HARDISTY JONES ASSOCIATES
Economic Development Advisers

West Essex and East Hertfordshire Assessment of Employment Needs

Final Report

Prepared for the Cooperation for Sustainable Development Board

On behalf of:

- **East Herts District Council;**
- **Epping Forest District Council;**
- **Harlow Council; and**
- **Uttlesford District Council**

October 2017

Contents

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Executive Summary

Introduction

Hardisty Jones Associates Ltd (HJA) was appointed by Epping Forest District Council (EFDC), East Herts Council (EHC), Uttlesford District Council (UDC) and Harlow Council (HC) to provide an assessment of employment needs for the functional economic market area (FEMA) with the intention of informing future planning for strategic employment matters across the area.

The four councils are at different stages of preparation of their respective new Local Plans but are working jointly through the obligations of the Duty to Cooperate to consider strategic cross-boundary matters. This joint working is administered through the Cooperation for Sustainable Development Board.

The four core objectives for the study were to:

1. Conduct an appraisal of the EEFM 2016 to ascertain whether it is a sound foundation upon which to formulate an up-to-date assessment of employment needs for the FEMA.
2. Produce an up-to-date business as usual/'policy-off' quantitative assessment of employment needs in the FEMA using the updated EEFM 2016 and other inputs as deemed relevant.
3. Explore an appropriate and agreed number of 'policy-on' employment need scenarios. In determining these, consultants should refer to the 2015 evidence produced by HJA, as well as drawing on the emerging Local Plans and knowledge of nominated Planning Officers within the FEMA and recent economic and housing growth evidence for the sub-region or smaller geographies within. It is recognised that an on-going consultative approach is required to secure agreement to the scenario which becomes the basis on which the four local authorities plan for employment growth. It should also be appreciated that this might be a hybrid of the options formulated.
4. Based on the preferred scenario, translate assessment of employment need into the land requirement for B Class Uses across the FEMA having regard to current supply position, local economic strategy, historic take-up and market demand.

The study was undertaken in compliance with the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG).

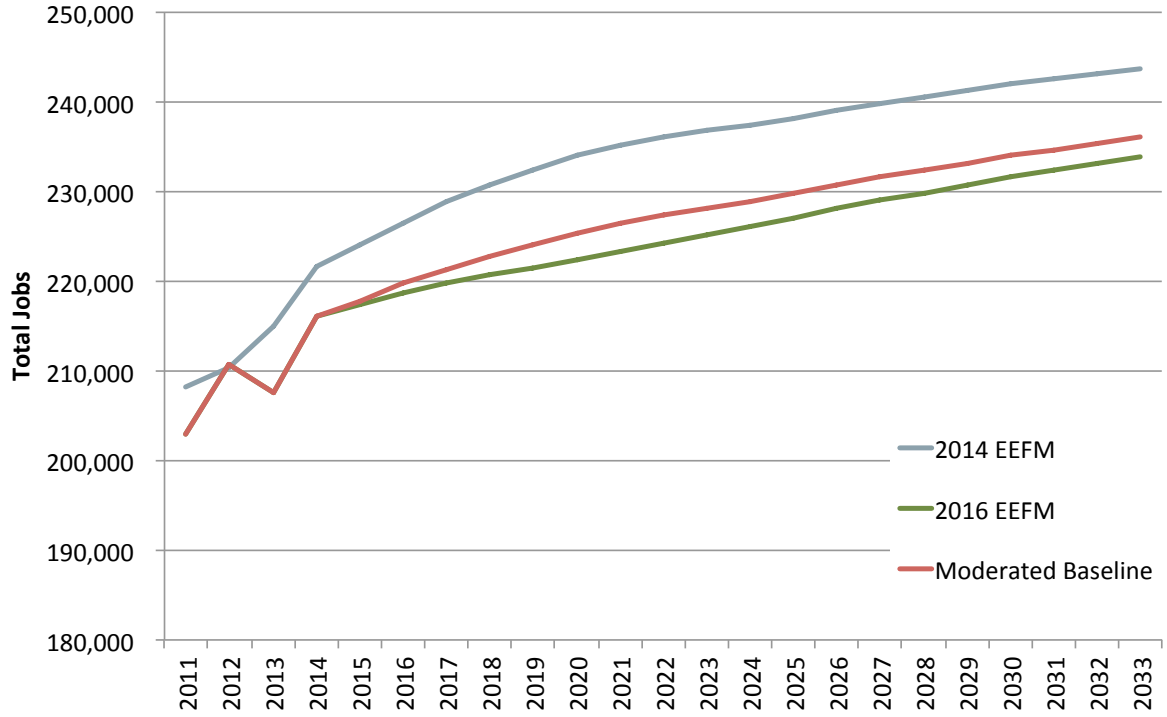
Baseline Forecasts

The East of England Forecasting Model (EEFM) provides consistent economic forecasts for the whole of the East of England region and selected other areas. The EEFM was originally developed by Oxford Economics with its first release in 2007 and regular updates to 2014. The latest 2016 release has been prepared by Cambridge Econometrics after a retendering of the contract.

HJA reviewed the latest 2016 EEFM and identified a number of substantive changes in the results within the West Essex and East Herts FEMA when compared to the 2014 EEFM. In particular, the spatial distribution of forecast employment growth was very different. There were also substantial adjustments to sector growth forecasts. Following detailed review it was agreed by the four districts that the spatial distribution of future employment change within the 2016 EEFM was inconsistent with the evidence and a moderated baseline should be constructed. This reapportioned forecast

employment growth across the FEMA in line with the 2014 EEFM. Some moderation of sectoral growth patterns was also undertaken. The conclusion of this process is a moderated baseline of 33,100 additional jobs across the FEMA over the period 2011-33. Figure 1 shows the trajectory of the moderated baseline in comparison to the 2014 and 2016 EEFM editions. Figure 2 shows the forecast employment change by district.

Figure 1 Moderated Baseline Total FEMA Jobs 2011-33



Source: HJA based on EEFM

Figure 2 Moderated Baseline – Employment (Jobs) Change by District

	East Herts	Epping Forest District	Harlow	Uttlesford	FEMA
2011-16	3,700	3,000	5,000	5,000	16,800
2016-21	2,300	2,500	700	1,300	6,700
2021-26	1,600	1,900	400	400	4,300
2026-33	1,800	2,400	600	500	5,300
2011-33	**9,400**	**9,800**	**6,700**	**7,200**	**33,100**

Alternative Scenarios

A review of evidence was undertaken to ascertain whether alternative scenarios should be considered.

Analysis of the projected labour supply, emerging from the July 2017 Strategic Housing Market Assessment OAN Update for West Essex and East Herts indicates a level of workforce growth far beyond that required to meet the demands of the moderated baseline. To maintain a balanced labour market, with an appropriate level of unemployment and commuting patterns in line with

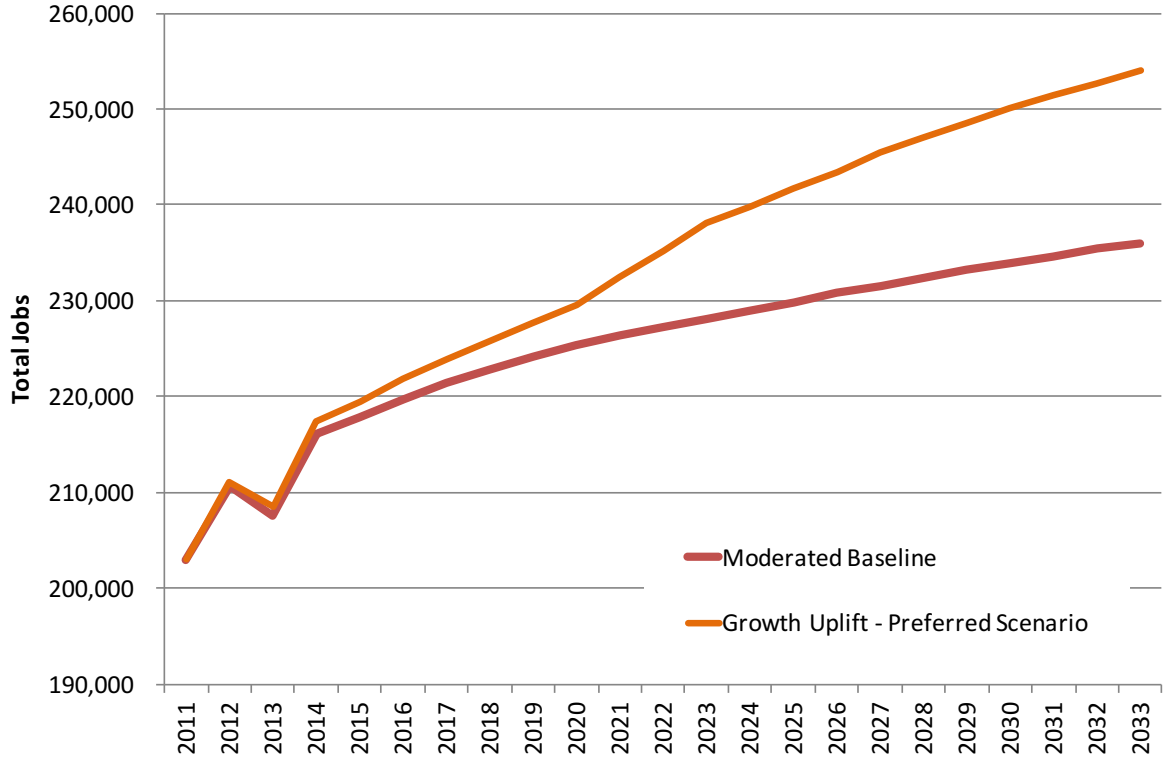
2011 rates, would necessitate a further 20,000 jobs over and above the moderated baseline. On this basis it is appropriate to consider whether higher employment growth scenarios could be developed.

Four major drivers of additional job growth, over and above the moderated baseline were identified from the evidence review:

- The relocation of Public Health England to Harlow, creating an additional 3,250 jobs in the area above the moderated baseline.
- The planned growth of Stansted Airport, creating an additional 6,750 jobs in the area above the moderated baseline.
- The economic development efforts at Harlow, including the Enterprise Zone, creating an additional 2,500 jobs in the area above the moderated baseline.
- The service sector employment implications of higher population projections, creating an additional 5,400 jobs in the area above the moderated baseline.

In aggregate the four growth drivers were identified as having the potential to deliver 17,900 jobs in addition to the moderated baseline. A preferred scenario was developed and agreed including these four drivers, delivering a total jobs growth of 51,000 over the period 2011-33. This is illustrated in figures 3 and 4.

Figure 3 Preferred Scenario



Source: HJA

The preferred scenario remains 2,100 jobs below the level required to balance the labour market. However, given that there are some uncertainties associated with jobs forecasting and the long-term nature of Local Plans, such a scale of additional provision over the FEMA area up to 2033 does not

represent any significant short-term difficulties for emerging Local Plans. In reality the additional provision may be accommodated through increased job densities and / or windfall development. The FEMA authorities are committed to working together to ensure that this additional provision will be accommodated.

Figure 4 Preferred Scenario – Employment (Jobs) Change by District

	East Herts	Epping Forest District	Harlow	Uttlesford	FEMA
2011-16	3,600	2,900	4,900	7,400	18,900
2016-21	2,300	2,500	2,100	3,700	10,600
2021-26	2,200	2,300	3,500	3,000	10,900
2026-33	2,700	3,000	2,900	1,900	10,600
2011-33	**10,800**	**10,800**	**13,400**	**16,000**	**51,000**

Source: HJA *(figures may not sum due to rounding).*

Employment Land Implications

An assessment of the future B Use Class employment sites and premises requirements was undertaken. This included a consideration of the changes required to accommodate the forecast growth in the economy under the preferred scenario, as well as provision to ensure the ongoing strength of the existing economy. The analysis of future requirements considered the 2016-33 period.

Analysis of forecast employment indicated a substantial proportion of forecast job growth would lie outside the B Use Class. The largest requirement falls within the 'none and homeworking' category, encompassing both home based working and peripatetic employment. There is also forecast job growth across the A, B, C, D and Sui Generis Use Classes. Within the B Use Class the greatest growth in jobs falls within the B1a office Use Class. There is also growth in B1b, B1c and B8 requirements. Employment within the B2 Use Class is forecast to decline.

Figure 5 summarises the assessment of future requirements for the preferred scenario. This is subdivided into office and industrial classifications.

Within the office sector there is forecast to be a requirement for 77,800 sq m of new floorspace to accommodate expansion of the economy. In addition, a further 83,500 sq m of office floorspace will be required to ensure a healthy stock of premises to accommodate the existing economy. In total, a requirement for 161,300 sq m is identified. The analysis has identified that around half of this can be delivered through the reuse of previously developed employment sites. After taking this into account, and making an adjustment for choice and flexibility the remaining requirement is 86,800 sq m. This will require approximately 9-22 hectares of land over the period 2016-33, depending on the density of development. The lower figure relates to higher density town centre type development. The higher figure relates to lower density business park type development.

Within the industrial sector there is a forecast requirement for 92,800 sq m to meet the expansion of the economy. The greatest driver in this sector will be replacement provision, to ensure modern stocks to meet the needs of the existing economy. This will create a requirement for 412,200 sq m. In combination, a total requirement of 505,000 sq m is forecast. Around half of this can be met

through the redevelopment of previously used employment sites. The remainder, with an allowance for choice and flexibility is estimated at 261,500 sq m. This will require approximately 65 hectares of land over the period 2016-33.

Figure 5 Preferred Scenario - Total Estimated Future Sites and Premises Requirements (sq m GEA unless stated) – FEMA 2016-33

	Office	Industrial
Replacement Provision (A)	83,500	412,200
Net Additional Requirement (B)	77,800	92,800
Gross Requirement (C=A+B)	161,300	505,000
Delivered on Existing Employment Sites (D)	82,400	267,300
Net Requirement (E=C-D)	78,900	237,700
Flexibility Allowance (F)	7,900	23,800
Total Requirement (G=E+F)	86,800	261,500
Average Annual Requirement	5,106	15,382
Total Land Requirement	**9 – 22 ha**	**65 ha**
Average Annual Land Requirement	0.5 - 1.3 ha	3.8 ha

Source: HJA *(figures may not sum due to rounding).*

As noted above, there remains a small shortfall in forecast jobs to balance the labour market and maintain 2011 commuting rates. It is estimated, in line with the core analysis, without any increase in densities that a further 6,400 sq m of office floorspace and 8,700 sq m industrial floorspace will be required to accommodate the shortfall. This will require a further 2.8 – 3.8 hectares of land in addition to the requirements set out in figure 5.

