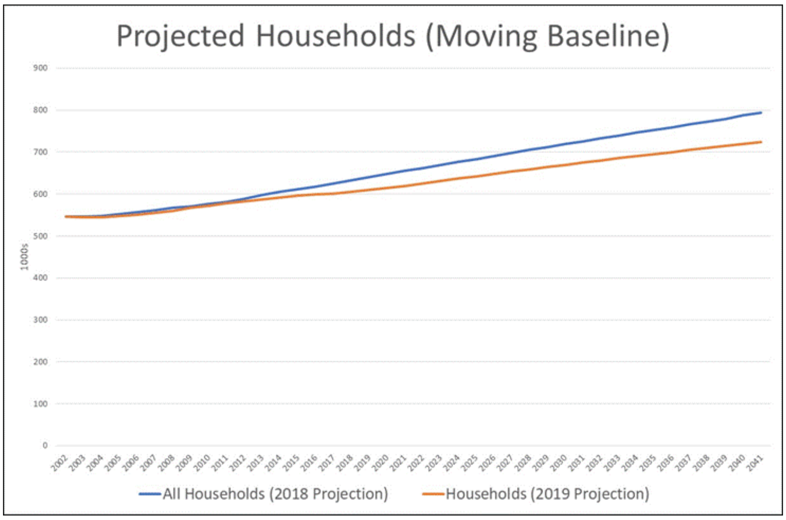


Figure 4: Baseline Projected Households, HSPG Area Authorities (2018 and 2019)



Source: Oxford Economics, 2018, 2019

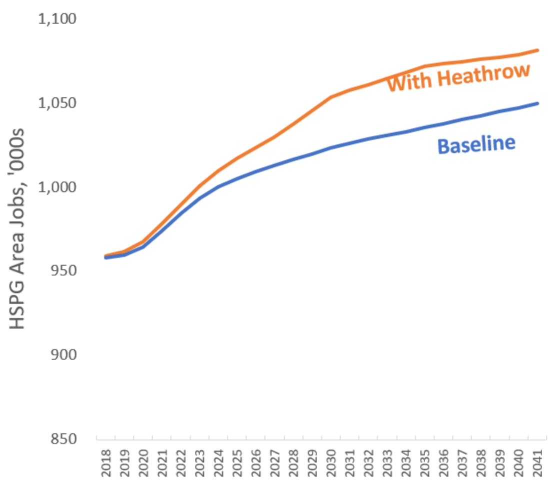
2.17 The Heathrow Preferred Masterplan which is currently being consulted on as part of the AEC is assumed to be developed in the period to 2050, extending beyond the Oxford Economics forecast period. Heathrow is updating its projections of land use requirements consistent with these time periods and these will be reflected in a further update of JEBIS to inform the application for development consent in 2020. Partners will need to review whether to commission bespoke data to extend the Oxford Economics forecasts to 2050, albeit Local Plans will usually only be looking forward 15 years and macro-economic and demographic forecasts for very long periods are notoriously unreliable. Partners will therefore need to consider whether these longer-term opportunities are better dealt with through 'top down' modelling or more focussed scenarios of potential implications.

Employment Growth

2.18 Housing market and housing need implications of Heathrow expansion ultimately arise from increased employment. Heathrow expansion will lead to uplift in employment within the Core Area above future baseline growth.

2.19 Overall, modelled growth using the Oxford Economics model indicates that employment uplift on the central case from Heathrow will consist of approximately 31,000 direct, indirect and induced jobs to 2041 within the nine JEBIS boroughs, mostly within Hillingdon and Hounslow. This is shown in Figure 5, below. This is lower than the 2018 projection (in turn based on a 2014 assessment), mainly due to the lower direct employment projection shown in Figure 2 above. Again, it should be noted that this is an interim projection and not a direct 'like for like' comparison and will be updated in the coming months and reflected in further updated JEBIS reports. It is also 'policy-off' top-down modelling of employment impacts and location which does not account for potential policy interventions that JEBIS authorities could make to attract or direct growth to particular areas.

Figure 5: Oxford Economics (2019) Modelled Employment Growth (baseline and additional, central case scenario, rounded)



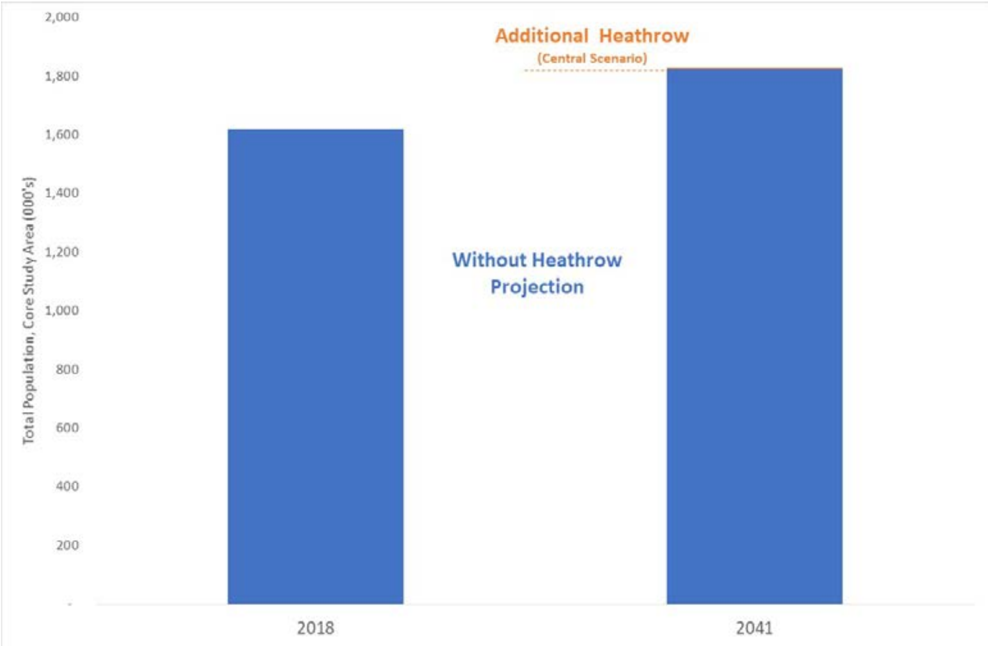
Employment growth 2018-2041	Baseline	Additional in Heathrow central case
Ealing	3,800	500
Hillingdon	19,400	18,900
Hounslow	25,200	10,700
Elmbridge	7,900	100
Runnymede	9,600	200
Slough	9,100	100
South Bucks	3,800	100
Spelthorne	3,300	200
Windsor & Maidenhead	9,000	100

Workplace-based. Direct, indirect and induced

Population and Household Growth

2.20 Over the study period to 2041, there will be baseline growth in the population and number of households within the JEBIS Core Area regardless of Heathrow expansion, see Figure 6, below. The Oxford Economics model has forecast strong baseline population growth in the JEBIS Core Area between 2019 and 2041, rising from 1.62 million residents in 2018 to 1.82 million residents in 2041. This compares to a rise to 1.88 million in the 2018 projection[3].

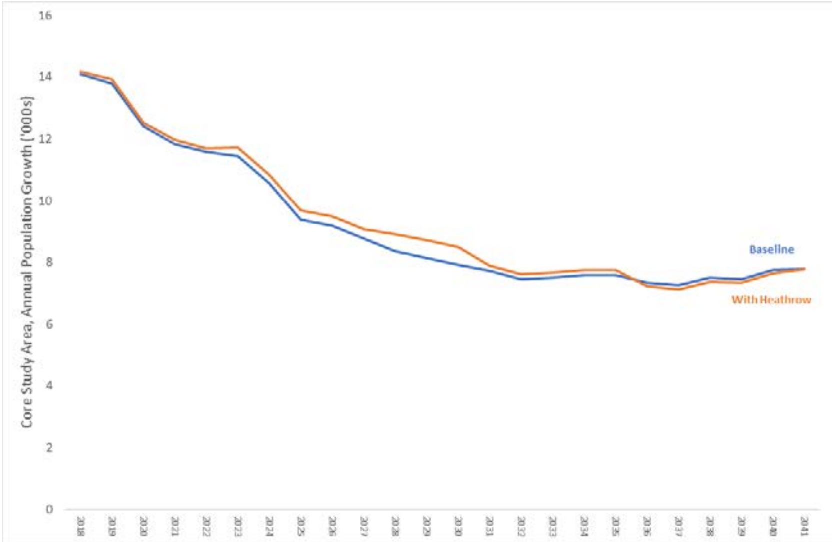
Figure 6: Oxford Economics (2019) modelled population growth (baseline and additional, central case scenario)