Figure 6 sets out the breakdown by district. The unallocated figure will need to be accommodated within the FEMA through agreement between the districts.

Figure 6 Total Estimated Future Sites and Premises Requirements (hectares unless stated) 2016-33

	Office	Industrial
East Herts	3-7	13
Epping Forest District	2-5	14
Harlow	2-4	16
Uttlesford	2-5	22
Additional Provision to Balance Labour Market	*1–2*	*2*
West Essex and East Herts FEMA	**10-24**	**68**

Source: HJA *(figures may not sum due to rounding).*

1 Introduction

Hardisty Jones Associates Ltd (HJA) was appointed by Epping Forest District Council (EFDC), East Herts Council (EHC), Uttlesford District Council (UDC) and Harlow Council (HC) to provide an assessment of employment needs for the functional economic market area (FEMA).

1.1 Background and Context

The four councils are at different stages of preparation of their respective new Local Plans but are working jointly through the obligations of the Duty to Cooperate to consider strategic cross-boundary matters. This joint working is administered through the Cooperation for Sustainable Development Board.

In 2015 HJA was appointed by the four councils to prepare *Economic Evidence to Support the Development of the Objectively Assessed Housing Need for West Essex and East Herts*[1]. The primary purpose of the 2015 study was to inform the Strategic Housing Market Assessment (SHMA)[2] and the assessment of future housing requirements for the area, which was contained within it. The 2015 study considered what an appropriate FEMA for the area was, analysed recent historic economic performance, assessed the planning context for employment growth, analysed employment projections for the area and made recommendations on robust and defensible employment projections for the area and the four constituent authorities. The 2015 report did not consider associated employment sites and premises implications.

The HJA 2015 study identified a FEMA that aligned with the Housing Market Area (HMA), comprising the four local authority areas, whilst accepting external influences were present from the surrounding hinterland and particularly from London. In recommending employment projections the 2015 study relied upon the 2014 edition of the East of England Forecasting Model (EEFM) as a baseline position. However, the final preferred scenario included a higher level of growth to take account of expansion plans at Stansted Airport. For the period 2011-33 total employment growth of 1,890 jobs per annum, or 41,600 in total, was projected.

Since the HJA 2015 study a number of updates have been released which need to be considered. In particular:

- The SHMA has been updated to take account of higher population projections[3]. This indicates a full objectively assessed need of 51,600 dwellings over the period 2011-33.
- The EEFM has been updated. A 2016 edition has been released.

[1] HJA (2015) Economic Evidence to Support the Development of the Objectively Assessed Housing Need for West Essex and East Herts
[2] ORS (2015) West Essex and East Hertfordshire Strategic Housing Market Assessment
[3] ORS (2017) West Essex and East Hertfordshire Strategic Housing Market Assessment, Establishing the Full Objectively Assessed Need

1.2 Study Objectives

The brief for this study set out the following objectives:

1. Conduct an appraisal of the EEFM 2016 to ascertain whether it is a sound foundation upon which to formulate an up-to-date assessment of employment needs for the FEMA.
2. Produce an up-to-date business as usual/'policy-off' quantitative assessment of employment needs in the FEMA using the updated EEFM 2016 and other inputs as deemed relevant.
3. Explore an appropriate and agreed number of 'policy-on' employment need scenarios. In determining these, consultants should refer to the 2015 evidence produced by HJA, as well as drawing on the emerging Local Plans and knowledge of nominated Planning Officers within the FEMA and recent economic and housing growth evidence for the sub-region or smaller geographies within. It is recognised that an on-going consultative approach is required to secure agreement to the scenario which becomes the basis on which the four local authorities plan for employment growth. It should also be appreciated that this might be a hybrid of the options formulated.
4. Based on the preferred scenario, translate assessment of employment need into the land requirement for B Class Uses across the FEMA having regard to current supply position, local economic strategy, historic take-up and market demand.

In addition the study brief outlined a core objective at the policy level to balance employment and housing at the HMA/FEMA level. This objective is in full alignment with the NPPF.

1.3 Policy and Guidance

Planning Practice Guidance (PPG) provides advice on undertaking economic development needs assessments (section reference ID 2a). The entire section is of relevance and has been considered. This includes the following specific guidance relating to the assessment of future requirements:

"The primary objective of identifying need is to identify the future quantity of land or floorspace required for economic development uses including both the quantitative and qualitative needs for new development". (PPG ID 2a-002)

"Plan makers should not apply constraints to the overall assessment of need, such as limitation imposed by the supply of land for new development, historic under performance, viability, infrastructure or environmental constraints." (PPG ID 2a-004)

"Local planning authorities should assess their development needs working with the other local authorities in the relevant housing market area or functional economic market area in line with the duty to cooperate. This is because such needs are rarely constrained precisely by local authority administrative boundaries." (PPG ID 2a-007)

"Local authorities should develop an idea of future needs based on a range of data which is current and robust (PPG ID 2a-032)

Plan makers should consider:

- *Sectoral and employment forecasts and projections (labour demand)*
- *Demographically derived assessments of future employment needs (labour supply)*

- *Analyses based on past take-up of employment land and property and/or future property market requirements*
- *Consultation with relevant organisations, studies of business trends, and monitoring of business, economy and employment statistics"*

In setting the tone for the assessment it is also important to consider the National Planning Policy Framework (NPPF). This notes that the planning system, in fulfilling its economic role, needs to ensure *"that sufficient land of the right type is available in the right places and at the right time to support growth and innovation" (paragraph 7).* That *"every effort should be made to objectively identify and then meet the…business…needs of an area, and respond positively to wider opportunities for growth" (paragraph 17).* That *"Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities." (National Planning Policy Framework, para. 37).* Specifically in drawing up Local Plans the NPPF states that *"Local Plans should be aspirational but realistic" (paragraph 154).* These principles underpin the approach employed, ensuring a positive view of future growth potential, unencumbered by constraint but grounded in reality. The NPPF also sets out the Duty to Cooperate and the need for cross-boundary, collaborative working.

1.4 Method and Approach

The overarching method and approach was designed to meet the study brief and align to the requirements of PPG and NPPF. It should be noted that it was not requested that HJA undertake consultation with local property market or business stakeholders. It was determined that this would be undertaken at the district level.

A two phase approach was adopted. The overall analysis period is 2011-33 to align to the SHMA.

Phase 1 was focused on developing appropriate and robust future employment scenarios for the FEMA and constituent local authority areas. This included both desk-based analysis of relevant data and documents as well as consultation with economic development and planning stakeholders. A list of consultees is attached at Appendix 1 to this report. The outputs of this exercise are set out in chapters 2 and 3 of this report.

Phase 2 was focused on considering the employment land implications of the preferred employment scenario, with a specific focus on the B Use Class. The outputs of this exercise are set out in chapter 4 of this report. Employment land requirements are focused on the 2016-33 period to inform Local Plan preparation.

The details of the methodologies employed during each phase, including any assumptions made are set out throughout the report and in the attached appendices. The study has been undertaken in close conjunction with officers from the four councils, the county councils and selected other stakeholders. This has included a series of workshops where emerging findings were presented and discussed.

1.5 Functional Economic Market Area (FEMA)

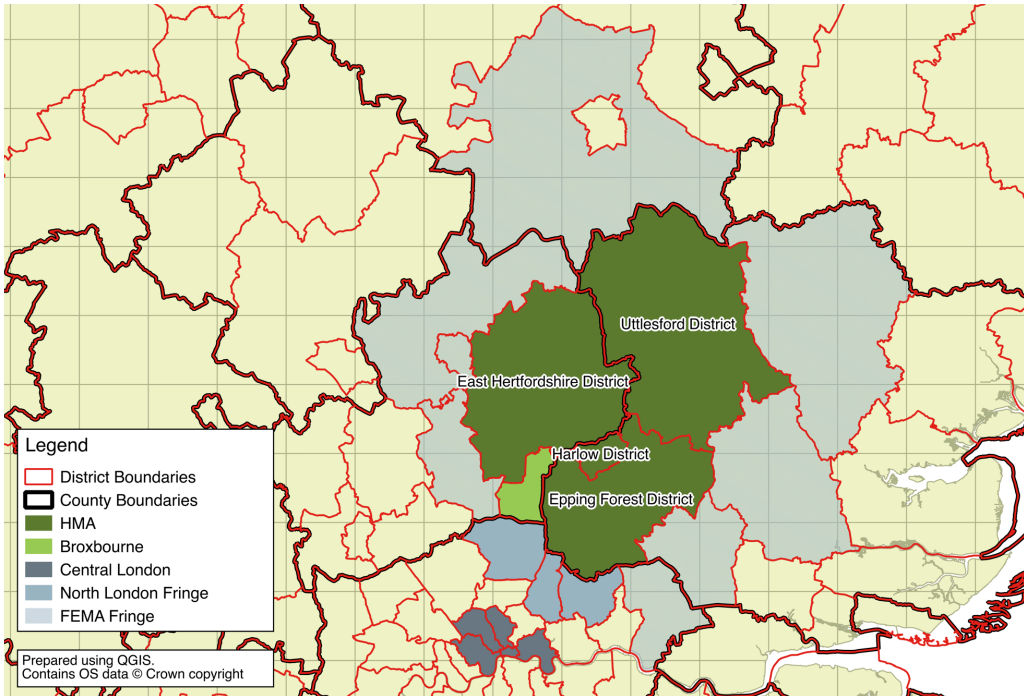
A FEMA is not constrained by administrative boundaries but reflects the way the economy works; the relationships between where people live and work, the scope of service market areas and catchments. Generally FEMAs do not have hard and fast boundaries. The boundaries are porous with many external linkages in terms of travel to work, and catchment areas for other services, as well as business interactions with customers and suppliers.

This 2017 research has not re-investigated the definition of the FEMA. This was previously considered as part of the HJA (2015) study. This found that the core of the FEMA coincided with the HMA i.e. comprising the four Local Authority areas of East Herts, Epping Forest District, Harlow and Uttlesford. The research found that Broxbourne District could also be considered part of the FEMA, but that the implications for the four core authority areas did not materially change whether or not the Broxbourne area was included. A fringe area comprising all of the immediately adjacent local authorities; and a link to central London was also identified.

A map of the FEMA can be seen in figure 1.1.

The core area covering the four councils has formed the basis for the analysis contained in this report, reflecting the close working of the four councils on cross boundary planning matters.

Figure 1.1: Functional Economic Market Area



2 'Baseline' Economic Forecast Scenarios

This chapter specifically addresses objectives 1 and 2: to provide a critical review of the latest EEFM 2016 edition; and to produce an up to date business as usual assessment of employment needs in the FEMA.

There is often discussion about whether forecasts should be termed 'policy on[4]', 'policy off[5]', 'baseline' or 'business as usual'. Each of these terms has helpful and unhelpful connotations. Nevertheless, there is a need to use some form of terminology within this report. We therefore clarify the following:

- The forecasts as initially provided by the forecasters are referred to in this report as *baseline* forecasts. This enables a contrast between the original forecast scenarios and any adjusted scenarios that might be considered.
- However, the forecasters' 'baselines' draw on historic economic performance of the area as one of the determining factors. They also draw on detailed analysis of national economic potential. The forecasts are not therefore developed assuming a policy vacuum or absence. Whilst they are not developed with explicit reference to future local policy, the historic period on which they draw also included efforts from national, regional and local economic development stakeholders to deliver a prosperous economy. A level of economic development action is therefore inherent within the forecasts. For this reason, the term 'business as usual' can appear more helpful. However, this implies no consideration is taken of wider economic factors, which will determine the economic prospects of the UK economy. This would be a misinterpretation.

2.1 East of England Forecasting Model

The East of England Forecasting Model (EEFM) provides consistent economic forecasts for the whole East of England region and selected other areas. The EEFM first released forecasts in 2007. Updated forecast releases have been issued at regular intervals since that date. It was initially developed by Oxford Economics. Oxford Economics prepared all forecast releases up to and including the 2014 edition. However, there has subsequently been a change with Cambridge Econometrics preparing the 2016 release. The EEFM is managed by Cambridgeshire Insight.

The HJA 2015 research for the West Essex East Herts FEMA utilised the EEFM 2014 release. The 2016 release is now available, but as noted above has been prepared by a different economic forecaster. The update from 2014 to 2016 editions therefore has a number of factors that can influence the changes. Firstly, new economic data that has been released since the 2014 edition was prepared will be factored in to both the historic period, and influence future projections. Secondly, the change of forecaster will impact. Forecasters rely on their own econometric models which interpret official data in slightly different ways. The change to a new model will likely lead to different forecasts (all other things being equal). In addition the forecasters will be making an assessment of future growth prospects. A different team of forecasters will likely have differing views.

[4] i.e. taking account of the impacts of a particular policy position
[5] i.e. assuming no policy impact

2.1.1 Brexit

In June 2016 the UK voted to leave the European Union. The potential consequences of this decision upon the UK economy have been much debated, both in the run up to the referendum and since the result was announced. There remains considerable uncertainty as to the exact terms of the UK exit and the implications for UK economic performance.

The EEFM 2016 release was prepared in advance of the referendum result and therefore does not take account of any economic effects of Brexit. A revised forecast release is being prepared but is not yet available. Cambridge Econometrics issued its initial views on the potential economic impacts of Brexit in August 2016 stating that in the short term the uncertainty is likely to dampen growth, with long term prospects heavily dependent on the final agreed terms of departure.