2.21 In the central employment case scenario, the additional growth as a result of Heathrow expansion will only lead to a very small additional uplift in population growth over this period, amounting to 3,900 residents, compared to c. 10,000 residents in the 2018 assessment. In terms of annual population growth, the difference between the baseline and the "with Heathrow expansion" scenarios is negligible, and in both cases annual population growth rates are expected to peak in 2019 and gradually fall, as shown in Figure 7, below, with Heathrow expansion leading to a small uplift following the opening of the expanded airport.

[3] See JEBIS Stage 4 Report, October 2018)

Figure 7: Oxford Economics (2019) modelled annual population growth



2.22 A similar uplift is forecast in terms of household growth in the JEBIS Core Area. As with population growth, there is forecast to be strong baseline growth in the number of households up to 2041, with 117,900 additional households in the baseline scenario and 119,500 with Heathrow expansion, as shown in Figure 8, below. Including Heathrow expansion, this would amount to on average approximately 5,200 new households per year over the study period. The total annual growth is significantly lower than the 7,000 households per year in the 2018 projections as shown in Figure 9 below.

Figure 8: Oxford Economics modelled number of households (2018 to 2041)

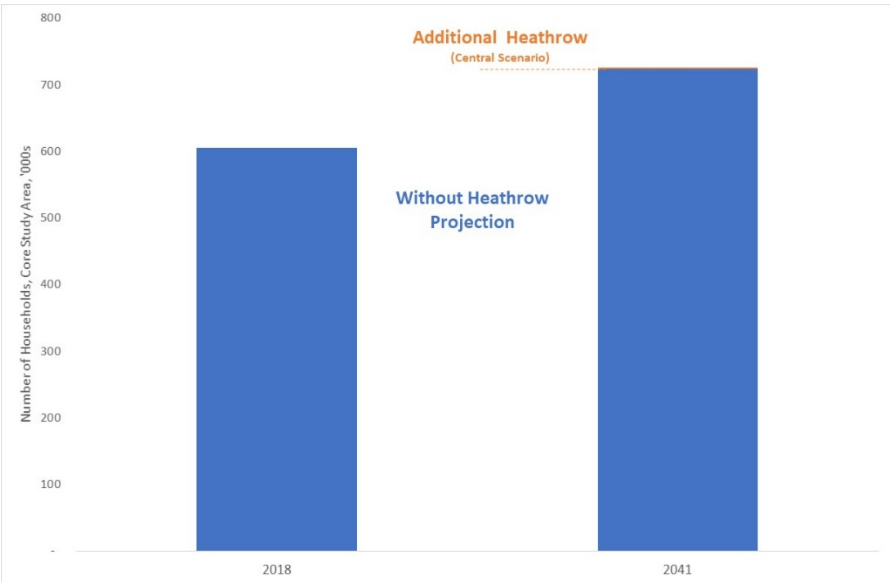
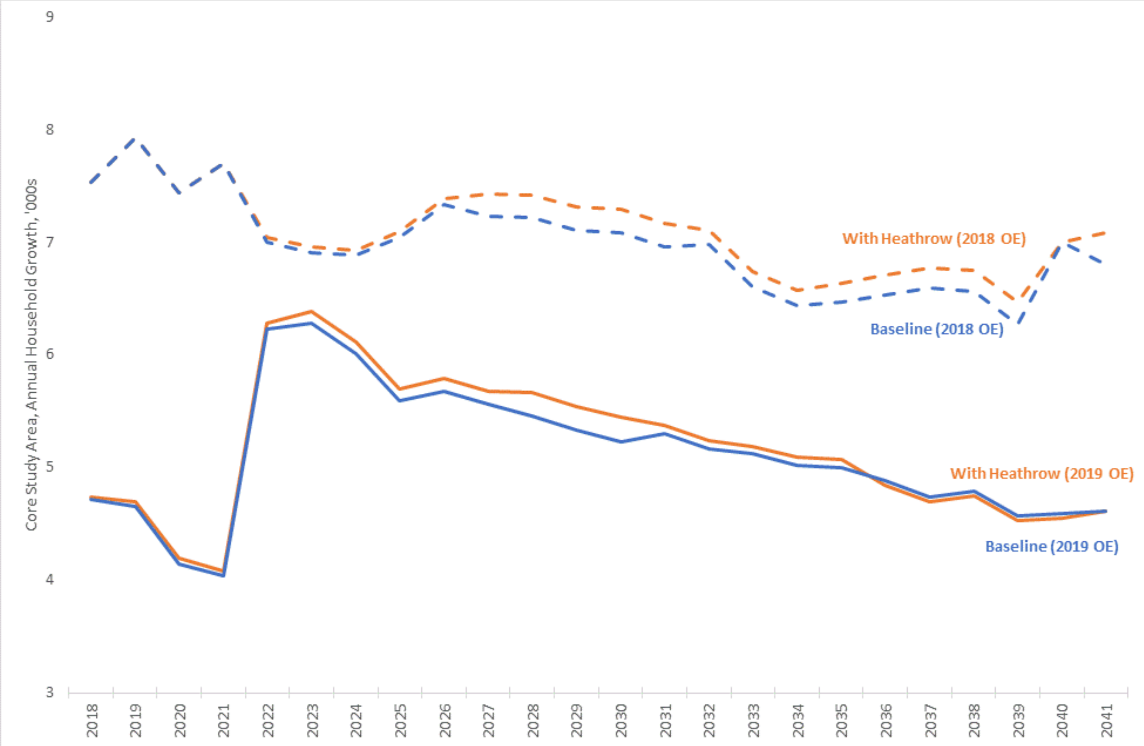
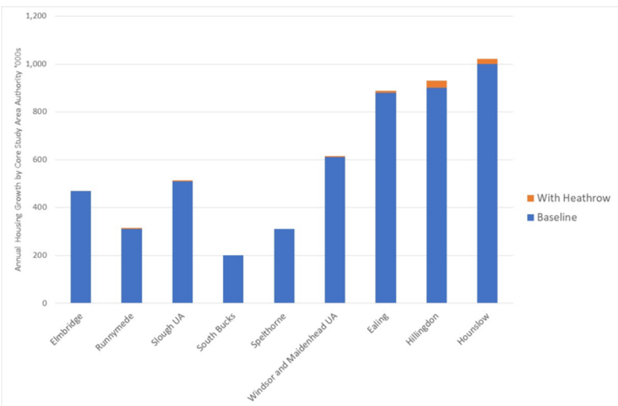


Figure 9: Oxford Economics modelled annual household growth (2018 to 2041), 2018 and 2019 Projections



2.23 The breakdown of this annual household growth by district, see Figure 10, below, shows that the effect of Heathrow expansion will only be noticeable in Hillingdon and Hounslow and to a lesser extent Ealing. However, even within these districts this additional Heathrow-related growth represents a very small fraction of projected baseline annual average household growth, representing an additional 30 households per year in Hillingdon over the baseline annual increase of 900. Total additional growth in households as a result of the Heathrow central case is around 1,600 across the study area by 2041, representing less than 3% of total projected growth. The numbers in the table are rounded. The total annual household growth per annum across the Core Study area is approximately 70. For all non-London authorities, the change is negligible. No significant impacts on household numbers related to Heathrow are expected beyond the Core Study area.

Figure 10: Oxford Economics modelled average annual household growth by district, 2011-41 (Rounded)

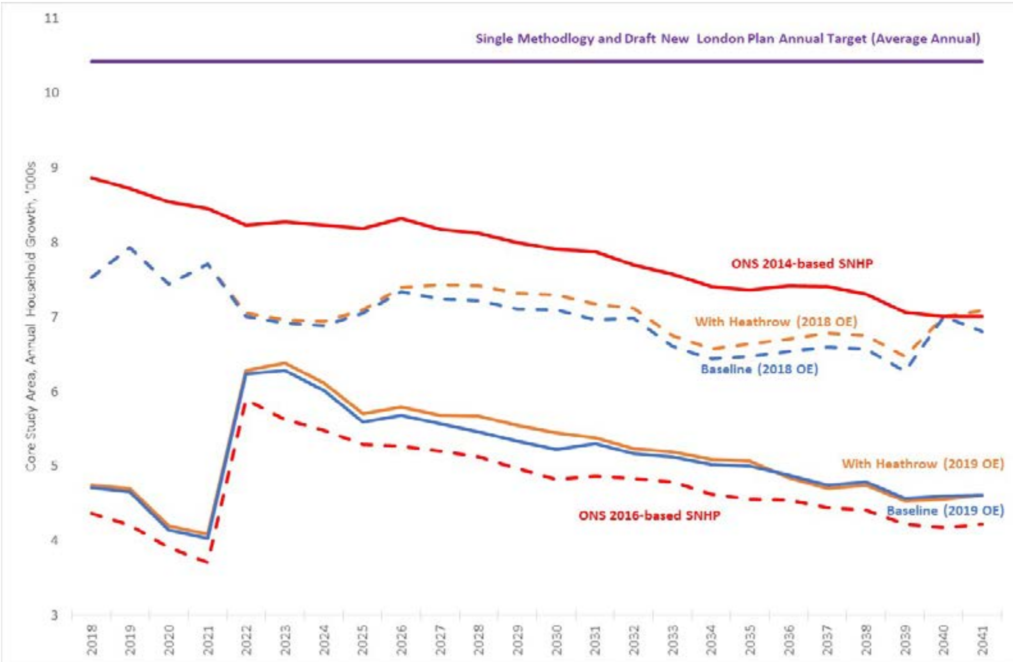


Annual Household Growth 2018-2041 (Rounded)	Baseline	Additional in Heathrow central case
Ealing	880	<10
Hillingdon	900	30
Hounslow	1,000	20
Elmbridge	470	<5
Runnymede	310	<5
Slough	510	<5
South Bucks	200	<5
Spelthorne	310	<5
Windsor & Maidenhead	610	<5

Comparing Forecasts – Other Forecasts and Planned Housing

2.24 Household projections produced by the ONS for the JEBIS authorities can be compared to the Oxford Economics projections. This is shown in Figure 11, below. Since the 2018 Oxford Economics projections were produced for the original JEBIS study, the ONS has published its 2016 Household Projections for local authorities. As anticipated in the Stage 4 report this has seen a significant fall in projections of annual household growth. The new (2019) Oxford Economics forecasts have fallen with these projections and are now slightly higher than the official Government projections. However, the 2014-based projections, which were significantly higher than both, remain the basis for the 'Standard Method' for assessing housing need and therefore the starting point for Local Plans.

Figure 11: Annual household growth forecasts compared (Oxford Economics and ONS)