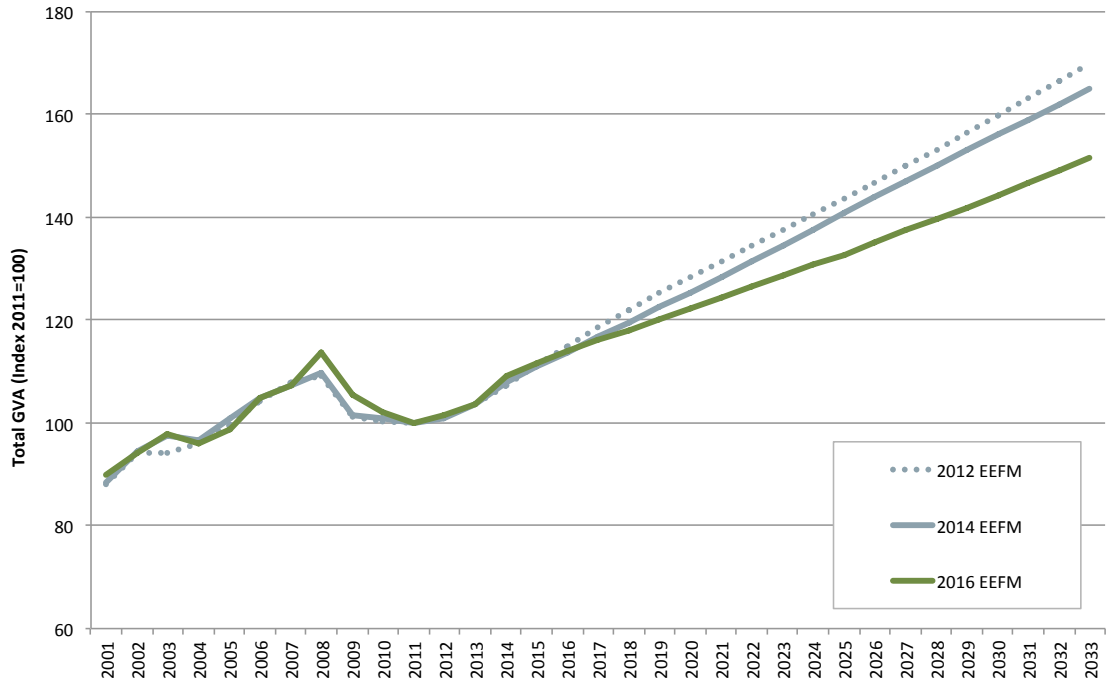
2.2 Review of 2016 EEFM

As noted above, there are a number of reasons why the 2016 EEFM release is likely to differ from the 2014 edition. A number of the changes between the two datasets were substantial and as a result HJA was asked to review the 2016 EEFM release.

2.2.1 Scale

Figure 2.1 shows total Gross Value Added (GVA) for the FEMA from the 2012 (dotted grey), 2014 (solid grey) and 2016 (solid green) EEFM releases. GVA is a measure of the output of the economy. The data is indexed to a 2011 base year. This shows a substantial downgrading of forecast GVA growth across the FEMA in the 2016 release over the period 2011-33. At 2033 total GVA is 13% lower in the 2016 release than forecast in the 2014 edition. This results from a downgrading of annual GVA growth from 2.3% per annum in the 2014 edition to 1.9% per annum in the 2016 edition.

Figure 2.1 Comparing FEMA level Total GVA data in EEFM 2012, 2014 and 2016 editions



Source: HJA based on EEFM

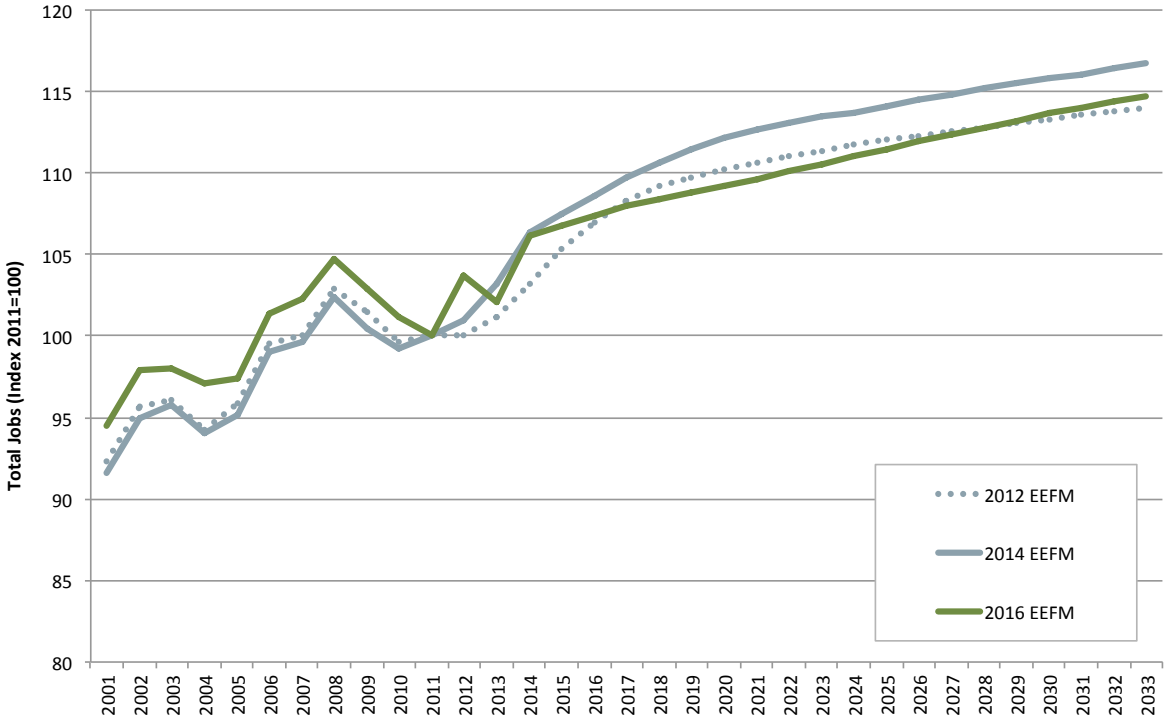
Figure 2.2 shows a similar graph but for total employment, again indexed to 2011[6]. This again shows a downgrading in growth expectation, but to a far lesser extent (2%). Average annual employment growth is forecast at 0.6% per annum in the 2016 release compared to 0.7% per annum in the 2014 release over the 2011-33 analysis period.

In combination this implies a substantial downward revision in productivity growth in the 2016 release.

The downward revision to employment growth reflects changes to forecaster expectations of labour demand. In absolute terms the 2016 release forecasts 30,000 additional jobs across the FEMA over the 2011-33 period. This compares to 35,000 additional jobs in the 2014 release. A reduction of around 5,000 jobs. Of note, this 14% downward revision in employment compares to a 5% downward revision across the East of England as a whole and a 4% upward revision at UK level[7].

The HJA 2015 research set out a preferred scenario with employment growth in excess of the EEFM 2014 position (41,600 jobs), as a result of planned employment growth at Stansted. Further consideration of known local investments and the alignment of labour demand and supply are considered at chapter three of this report.

Figure 2.2 Comparing FEMA level Total Employment data from EEFM 2012, 2014 and 2016 editions



Source: HJA based on EEFM

[6] Indexed data is used as the absolute levels of employment in the two EEFM models differ for the historic periods. This demonstrates the scope for difference in interpreting the various official employment data sets. Indexing the forecasts allows for more direct comparison of change over the analysis period.

[7] It is difficult to concisely identify why the EEFM 2016 suggests such a significant downgrading of growth for the FEMA relative to other areas. Figure 2.8 shows the sectoral differences between the 2014 and 2016 editions. This shows it is not a simple issue of one sector being modelled differently, or being subject to changed expectations. There are major differences in sectoral expectations across the piece and these sum to a much larger weakening of growth expectation across the FEMA than other areas.

Figure 2.2 also illustrates how in reality the change in employment is more volatile year on year than is forecast. The forecasts draw upon anticipated average change. In reality the future will include year on year fluctuations. For planning purposes the important issue is the change between two points.

2.2.2 Spatial Distribution of Growth

Figure 2.3 illustrates the distribution of employment growth across the FEMA over the period 2011-33 in the 2014 and 2016 EEFM editions. This shows a very significant redistribution of employment growth towards East Herts and away from the other three districts. This in part results from the updated employment data made available between the 2014 and 2016 releases[8]. As a result of this stronger jobs growth in East Herts this is projected to continue into the future. This major shift in forecast expectation requires some further investigation, particularly as this is so different to the previous edition which has influenced current policy development.

Figure 2.4 shows a time series of employment shares for each of the four districts taken from the two EEFM editions. East Herts accounts for the greatest share of FEMA employment. From 2001-2010 East Herts accounted for a reducing share in FEMA employment. This trend then reversed and started to rise. The different forecast expectations are clear on the chart, with the 2016 edition anticipating a continued upward trend with East Herts accounting for an ever increasing proportion of FEMA employment, rising above 35% by the mid 2020s. The 2014 edition projected a much flatter trend at around 31%.

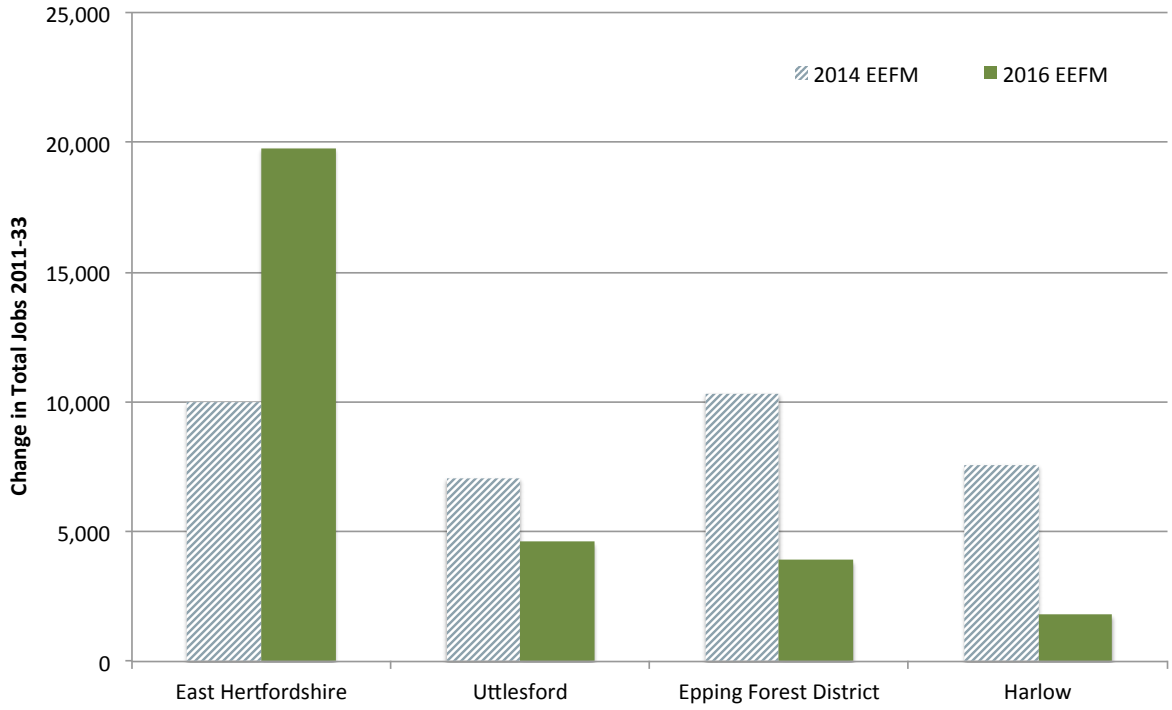
For Epping Forest District the scale of change is less pronounced, with a change from a modestly increasing share to a modestly decreasing share of FEMA employment. For Uttlesford there is a very minor downward revision. For Harlow there is a more substantial downward revision.

Overall the change from the EEFM 2014 to 2016 is a 98% increase in the forecast level of jobs growth in East Herts, a 35% decrease in Uttlesford, 62% decrease in Epping Forest District and a 76% decrease in Harlow.

The data presented in figures 2.3 and 2.4 is all taken from the EEFM. When preparing the EEFM the forecasters draw upon data from the Office for National Statistics (ONS). However, there are various employment data sets produced by the ONS. As a result the forecasters model this data and can arrive at slightly different interpretations of the same data.

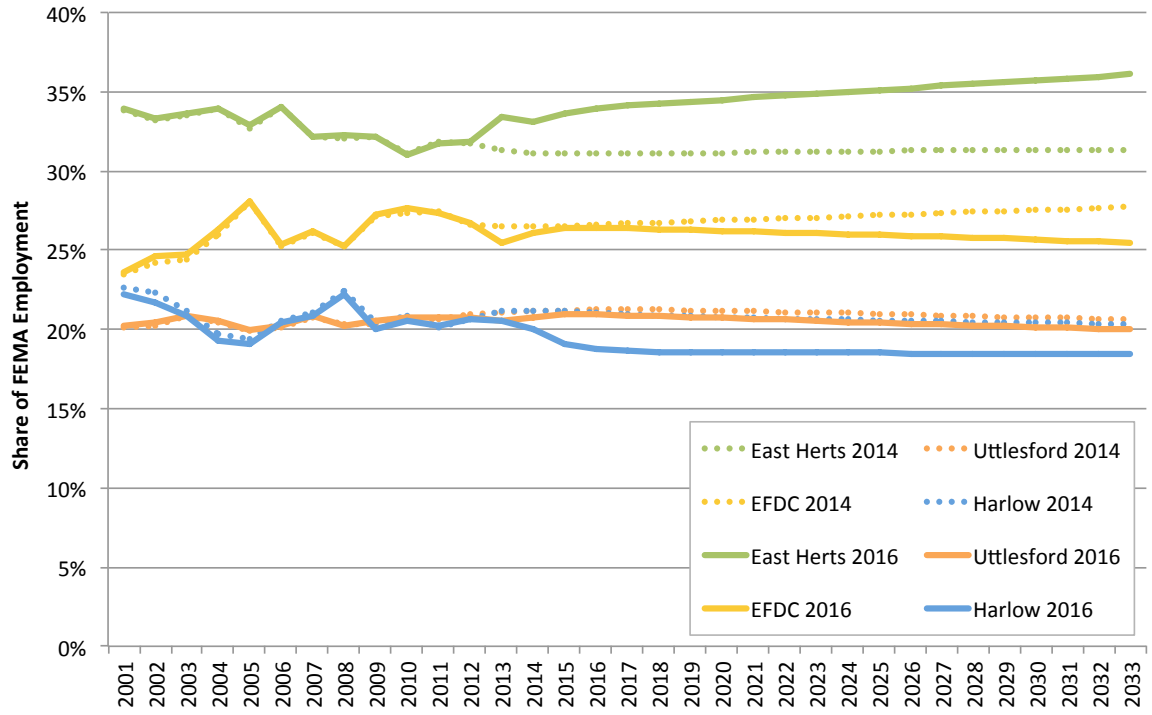
[8] The Business Register and Employment Survey (ONS) data for 2013 and 2014 was likely available to the forecasters preparing the 2016 edition of the EEFM. This showed faster growth in employment in East Herts than in other parts of the FEMA particularly within year 2012-13. This may have influenced forecasting models. However, data for 2015 released since the 2016 EEFM was published suggests this trend has been reversed and is potentially a statistical anomaly. See figure 2.7 for more detail.