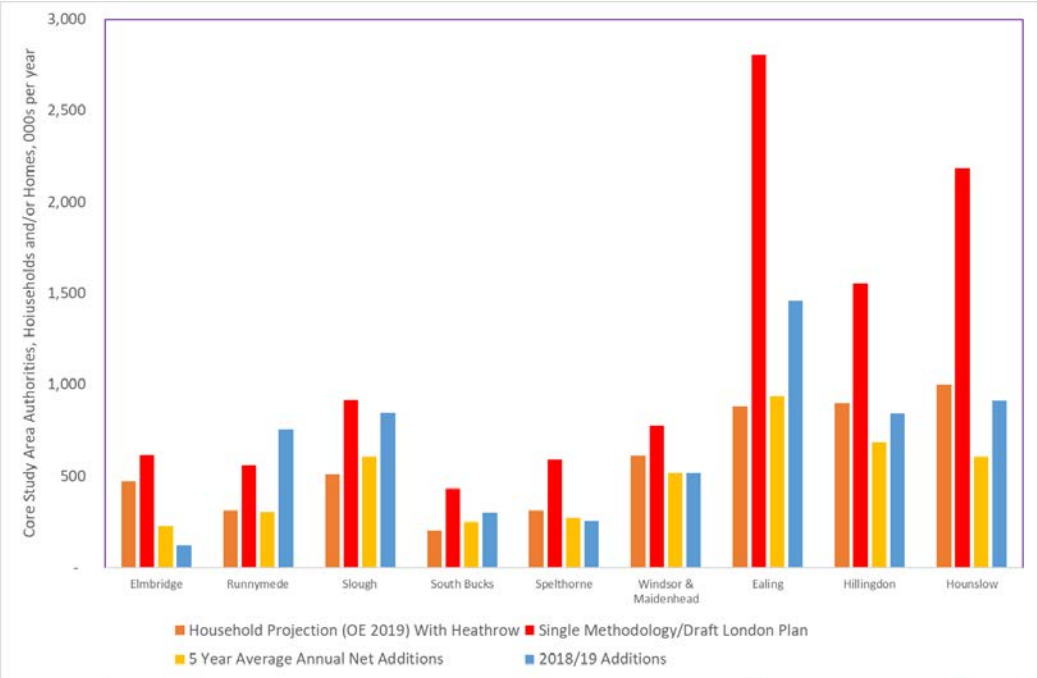


2.25 The 'Standard Method' was formally adopted in February 2019 and is incorporated into Planning Practice Guidance section on Housing and Economic Needs Assessment. It remains very similar to the draft guidance which informed the Stage 4 JEBIS report with the resulting 'need' analysis remaining largely unchanged to that in the original report.

2.26 As noted in that report housing targets for the London Boroughs are set by the Greater London Authority (GLA) based on overall London housing need and borough capacity. The new Draft London Plan (2017) has been subject to an Examination in Public and the GLA has published a consolidated version with proposed minor suggested changes. The proposed housing targets set out in Table 4.1 of the Draft New Plan have not been changed however and therefore remain relevant, although should be reviewed following the Examiners' report.

2.27 The Oxford Economics central scenario forecasts of annual household growth by authority area (with Heathrow expansion) therefore remain very significantly below both the Standard Methodology (based on the 2014 ONS projections) and London Plan targets. The fall in the Oxford Economics projections has also brought them closer to (and in some cases lower than) recent completion rates. This is shown in Figure 12, below. Again, such rates should be monitored and updated in future iterations of JEBIS.

Figure 12: Projected Annual Household Growth by Authority Area (2018 to 2014) vs. London Plan or Single Methodology Annual Figures, and 2017/18 & 5-year Average Net Additions



Source: Oxford Economics, Quod, Draft New London Plan, MHCLG Live Tables

2.28 This further supports the conclusion in the original report that while Heathrow expansion will lead to some increased housing need with the Core Area, this is a small proportion on top of the baseline housing need that will arise regardless. Furthermore, JEBIS authorities will already need to plan for high housing need under the Single Methodology or the London Plan regardless of Heathrow expansion, and the Oxford Economics modelling suggests that the airport does not give rise to a need to increase housebuilding targets.

Appendix 1:

Oxford Economics Summary Projections

Employment (Workforce Jobs '000s)

Baseline

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	75	72	72	75	77	78	79	79
Runnymede	64	66	68	71	73	74	76	76
Slough UA	87	89	90	94	96	97	98	98
South Bucks	44	45	46	48	48	49	49	49
Spelthorne	46	41	41	42	43	44	44	44
Windsor and Maidenhead	92	87	87	90	92	94	96	96
Ealing	155	166	167	172	172	171	170	170
Hillingdon	198	211	211	220	224	227	230	230
Hounslow	178	181	183	193	198	202	206	206
Total	938	958	964	1,005	1,023	1,035	1,047	1,050

Central Scenario

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	75	72	72	75	77	78	79	79
Runnymede	64	66	68	71	73	74	76	76
Slough UA	87	89	90	94	96	97	98	98
South Bucks	44	45	46	48	49	49	49	49
Spelthorne	46	41	41	42	43	44	44	44
Windsor and Maidenhead	92	87	87	90	93	94	96	96
Ealing	155	166	167	172	172	172	171	170
Hillingdon	198	211	213	227	243	249	249	250
Hounslow	178	181	184	197	209	215	217	217
Total	938	959	967	1,017	1,053	1,072	1,079	1,081