Figure 2.3 Comparing the Spatial Distribution of Forecast Total Employment Growth 2011-33



Source: HJA based on EEFM

Figure 2.4 Comparing Forecast Employment Distribution by District 2011-33

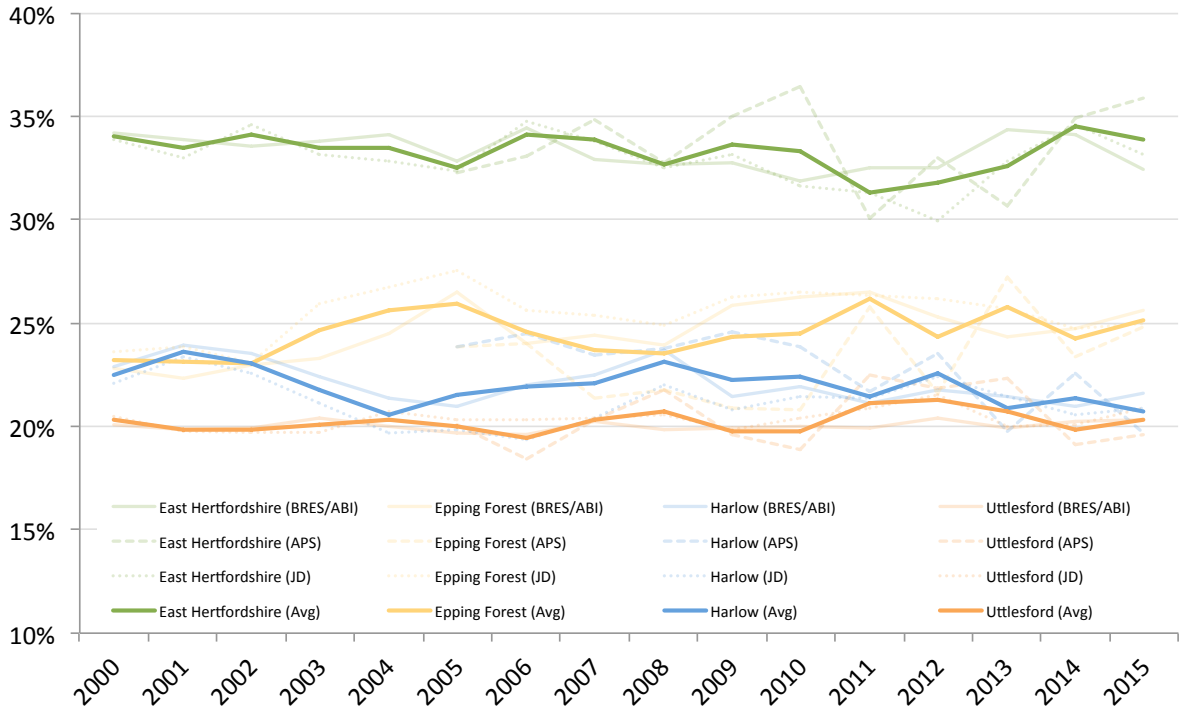


Source: HJA based on EEFM

Figure 2.5 has been developed using the different employment data sources produced by the ONS. The Business Register and Employment Survey (BRES) and its predecessor the Annual Business Inquiry (ABI); the Annual Population Survey (APS) which includes a workplace based jobs measure; and the Jobs Density series which is the most comprehensive measure of all jobs in an area. Each data set has strengths and weaknesses and captures something slightly different. For this purpose we are only considering the distribution of employment across the FEMA. HJA has constructed an average share based on the three datasets. This is similar, but not identical to the historic period analysis within the EEFM.

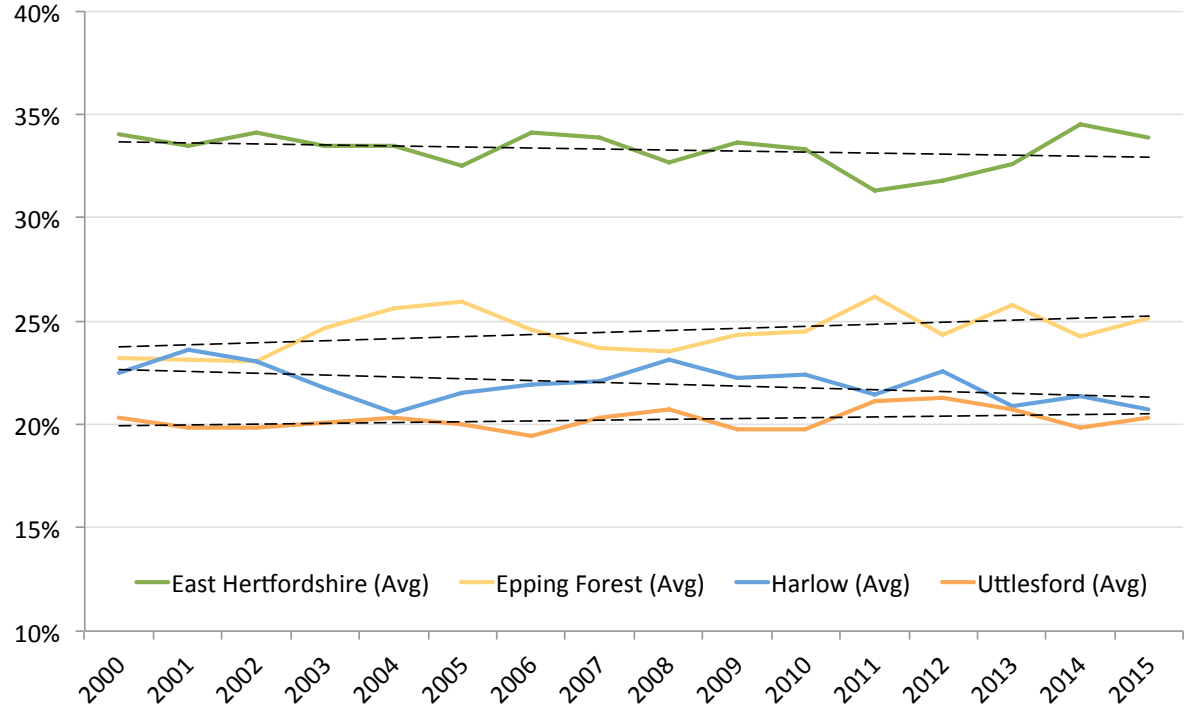
Figure 2.6 takes the average positions identified in figure 2.5 and plots trend lines for the period 2001-15. This actually suggests a declining trend in the share of employment accounted for by East Herts. Whilst there has been growth in the period 2011-14 this could be seen as largely counteracting losses in the preceding period. The most recent data for 2014-15 has not continued that upward swing. On this basis the long-term trend does not support an ever-increasing share of employment at East Herts.

Figure 2.5 Comparing Historic Employment Shares using ONS Data



Source: HJA based on ONS

Figure 2.6 Comparing Historic Employment Shares using ONS Data with Trendline



Source: HJA based on ONS

Figure 2.7 illustrates the implications of the most recent 2015 BRES data release. The top half of the table sets out total employment data for each district. The bottom half of the table shows this data indexed to 2012 (2012=100). This provides some insight into the data available to the forecasters when preparing the 2016 EEFM. The 2013 and 2014 BRES data would have been available to the forecasters. The 2015 BRES data was released after the EEFM 2016 publication date. When considering the performance of East Herts at 2013 and 2014 it is clear that the BRES data showed very strong employment performance in comparison to the other areas in the FEMA. However, the 2015 data shows a major change in the situation, with the scale of employment growth from 2012 - 2015 much more consistent across each of the districts. This suggests the major adjustment in the EEFM 2016 edition towards employment growth at East Herts into the long term is unsound and should be corrected.

Through discussion at officer workshops there was clear concern regarding the 2016 EEFM approach to employment distribution. On-the-ground understanding of changes in local economies and what was anticipated in the future did not align to the EEFM forecasts. Whilst East Herts has performed well in recent years there was no strong basis to anticipate such a disproportionate growth in its employment base relative to the other districts within the FEMA. In policy terms there is a clear commitment to deliver new employment growth at Harlow, with confirmed Enterprise Zone status. It was therefore agreed to adopt the apportionment within the 2014 EEFM model rather than the 2016 model as the baseline position.

Figure 2.7 Business Register & Employment Survey 2011-2015

	East Herts	Epping Forest District	Harlow	Uttlesford
Employment				
2011	58,500	47,600	38,000	35,800
2012	58,400	45,500	39,100	36,700
2013	61,700	43,800	38,500	35,500
2014	63,600	46,000	39,100	37,700
2015	62,600	49,400	41,700	39,300
Index 2012=100				
2012	100	100	100	100
2013	105.7	96.3	98.4	96.8
2014	108.9	101.3	99.9	102.9
2015	107.2	108.7	106.6	107.0

Source: ONS BRES

2.2.3 Sectors

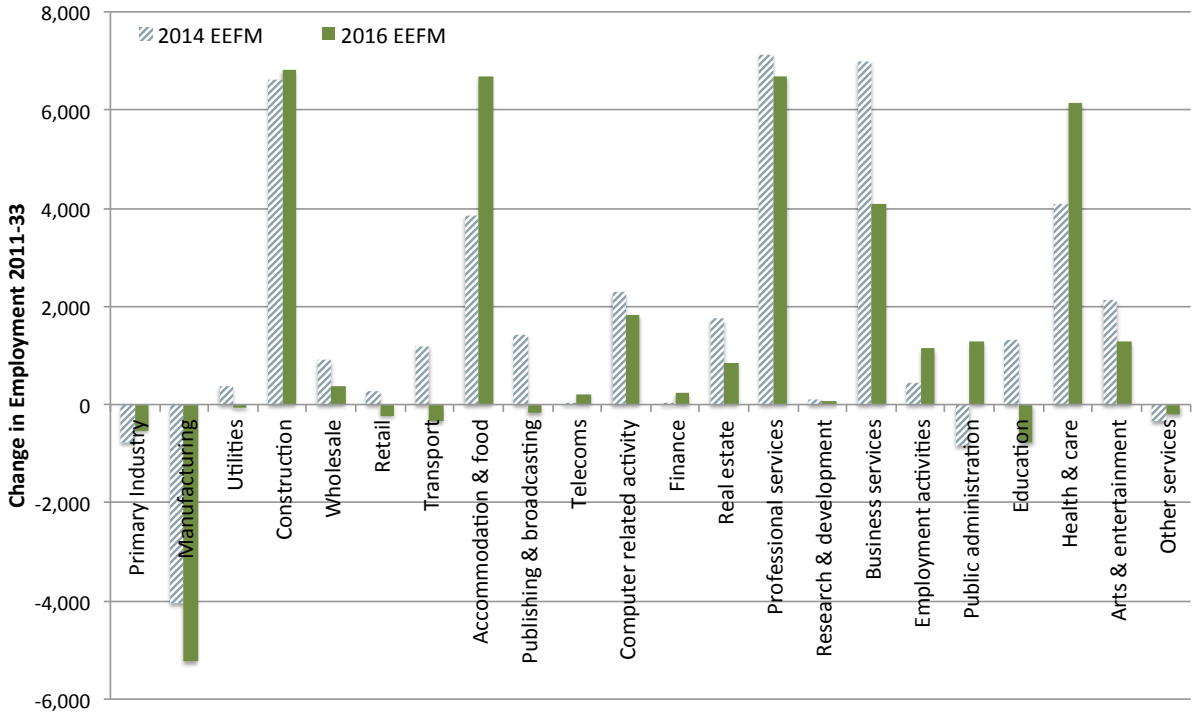
Figure 2.8 shows the forecast change in employment by sector across the 2014 and 2016 EEFM releases. This shows quite substantial variation on a sector-by-sector basis. Some of the largest variations include Accommodation & Food, Business Services, Public Administration, Education and Health & Care. All have been subject to swings in excess of 2,000 jobs over the period 2011-33. Whilst some of the changes will result from new data, it is likely that a substantial proportion relates to forecaster expectations of change by sector.

A workshop with the officer group was used to discuss the sector-by-sector issues combining local knowledge, ONS data and the two EEFM releases. It was agreed that HJA should develop a 'moderated baseline' to take into account local data and insight given the concerns with some of the EEFM 2016.