Accelerated Scenario

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	75	72	72	75	77	78	79	80
Runnymede	64	66	68	71	73	74	76	76
Slough UA	87	89	90	94	96	97	98	98
South Bucks	44	45	46	48	49	49	49	49
Spelthorne	46	41	41	42	43	44	44	44
Windsor and Maidenhead	92	87	87	90	93	94	96	96
Ealing	155	166	167	172	173	172	171	171
Hillingdon	198	211	211	233	255	261	264	265
Hounslow	178	181	183	201	216	221	225	226
Total	938	958	964	1,027	1,073	1,091	1,103	1,105

Population ('000s)

Baseline

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	136	138	140	145	149	153	156	157
Runnymede	85	87	89	93	96	99	102	103
Slough	146	150	154	160	163	167	170	171
South Bucks	69	71	72	74	75	77	78	78
Spelthorne	98	100	102	105	108	111	113	114
Windsor and Maidenhead	148	152	154	160	166	171	175	176
Ealing	344	345	350	360	366	370	375	376
Hillingdon	296	304	308	318	326	333	340	342
Hounslow	266	271	276	286	294	301	309	310
Total	1,589	1,619	1,645	1,700	1,743	1,780	1,818	1,826

Central

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	136	138	140	145	149	153	156	157
Runnymede	85	87	89	93	96	99	102	103
Slough	146	150	154	160	163	167	171	171
South Bucks	69	71	72	74	75	77	78	78
Spelthorne	98	100	102	105	108	111	113	114
Windsor and Maidenhead	148	152	154	160	166	171	175	176
Ealing	344	346	351	360	366	371	375	376
Hillingdon	296	304	308	318	327	335	342	343
Hounslow	266	271	276	286	295	302	310	311
Total	1,589	1,619	1,646	1,702	1,746	1,785	1,822	1,830

Accelerated

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	136	138	140	145	149	153	156	157
Runnymede	85	87	89	93	96	99	102	103
Slough	146	150	154	160	163	167	171	171
South Bucks	69	71	72	74	75	77	78	78
Spelthorne	98	100	102	105	108	111	114	114
Windsor and Maidenhead	148	152	154	160	166	171	175	176
Ealing	344	345	350	361	367	371	376	377
Hillingdon	296	304	308	319	329	337	344	346
Hounslow	266	271	276	286	295	303	310	312
Total	1,589	1,619	1,645	1,703	1,750	1,789	1,826	1,834

Households ('000s)

Baseline

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	54	55	56	58	61	63	65	66
Runnymede	34	34	35	37	38	40	41	41
Slough	53	55	56	59	61	64	66	66
South Bucks	27	28	28	29	30	31	32	32
Spelthorne	40	41	41	42	44	46	47	48
Windsor and Maidenhead	60	61	63	66	69	72	75	75
Ealing	125	125	126	132	137	141	144	145
Hillingdon	106	108	108	113	118	122	127	128
Hounslow	98	100	101	107	112	117	122	123
Total	596	606	615	643	670	696	719	724

Central Scenario

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	54	55	56	58	61	63	65	66
Runnymede	34	34	35	37	38	40	41	41
Slough UA	53	55	56	59	61	64	66	66
South Bucks	27	28	28	29	30	31	32	32
Spelthorne	40	41	41	43	44	46	47	48
Windsor and Maidenhead	60	61	63	66	69	72	75	75
Ealing	125	125	126	132	137	141	144	145
Hillingdon	106	108	109	113	118	123	127	128
Hounslow	98	100	101	107	113	118	122	123
Total	596	606	615	643	672	698	721	726

Accelerated Scenario

	2015	2018	2020	2025	2030	2035	2040	2041
Elmbridge	54	55	56	58	61	63	65	66
Runnymede	34	34	35	37	38	40	41	42
Slough UA	53	55	56	59	61	64	66	66
South Bucks	27	28	28	29	30	31	32	32
Spelthorne	40	41	41	43	44	46	48	48
Windsor and Maidenhead	60	61	63	66	69	72	75	75
Ealing	125	125	126	132	137	141	145	145
Hillingdon	106	108	108	113	119	124	128	129
Hounslow	98	100	101	107	113	118	122	123
Total	596	606	615	644	673	699	722	727