2.2.4 Timing

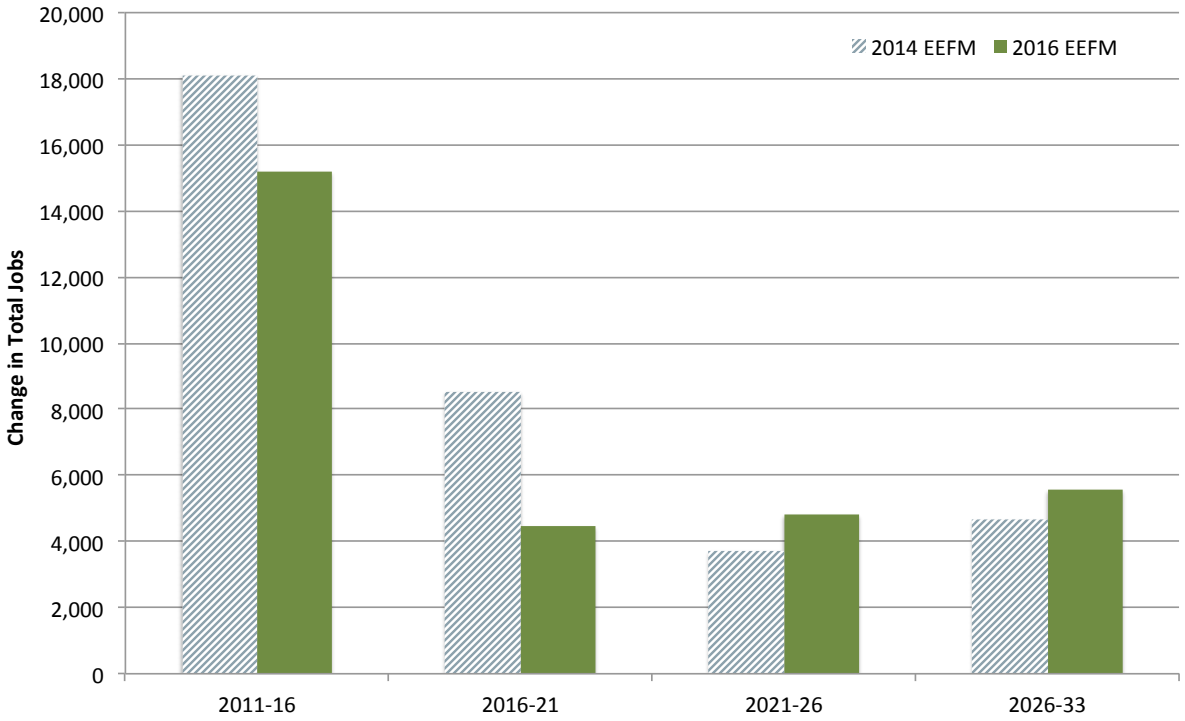
Figure 2.9 shows the distribution of forecast employment growth over the 2011-33 period. This shows lower anticipated growth in employment within the EEFM 2016 in the first 10 years of the period but increases in the final 12 years. The 2016 edition clearly benefits from additional ONS data for the 2011-16 period which will influence expectations for this period. The 2011-16 period is also reflective of the recovery from the economic downturn from 2008-11.

Figure 2.8 Comparing FEMA Level Forecast Sectoral Employment Change in the 2014 and 2016 EEFM



Source: HJA based on EEFM

Figure 2.9 Comparing the Timing of Total Forecast Employment at FEMA Level in the EEFM 2014 and 2016



Source: HJA based on EEFM

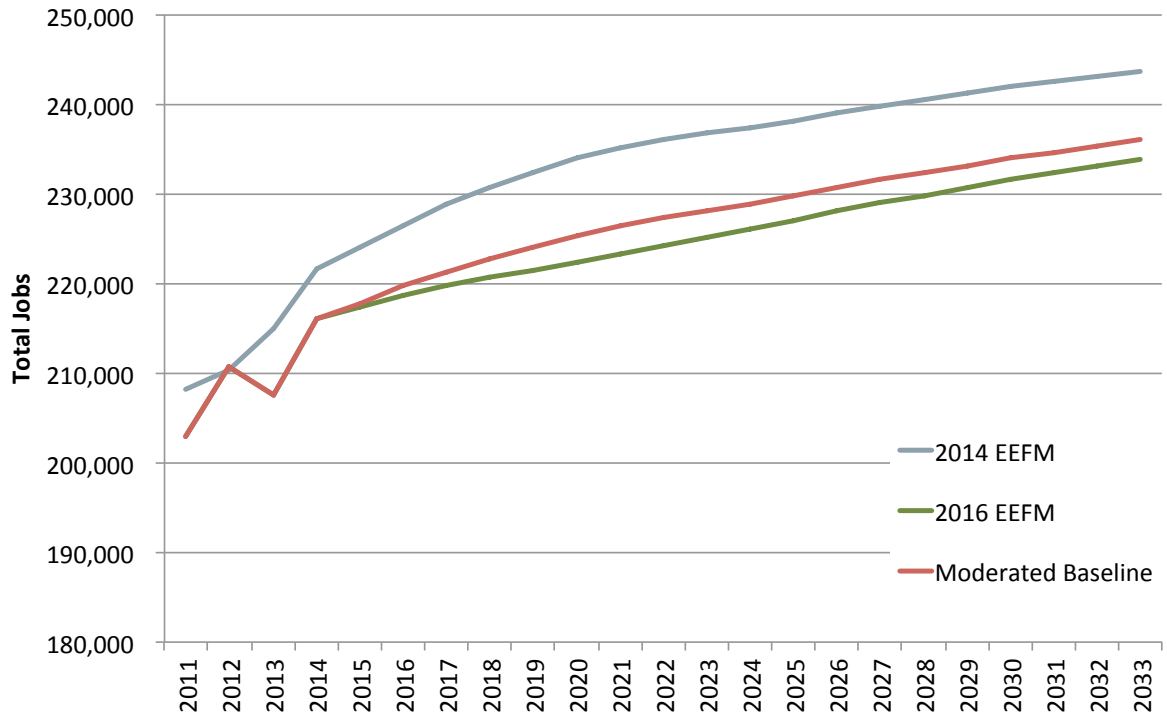
2.3 Moderated Baseline

Following the review of the 2016 EEFM it was determined that a moderated baseline was required. The greatest concerns related to the spatial distribution of employment growth. There was also some concern around the overall scale of forecast employment growth and the sectoral distribution of employment growth. The moderated baseline sought to take some account of these concerns by:

- Acknowledging the availability of additional historic data in the EEFM 2016. As a result the historic period up to 2014 was drawn from the EEFM 2016.
- Using the average sectoral growth rates of the 2014 and 2016 EEFM releases for each sector over the period 2014-33 with the exception of Education[9] for which the 2014 EEFM figure was adopted. This generated a FEMA wide sector-by-sector employment forecast.
- Revising the spatial distribution of employment growth on the basis of the 2014 EEFM on a sector-by-sector basis. That is, the FEMA wide sector-by-sector forecast was distributed across the four districts using the 2014 EEFM as a basis. Therefore, if East Herts accounted for 40% of employment in the Utilities sector in 2020 within the 2014 EEFM, this proportion was applied to the FEMA level total for employment in that sector.

Figure 2.10 illustrates the moderated baseline, which sits between the 2014 and 2016 EEFM forecasts. Figure 2.11 shows the spatial distribution of employment change over the analysis period by district. The total level of forecast employment growth is 33,100 jobs over the period 2011-33. Figure 2.12 provides a summary of forecast employment (jobs) change by district.

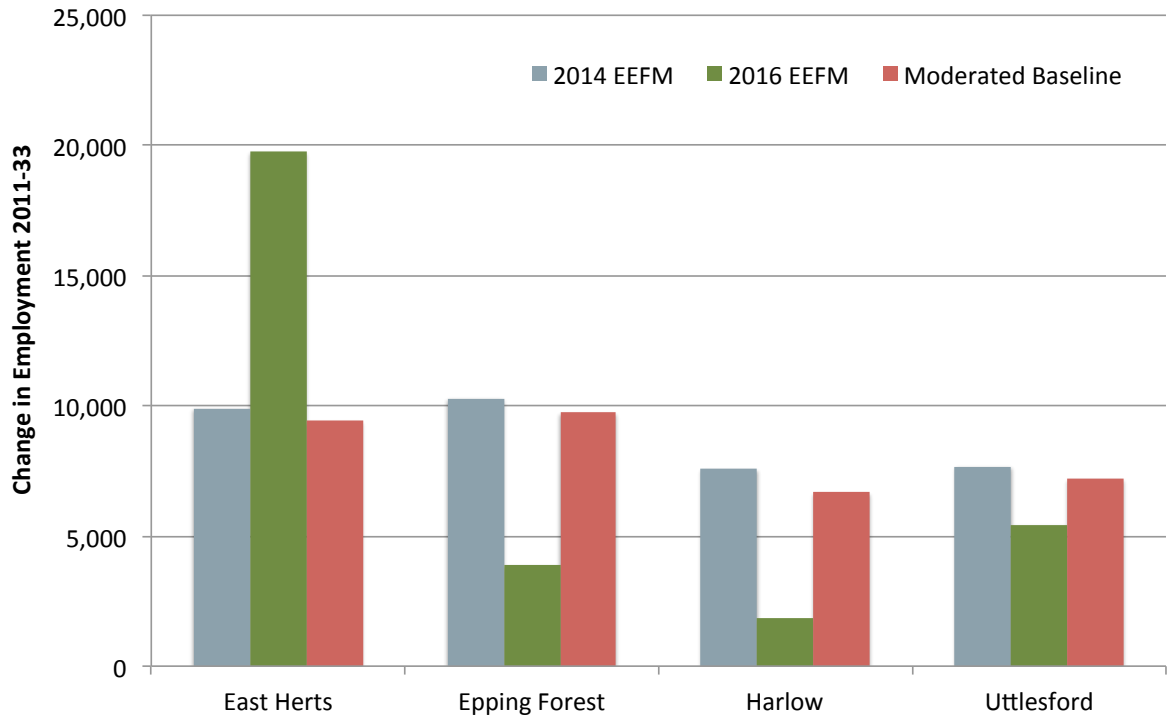
Figure 2.10 Moderated Baseline Total FEMA Jobs 2011-33



Source: HJA based on EEFM

[9] The 2014 EEFM Education sector employment growth trajectory was adopted because of the anticipated growth of the local population. Given the scale of anticipated housing and population growth a negative change in education employment was not deemed realistic.

Figure 2.11 Spatial Distribution of Moderated Baseline, Total Jobs 2011-33



Source: HJA based on EEFM

Figure 2.12 Moderated Baseline – Employment (Jobs) Change by District

	East Herts	Epping Forest District	Harlow	Uttlesford	FEMA
2011-16	3,700	3,000	5,000	5,000	16,800
2016-21	2,300	2,500	700	1,300	6,700
2021-26	1,600	1,900	400	400	4,300
2026-33	1,800	2,400	600	500	5,300
2011-33	**9,400**	**9,800**	**6,700**	**7,200**	**33,100**

3 Alternative Economic Growth Scenarios

The preceding chapter considered an appropriate baseline employment forecast for the FEMA based on the EEFM. This chapter considers whether alternative scenarios should be considered and if so, what these should constitute. This specifically addresses objective 3.

The analysis set out within this chapter was based on desk based technical work including policy and documentary review as well as a series of stakeholder consultations. A list of consultees is set out at Appendix 1 to this report.

3.1 Policy

As noted in the introduction to the previous chapter of this report, baseline forecasts do not assume a policy vacuum. It is inherently assumed that a level of local and national economic development effort will be employed[10]. The focus of the policy review and stakeholder consultation was to identify specific opportunities or policy emphases that are anticipated to deliver exceptional growth above baseline forecast, particularly where known investments can be identified and are locally focused.

A number of opportunities emerged from the review:

- The desire to balance jobs and homes given the planned level of housing growth to ensure the FEMA does not become increasingly viewed as a dormitory location;
- The potential of the London Stansted Cambridge Corridor with a focus on a number of sectors including life sciences and medical which is consistently noted across local and sub-regional policy documents;
- The focus on Harlow as a location to host this growth including the relocation of Public Health England to Harlow and the presence of an Enterprise Zone in the town;
- Growth potential at Stansted Airport;
- The potential opportunities surrounding the relocation of Princess Alexandra Hospital;
- M11 improvements including a new Junction 7a; and
- General positivity around economic potential arising from potential London overspill.

There were also a number of potential challenges noted:

- Delivering the sites and premises to facilitate growth with viability challenges, loss of employment space through permitted development and the desire for residential land values among land owners;
- Congestion, including major issues at M11 Junction 7;
- The need for start up and grow on space for SMEs;
- The implications of Crossrail 2 (deemed outside the time frame being considered for this study); and
- Issues relating to skills development and competing with nearby locations including London that can offer higher wages.

[10] For example, the roll out of superfast broadband, investment in local transport infrastructure, investment in skills and employment infrastructure are generally taking place across the UK and would be considered inherent within the baseline forecast.

In line with NPPF/PPG such constraints should not be used to limit the assessment of need, but are relevant factors when considering policy responses. The core emerging opportunities are considered in more detail below.

3.2 Labour Supply

The most up to date assessment of local demographics is the July 2017 West Essex and East Hertfordshire Strategic Housing Market Assessment OAN Update prepared by ORS. HJA has discussed the balance of jobs and workers with ORS to ensure the evidence is consistent. ORS has confirmed that on the basis of the latest demographic assessment, the population growth will generate sufficient workers to meet the level of employment growth within the moderated baseline.

In fact, there is forecast to be a level of growth in labour supply well in excess of that to meet the moderated baseline jobs forecast. Over the period 2011-33 the resident economically active population is projected to increase by 57,200 persons. Various adjustments need to be made to understand the alignment of jobs and workers within the FEMA. These are set out in figure 3.1 below. This identifies a substantial requirement for additional jobs to meet the needs of local residents. When compared to the Moderated Baseline there is an excess of 14,300 residents within the FEMA that would expect to be working. In order to maintain balance in the labour market, and hold commuting rates constant at 2011 levels, an additional 20,000 jobs will need to be provided within the FEMA in addition to the Moderated Baseline. Without additional jobs either there will be an increase in unemployment beyond a normal frictional level, or the balance of net commuting will need to adjust, with a much more significant outflow of residents from the area.

Figure 3.1 Balancing Labour Supply and Demand in the FEMA 2011-33 (Moderated Baseline)

Labour Supply	
Additional economically active population (2011-33) [A]	57,200
Allowance for frictional unemployment (3.8%[11]) [B]	2,200
Additional resident workers (2011-33) [C = A - B]	55,000
Excess labour supply at 2011[12] [D]	6,300
Total additional resident workers requiring jobs [E = C + D]	61,300
Out commuting (38.2%) [F]	23,400
Total change in residents requiring jobs within the FEMA [G = E - F]	**37,900**

Labour Demand	
Total additional jobs (Moderated Baseline) [H]	33,100
Filled by in commuters (28.7%) [I]	9,500
Total available jobs for local residents [J = H – I]	**23,600**

Excess workers [K = G – J]	**14,300**
Additional job requirement [L = K / (1 – In-commuting rate)]	**20,000**

[11] The rate of frictional unemployment is set at 3.8%. This is based on analysis of ONS Annual Population Survey data for the FEMA for the period 2004-2016. Over this period unemployment (ILO measure) has averaged 4.8%. When considering only the years before the economic downturn (2004-2007) and since recovery has been well established (2015-2016) the average is 3.8%. This is set as an assumption for unemployment in times of strong labour market performance.

[12] Unemployment in the FEMA was high at 2011 as a result of the economic downturn. If unemployment stood at a frictional rate of 3.8% an additional 6,200 residents would have been in employment at 2011.

3.3 Public Health England

The relocation of Public Health England (PHE) to Harlow is confirmed. PHE will occupy the former GSK site in the town. As a minimum 2,750 jobs will be relocated to Harlow from Porton in Wiltshire and Colindale in the London Borough of Barnet. It has been announced that the facility will be fully operational from 2024 with some jobs relocating from the early 2020s. Jobs will be spread across public administration (SIC 84.1) and research and development (SIC 72) sectors[13]. A further 500 potential jobs have been indicated after 2024 within the same site.

Review of the moderated baseline confirms that growth of this scale at Harlow in these sectors is not forecast. This is an exceptional inward investment. On this basis it is appropriate to make a specific adjustment to the moderated baseline for the PHE relocation. Based on available information this has been set at 3,250 jobs over the period 2021-27.

3.4 Stansted Airport

There are well defined growth plans for Stansted Airport[14]. These have been subject to detailed econometric research[15] which formed the basis for the Stansted scenario within the HJA 2015 report. Planning permission has been awarded for expansion at Stansted to accommodate up to 35 million passengers per annum (mppa). Current passenger numbers are understood to be above the anticipated growth profile. The Sustainable Development Plan sets out an increase in passenger numbers to 35 mppa by 2025 and 45 mppa by 2030. The related increase in jobs is estimated to be around 10,000 jobs at the airport by 2030. Research by Oxford Economics identified a series of likely displacement effects in the wider FEMA, resulting in a net increase of some 8,750 jobs at FEMA level.

HJA analysis of the moderated EEFM baseline indicates some 2,000 additional jobs at Stansted are already included. The overall FEMA level uplift over the moderated baseline is therefore 6,750. This is again exceptional and outside the pattern of normal econometric forecasting. The increase will be spread over an extended period to 2030.

3.5 Harlow Enterprise Zone

There are long-standing policy aspirations to deliver substantial employment growth at Harlow and for the town to become a primary location for jobs growth within the FEMA. This is now starting to come to fruition with the designation and delivery of an Enterprise Zone (EZ) in the town and the confirmed relocation of PHE. The Harlow Enterprise Zone comprises three sites:

- Harlow Science Park – offering 14 hectares of greenfield land with planning consent for 50,000 sq m of Science Park uses;
- KAO Park – to include a 32,000 sq m data centre complex and 20,000 sq m Grade A office business park; and
- Templefields – comprising the upgrading of an existing 80,000 sq m industrial estate

[13] Based on analysis of both press reports and ONS employment data for existing locations of PHE sites.
[14] London Stansted Airport (2015) Economy and Surface Access: Sustainable Development Plan
[15] Oxford Economics (2013) Economic Impact of Stansted Scenarios

These opportunity sites tie in with the Harlow Economic Development Strategy 2017 with a focus on ICT, Advanced Manufacturing and the Life Sciences. This aligns with ambitions of the London Stansted Cambridge Corridor (LSCC). In addition, committed funding to deliver a new Junction 7a on the M11 and related highways improvements will substantially improve access to Harlow and the Enterprise Zone for business purposes.

It was agreed an uplift of 2,500 jobs at Harlow should be made to capture the opportunities at Harlow and the Enterprise Zone. These are spread across the 2019-2033 period.

3.6 Princess Alexandra Hospital

There is work on-going to consider the options around the Princess Alexandra Hospital. This could include moving the hospital to one of two candidate sites within the FEMA from its current location in Harlow. At present there is no preferred option. There is also no detail on potential staffing numbers as much of the current analysis relates to potential future care models.

The hospital itself does not fall within the B Use Class and is not directly related to the ultimate objective of this study, in terms of employment land within the B Use Classes. However, options for employment land in the form of some sort of business park adjacent to, or as part of the new hospital campus site have been mooted. This could have a research and innovation focus. However, there is no preferred option or clear and concrete proposal at the time of research. It was noted to HJA that it is currently at the *"very early stages of scoping".*

On the basis of the currently available evidence no specific adjustment related to the potential options for the Princess Alexandra Hospital have been made. However, it is a clear opportunity which may deliver additional jobs in the future.

3.7 Additional Service Sector Employment Due to Higher Population Growth

The population projections associated with the full objectively assessed need within the 2017 SHMA OAN Update report are more than 30% higher than the population projections inherent within the EEFM for the FEMA. As a result there will be additional demands on a range of services in the area, this will include education, health, retail and leisure. It is therefore reasonable to assume higher levels of employment in these sectors than is included within the moderated baseline.

HJA has considered the relationship between total population and employment in the retail, food services, health, arts and entertainment, and other services sectors in the EEFM and moderated baseline. Adjustment has been made to remove the potential influence of Stansted Airport in the retail and food services sectors. The identified ratios have then been applied to the SHMA population projections arising from the full OAN. The results have been compared with the employment levels in the moderated baseline to identify potential uplifts.

For the education sector a different approach has been used. The population of school age within the OAN population projections is extracted, this is then used to assess potential educational employment based on typical pupil to adult ratios in state schools in England[16]. The results

[16] School Census and School Workforce Census. Table 17a

(accepting they do not encompass the full range of educational employment) are then compared with the moderated baseline to determine any potential uplift.

The results of this process indicate a potential uplift of 5,400 jobs over and above the moderated baseline linked to the much higher population projection. For modelling purposes this uplift is distributed across the districts within the FEMA based on the distribution of employment in the relevant sectors within the EEFM 2014 edition. This is consistent with the distribution of employment in the moderated baseline.

3.8 Considered Scenarios

On the basis of the evidence there are four clear drivers that underpin the consideration of higher growth scenarios: the relocation of Public Health England to Harlow, the growth plans of Stansted Airport, the Enterprise Zone and associated economic development focus at Harlow, and the greater projected population growth than inherent within the moderated baseline. Considering these higher growth options is entirely justified based on the labour market capacity identified at section 3.2.

In assessing the potential implications of each of the four uplift factors the scale, timing and geographic spread of impact was based on the available evidence. The EEFM was analysed to identify existing job growth in the relevant sectors to make adjustment where it was suspected duplication may be present. For example, this was identified in the case of Stansted Airport, where employment growth associated with the existing facility was evident.

Figure 3.2 illustrates the spatial distribution and scale of adjustments made to the moderated baseline.

- An uplift for PHE is included at Harlow, no adjustment is made for the other districts.
- An uplift for Stansted is made at Uttlesford. A minor negative adjustment is made for the other districts in line with the available modelling evidence.
- An uplift for Harlow is included at Harlow on the basis of the EZ and associated growth plans including new motorway junction.
- An uplift for each district is made to reflect the greater population growth anticipated within the SHMA OAN Update.

Each of these elements is shown separately so the effects could be considered in isolation or together.

Figure 3.2 Higher Growth Scenarios

Source: HJA

In aggregate the uplifts add a further 17,900 jobs to the moderated baseline position, creating combined growth 2011-33 of 51,000 jobs. Preferred Scenario

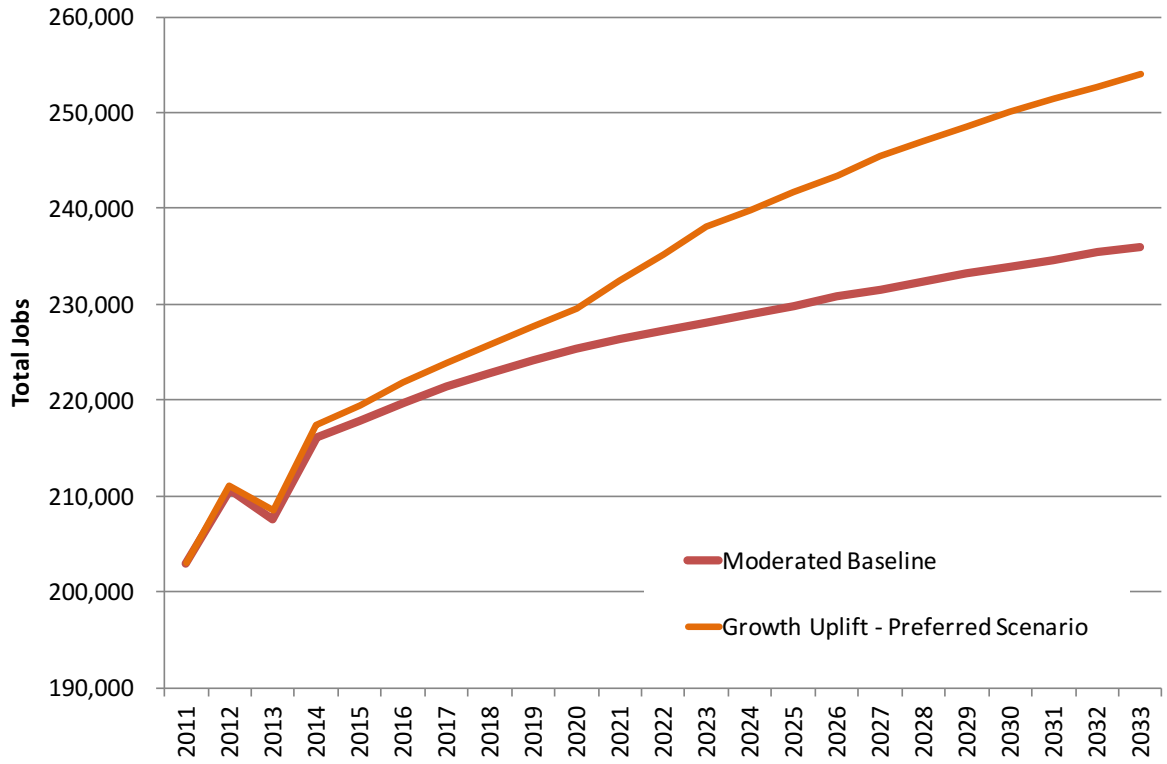
The scenario options were discussed with the four constituent districts. It was agreed that the preferred scenario would include all four uplifts given that they had a reasoned evidential basis.

It is acknowledged that with these combined uplifts the level of job creation in the FEMA is significantly higher than the moderated baseline position. However, even with these uplifts the combined jobs total remains 2,100 jobs below the minimum level required to bring labour supply and demand perfectly into balance whilst retaining 2011 commuting rates.

There is no clear basis to create additional uplifts to the employment scenarios in order to bring the number of local jobs into exact balance with resident workers. However, the scale of additional provision required is not considered significant given the long-term nature of Local Plans and the uncertainty associated with forecasting of this nature. Without providing adequate jobs other variables will have to adjust in the labour market, this could be commuting patterns, unemployment or economic migration.

Figure 3.3 illustrates the preferred growth uplift scenario (orange line) relative to the moderated baseline (red line). Whilst there is a clear basis for the Growth Uplift, the economic development challenge should be recognised, given the scale of employment growth required above baseline

Figure 3.3 Preferred Scenario



Source: HJA

As can be seen in figure 3.3, there is substantial employment growth in the early years of the analysis period 2011-14. This includes a period of recovery from the 2008 financial crisis and ensuing recession. It was agreed that to reflect the real world situation more accurately the analysis period for employment land calculations should be divided into two: the period 2011-16, reflecting the period that has already occurred; and 2016-33 reflecting the forecast period.

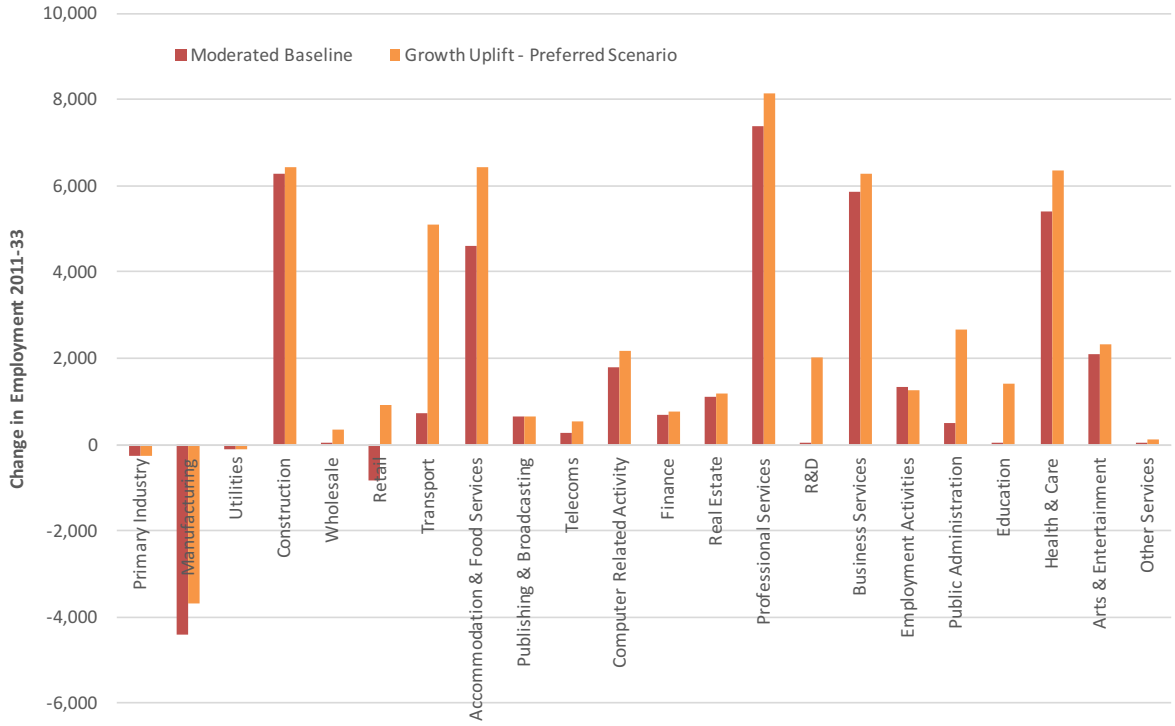
3.8.1 Employment Change by Sector

Figure 3.4 shows the spread of net employment change across the 2011-33 period by sector for both the moderated baseline and the growth uplift (preferred) scenario. The greatest uplift is in the transport sector given the range of transport related activities which are affected through the Stansted uplift. However, there are positive changes across many sectors as a result of the growth uplifts.

3.8.2 Employment Change by District

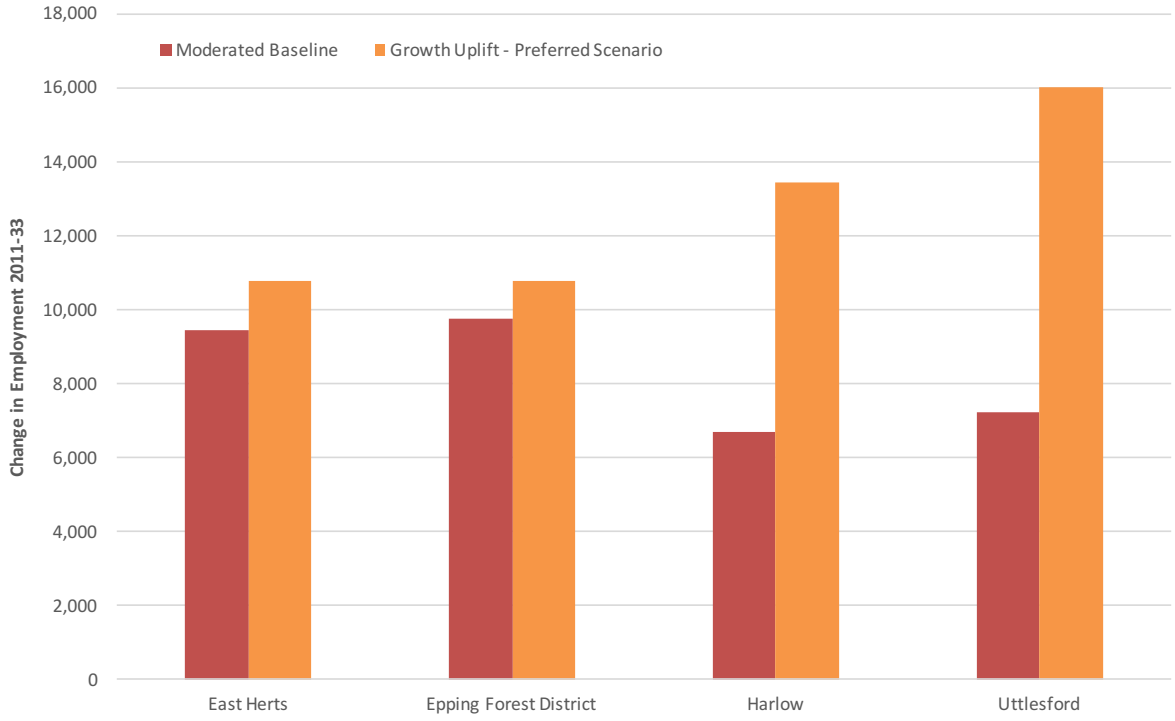
Figure 3.5 sets out the spread of net employment change over the period 2011-33 across the four districts. This shows the greatest uplifts to Harlow and Uttlesford as discussed in earlier sections of this chapter. Figure 3.6 sets out the figures underpinning the chart in more detail.

Figure 3.4 Employment Change by Sector 2011-33



Source HJA

Figure 3.5 Employment Change by District 2011-33



Source: HJA

Figure 3.6 Preferred Scenario – Employment (Jobs) Change by District

	East Herts	Epping Forest District	Harlow	Uttlesford	FEMA
2011-16	3,600	2,900	4,900	7,400	18,900
2016-21	2,300	2,500	2,100	3,700	10,600
2021-26	2,200	2,300	3,500	3,000	10,900
2026-33	2,700	3,000	2,900	1,900	10,600
2011-33	**10,800**	**10,800**	**13,400**	**16,000**	**51,000**

Source: HJA *(figures may not sum due to rounding).*

Figure 3.7 below reprises the earlier table (figure 3.1) looking at the balance of labour supply and demand, but updates for the preferred scenario. This details the issue already outlined, that even with the identified growth uplifts there remains an imbalance. The number of workers potentially without jobs is assessed as 1,500, which is approximately 2.5% of the increase in resident workers (row E in the table).

Figure 3.7 Balancing Labour Supply and Demand in the FEMA 2011-33 (Preferred Scenario)

Labour Supply	
Additional economically active population (2011-33) [A]	57,200
Allowance for frictional unemployment (3.8%) [B]	2,200
Additional resident workers (2011-33) [C = A - B]	55,000
Excess labour supply at 2011 [D]	6,300
Total additional resident workers requiring jobs [E = C + D]	61,300
Out commuting (38.2%) [F]	23,400
Total change in residents requiring jobs within the FEMA [G = E - F]	**37,900**

Labour Demand	
Total additional jobs (Preferred Scenario) [H]	51,000
Filled by in commuters (28.7%) [I]	14,600
Total available jobs for local residents [J = H – I]	**36,400**

Excess workers [K = G – J]	**1,500**
Additional job requirement [L = K / (1 – In-commuting rate)]	**2,100**

Source: HJA *(figures may not sum due to rounding).*

4 Employment Land Implications

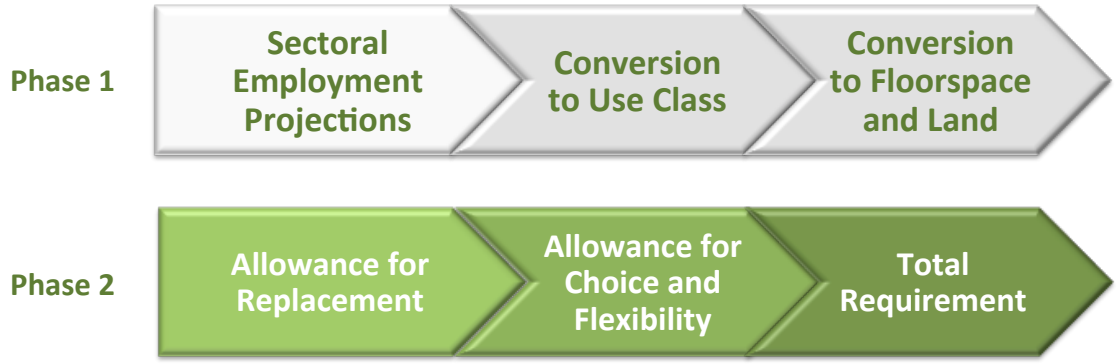
Previous chapters have considered economic and employment scenarios. This chapter considers the B Use Class sites and premises implications. The focus in quantitative terms is primarily for the period 2016-33, on the basis that the period 2011-16 has been completed[17]. The 2011-16 period also includes the recovery from the post 2008 economic downturn, with capacity in the economy (including the labour market and commercial floorspace) being used up. At 2016 the economy was at a more neutral position.

4.1 Overarching Method and Approach

A summary of the overarching method and approach to assessing the employment sites and premises implications is set out below.

Figure 4.1 provides a diagrammatic summary of the two phase process.

Figure 4.1 Approach to Assessing Sites and Premises Requirements



The first phase takes account of the net changes in the economy i.e. the growth and decline of particular sectors. The sectoral employment projections are converted to Use Class. This provides an indication of the spread of future employment change across the full range of planning Use Classes and none. From that point onward the focus is upon the B Use Class, with other evidence documents more suited to informing the detailed requirements for A, C and D Use Classes (e.g. retail and leisure studies and infrastructure development plans). The net employment changes in the B Use Class are then converted to property and land requirements using employment and development density assumptions.

The second phase then considers wider market factors, particularly the need to recognise the churn in the economy and the associated need to replace and upgrade property stocks. For example, whilst the manufacturing sector as a whole has experienced well-documented decline in its employment base, there has been a continued demand for newly constructed premises within which to operate. This demand can be driven by existing companies needing more/less space, a different location, or a different type of premises. It can also be driven by new companies in the market, which may not find the right type of property available in the right location within the market. As a result, whilst overall a sector may be in decline (although this still applies to growing

[17] There is no double counting of the 2016 data. 2011-16 includes up to 2016. 2016-33 includes change from 2016.

sectors too), there are changes beneath the surface that continue to drive demand. This can be a particular issue where existing stocks are ageing or where vacant sites are no longer in the locations that are suitable to modern occupiers. This also ensures provision is made for sites or premises that might be lost from employment use to other uses. Also within Phase 2, the assessment builds in an allowance for choice and flexibility. This element needs to take account of offering location choice as well as choice in terms of the type of property and setting.

Within the detailed assumptions employed as part of this model, local evidence has been used to ensure the approach is appropriate to the FEMA. The results of the assessment approach are also validated through a review of historic levels of development activity as recorded through the Councils' monitoring records. Further details of the method are set out within the remainder of the chapter and Appendix 2. For ease of reading all figures are rounded throughout this chapter. As a result some tables may not sum exactly.

It should be noted that this assessment is intended as an overarching strategic assessment for the FEMA. It was agreed that local commercial market consultation will be undertaken at district level. Detailed supply side analysis is also to be undertaken at district level.

4.2 Phase 1 - Net Additional Changes

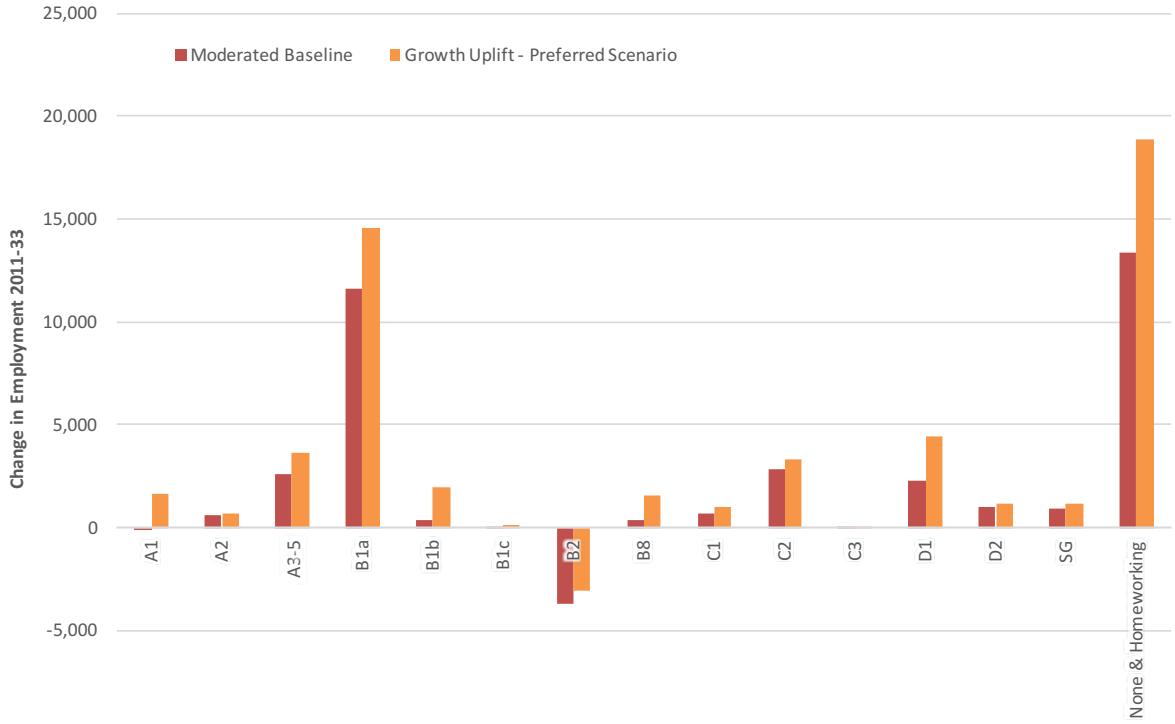
4.2.1 Employment Change by Use Class

Figure 4.2 shows forecast net employment change across Use Classes. This is based on a translation of employment by sector to Use Classes. The matrix that is used to make this translation is set out at Appendix 2 to this report. A headline schedule of use classes is set out at Figure 4.3 for those that are not familiar with the terminology.

The figure illustrates a number of important points.

- Firstly, that employment is spread across the Use Classes and is not confined to the B Use Class, which has traditionally been seen as the 'employment' category. Future jobs will be accommodated in a wide range of uses including A, B, C and D.
- Secondly, the dominance of jobs that fall outside any of the Use Classes, classified in the figure as 'none and homeworking'. This includes homebased employment, but also peripatetic working and jobs that take place within the workspace of others (e.g. cleaning).
- Thirdly, the forecast growth in B1a office based employment and decline in B2 general industry (manufacturing) based employment.

Figure 4.2 Employment Change by Use Class 2011-33



Source: HJA

Figure 4.3 Use Classes Summary

Use Class	Description
A1	Retail
A2	Financial and Professional Services
A3	Restaurants and Cafes
A4	Drinking Establishments
A5	Hot Food Takeaways
B1a	Offices (other than those within A2)
B1b	Research and Development
B1c	Light Industrial
B2	General Industry
B8	Storage and Distribution
C1	Hotels
C2	Residential Institutions
C3	Dwellings
D1	Non Residential Institutions
D2	Assembly and Leisure
Sui Generis	Uses which do not fall in the above

Figure 4.4 sets out the net changes for the B Use Classes across the two separate analysis periods of 2011-16 and 2016-33 as well as the combined period. This shows that the recovery from the recession was significant in terms of the numbers of jobs added in the 2011-16 period within the office sector. Within B1a offices the level of jobs growth in the first five years is actually greater than forecast in the remaining 17 years of the analysis period. This may appear odd, but reflects the swing of the business cycle and future economic growth expectations.

When considering the implications of this change on sites and premises requirements it is necessary to convert the change in jobs to changes in full time equivalents (FTE). This ensures analysis aligns with best practice guidance setting out floorspace per FTE. Appendix 2 sets out details on the assumptions used for the conversion of jobs to FTEs and floorspace assumptions.

The most significant net growth in jobs is forecast within the B1a Office Use Class, with almost 6,000 net additional FTE jobs in the 2016-33 period. This is fuelled by forecast growth in the ICT, professional and business services sectors.

1,600 net additional FTE jobs are forecast in the 2016-33 period within the B1b Research & Development Use Class. This is substantially driven by the PHE relocation to Harlow.

Very little net change is forecast in the B1c light industrial sector, whilst there is a substantial employment decline forecast within B2 General Industry Use Class as a result of continued expectations of contraction in manufacturing employment.

1,000 net additional FTE jobs are forecast in the 2016-33 period within the B8 Storage and Distribution Use Class.

Figure 4.4 Net Employment Change by B Use Class (Preferred Scenario)

	Jobs			FTE		
Use Class	**2011-16**	**2016-33**	**2011-33**	**2011-16**	**2016-33**	**2011-33**
B1a	7,700	6,900	14,600	6,600	5,900	12,500
B1b	300	1,700	1,900	200	1,600	1,800
B1c	0	100	100	0	100	100
B2	-700	-2,400	-3,100	-600	-2,300	-2,900
B8	400	1,100	1,500	400	1,000	1,400

Source: HJA *(figures may not sum due to rounding).*

Figure 4.5 sets out the net change in employment floorspace associated with the employment changes. These are derived using the floorspace per worker ratios set out at Appendix 2. This shows notable forecast growth in the net requirement for B1a, B1b and B8 floorspace over the period 2016-33. A modest expansion in B1c requirement is forecast. A decline of almost 90,000 sq m is forecast over the 2016-33 period within the B2 Use Class.

Figure 4.5 Net Floorspace Change by B Use Class (Preferred Scenario, sq m GEA)

Use Class	2011-16	2016-33	2011-33
B1a	87,500	77,800	165,300
B1b	13,400	93,200	106,600
B1c	1,400	3,300	4,600
B2	-24,400	-86,900	-111,300
B8	28,700	83,400	112,000

Source: HJA *(figures may not sum due to rounding).*

4.3 Phase 2 - Replacement, Choice and Flexibility

Phase 1 considered only the net changes in the economy to ensure all B Use Class activity can be accommodated within the FEMA. Phase 2 deals with the need to ensure the existing economy, and the on-going changes within it, are supported through the provision of sufficient employment property stocks.

Over the course of the analysis period there will be huge changes in the local economy as businesses grow and shrink, start and cease, and relocate in, out or within the FEMA. The stock of businesses in 2033 is likely to be very different to the stock of businesses in 2011, even if in net terms the number of jobs changes by a relatively minor amount. These changes will have implications in the commercial property market, with a need for suitable property.

4.3.1 Replacement

The methodology employed for estimating the level of replacement demand assumes that a proportion of the total existing stock of employment property needs to be replaced each year to ensure the overall stock of premises is sufficient and appropriate to modern needs, in terms of both building quality and site characteristics. This is particularly important for the manufacturing sector where on-going development of industrial premises has been observed, despite a decline in employment in the sector over many years.

With Permitted Development Rights (PDR) now in place there is increasing pressure for redevelopment of office stocks to other uses. In October 2017 this right will be extended to light industrial premises. There are also losses of employment property for other reasons, whether occupation by non-employment users (e.g. the growth in leisure occupiers) or through redevelopment for non-employment uses. It is important that any potential losses of commercial employment stocks do not hamper the performance of the economy. Minimum energy efficiency standards are also coming into force in April 2018 for commercial employment property, which will drive further the need to upgrade premises to ensure they are fit for purpose.

HJA estimates a replacement requirement equivalent to 1% of stock per annum. The details underlying this assumption are set out within Appendix 2. Data on commercial property stocks is available up to 2012. This indicated 491,000 sq m of offices and 2,474,000 sq m of industrial premises in the FEMA at 2012[18]. Commercial stock data is only split by office and industrial (including B1c, B2 and B8), and does not therefore allow fine-grained analysis by Use Class. This estimate of commercial stocks is used to calculate replacement and upgrading requirements in the

[18] Valuation Office Agency (VOA), 2012 data is used as the best available source

future. Figure 4.6 sets out the results of the analysis for the 2016-33 period. This is allocated across the constituent district areas using the 2012 baseline level of stocks.

Figure 4.6 Forecast Replacement Requirement 2016-33 (sq m)

Use	Total Stock (2012)	Annual Replacement	17 Year Forecast Period
Office (1% pa)	491,000	4,900	83,500
Industrial (1% pa)	2,424,000	24,200	412,100
Total	**2,915,000**	**29,200**	**495,600**

Source: HJA based on VOA *(figures may not sum due to rounding).*

4.3.2 Reuse of Employment Sites[19]

The analyses of both net additional and replacement requirements set out above do not consider whether the development activity takes place on existing employment sites (replacing one building with another on the same plot of land) or whether currently unoccupied land needs to be made available. The evidence and market observation suggest there will be elements of both, particularly as some former employment sites are lost to alternative uses e.g. to residential uses through PDRs.

HJA has interrogated district level monitoring data to identify the degree to which B Use Class completions have been achieved on previously developed B Use Class land. There has also been discussion with officers of the four district councils to understand the potential for re-use of existing employment sites. This is particularly relevant for Harlow, for example, with the relocation of PHE substantially re-using the vacated former GSK site and substantial redevelopment proposals as part of the Enterprise Zone. For the purposes of this analysis the scale of employment site re-use is calculated for each district. Based on the evidence assessed the rates are set at:

- East Herts 47%
- Epping Forest District 40%
- Harlow 70%
- Uttlesford 40%

The corollary of this is a need for the remaining requirement to be provided for through new development land (this can include previously or existing allocated but not yet taken up employment sites).

4.3.3 Development Density/Plot Ratios[20]

A site development density of 40%[21] is assumed for industrial premises development.

For offices a range of 40% to 100% is used to address the differing nature of development at 'in-town' and 'out-of-town' locations. A figure of 40% is used for out-of-town and business park type development. A figure of 100% is used to capture the higher densities achievable in town. If high-

[19] It should be noted that this re-use calculation does not relate to the re-occupation of employment premises in good condition. This analysis is solely focused on whether new development is accommodated on land previously used for B Use Class employment property.

[20] Development density assumptions, sometimes referred to as plot ratios are informed by a range of evidence including ODPM (2004) Employment Land Reviews: Guidance Note; and Yorkshire Forward (2010) Planning for Employment Land: translating Jobs into Land;

[21] i.e. 4,000 sq m of gross development per hectare (10,000 sq m)

rise development is accommodated this can lead to even higher densities being achieved. As a result the land requirement range for the office sector is wide and the floorspace figure may be a more suitable metric in some circumstances.

4.3.4 Choice & Flexibility

A percentage uplift of the combined requirement for net additional and replacement is applied to ensure an allowance for range and choice is incorporated. This uplift also builds in some additional flexibility to allow the normal frictional movement in the market. Typical frictional vacancy rates are 5-10% in a healthy market. The upper end of this range ensures some choice in the marketplace. This uplift of 10% has been applied in line with previous research undertaken by HJA and other consultants undertaking similar work.

4.4 Total Requirement – Preferred Scenario

Figure 4.7 brings together the various elements within the analysis to build a picture of future requirements, split by office and industrial.

This sets out an estimated gross level of development of approximately 161,300 sq m of offices and 505,000 sq m of industrial floorspace over the 2016-33 period. After discounting for development which will take place on previously developed employment sites, and allowing for the flexibility allowance a total requirement, requiring land provision is estimated at 86,800 sq m of offices and 261,500 sq m of industrial. In land terms this is estimated at 9-22 hectares[22] for offices and 65 hectares for industrial development.

Figure 4.7 Total Estimated Future Sites and Premises Requirements (sq m GEA unless stated) – FEMA 2016-33

	Office	Industrial
Replacement Provision (A)	83,500	412,200
Net Additional Requirement (B)	77,800	92,800
Gross Requirement (C=A+B)	161,300	505,000
Delivered on Existing Employment Sites (D)	82,400	267,300
Net Requirement (E=C-D)	78,900	237,700
Flexibility Allowance (F)	7,900	23,800
Total Requirement (G=E+F)	86,800	261,500
Average Annual Requirement	5,106	15,382
Total Land Requirement	9 – 22 ha	65 ha
Average Annual Land Requirement	0.5 - 1.3 ha	3.8 ha

Source: HJA *(figures may not sum due to rounding).*

Appendix 3 sets out further tables for the FEMA and each of the constituent districts for the period 2011-16, 2016-33 and combined period 2011-33.

[22] The range reflects the differing assumptions set out at 4.3.3 for office development density. The decision on where in this range to sit will need to be determined on the nature of potential office development locations in an area. The floorspace figure in row G provides an indication of total development that needs to be accommodated.

4.5 Additional Provision to Balance the Labour Market

As identified in the previous chapter, the preferred scenario delivers a level of employment growth below that required to maintain existing commuting rates. To maintain this balance a further 2,100 jobs would be required. This would represent a 4% increase in the level of employment growth within the preferred scenario.

At this stage it is uncertain where these jobs will originate from. However, given that there are some uncertainties associated with forecasting and the long-term nature of Local Plans, such a scale of additional provision over the FEMA area up to 2033 does not represent any significant short-term difficulties for emerging Local Plans. In reality the additional provision may be accommodated through increased job densities and / or windfall development. Regardless, assuming the additional employment is spread across Use Classes in line with the current levels of employment growth there would be a requirement for an additional 6,400 sq m (0.6 – 1.6 hectares) of B1a office provision and 8,700 sq m (2.2 hectares) of industrial provision. The FEMA authorities are committed to working together to ensure that this additional provision will be accommodated.

4.6 Total Requirement

Figure 4.8 summarises the requirement 2016-33 for each of the four districts including the additional provision.

Figure 4.8 Total Estimated Future Sites and Premises Requirements (hectares unless stated) 2016-33

	Office	Industrial
East Herts	3-7	13
Epping Forest District	2-5	14
Harlow	2-4	16
Uttlesford	2-5	22
Additional Provision to Balance Labour Market	*1–2*	*2*
West Essex and East Herts FEMA	**10-24**	**68**

Source: HJA *(figures may not sum due to rounding).*

4.7 Validation

The figures set out above take account of forecast labour demand (EEFM econometric forecasts and local intelligence on additional economic growth opportunities), and labour supply (population projections linked to the housing OAN). It is important to also consider historic monitoring data in order to assess previous levels of development. Each of the constituent districts will also need to consider local commercial market factors when preparing their local level evidence.

HJA has compiled available monitoring data from the four districts. The time periods for which information is available and the level of detail available is not consistent across all four districts. HJA has therefore sought to compile the most consistent dataset possible. This has included close liaison with officers of the four councils to ensure data is correctly understood.

Figure 4.9 sets out the levels of B Use Class gross completions on an annual average basis. The way in which data is recorded does not allow a split between the sub B Use Classes. The annual average

approach allows comparison over inconsistent time periods. On the basis of all the data available the longer run annual average level of B Use Class development is approximately 48,000 sq m per annum. Over the period since 2011 the average is lower at approximately 32,800 sq m per annum. This reduction reflects a weakening of the commercial development market in this period.

Figure 4.9 Historic Levels of Gross B Use Class Development

	Data Span	Average Annual Gross Completions (full data span)	Average Annual Gross Completions (2011 onwards)
East Herts	2007-16	10,290	7,830
Epping Forest	2006-15	19,180	11,910
Harlow	2011-16	4,730	4,730
Uttlesford	2004-16	13,770	8,300
FEMA		**47,970**	**32,760**

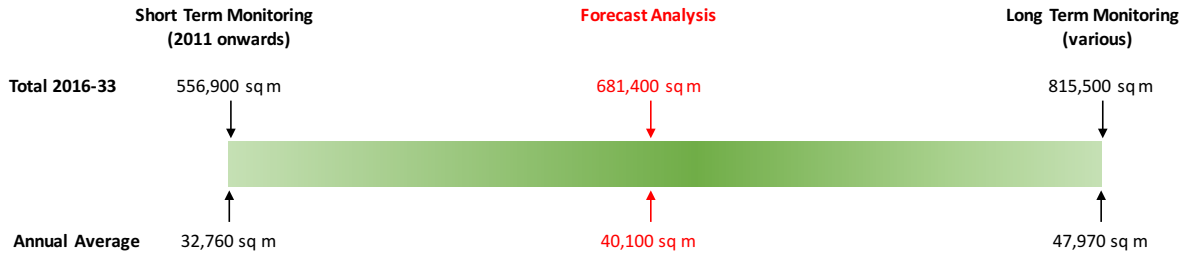
Source: HJA based on district level monitoring records

Using the FEMA averages above as a basis for projecting future levels of gross completions would suggest a range of 556,900 – 815,500 sq m across the 17-year period 2016-33.

Using the data from figure 4.7 row C (666,300 sq m) and the additional requirement to balance the labour market (15,100 sq m) the forecast analysis indicates a gross level of development required across the FEMA of 681,400.

Figure 4.10 illustrates the relationship between the historic monitoring data and the forecast requirements. This shows forecast requirements towards the middle of this range. What does this tell us? This indicates that the forecast analysis is not suggesting a level of development across the FEMA that is either well below or well above historic averages. It is suggesting a level of development higher than has been experienced in the most recent past. It is suggesting a level of development below the long-term average, which is influenced by strong development activity in the 2006/7 – 2009/10 period.

Figure 4.10 Comparing Historic Data with Forecast Analysis[23]



On this basis there will need to be an improvement in development activity compared to recent years in order to achieve the levels of forecast requirement.

[23] Figure 4.10 includes the heading Long Term Monitoring (Various). The 'various' relates to the mix of time periods for which longer term monitoring data is available. These time periods are set out within figure 4.9.

5 Conclusions

This report considers the four core objectives set out at section 1.2:

5.1 Appraisal of the 2016 EEFM

The appraisal of the EEFM 2016 edition found a number of areas of concern. Most notably the spatial distribution of forecast employment growth across the FEMA. Analysis of the most recent, and time series data suggested the level of growth attributed to East Herts District within the EEFM 2016 was inconsistent with the evidence. On the basis of the review of the EEFM it was agreed that a moderated baseline scenario should be prepared. This apportioned growth across the constituent districts within the FEMA in line with the EEFM 2014 edition. Other moderations were also made to sectoral performance.

5.2 Moderated Baseline

The moderated baseline was developed drawing on both the 2014 and 2016 editions of the EEFM. This set out a 'business as usual' forecast of 33,100 jobs across the FEMA over the period 2011-33. This represented a growth of 16% in employment from its 2011 level. Figure 5.1 summarises the forecast jobs change by district.

Figure 5.1 Moderated Baseline – Job Growth by District 2011-33

District	Jobs
East Herts	9,400
Epping Forest	9,800
Harlow	6,700
Uttlesford	7,200
FEMA	**33,100**

5.3 Higher Growth Scenarios

The evidence for higher growth scenarios was considered. Assessment of the projected growth in labour supply, aligned to the objectively assessed need for housing in the FEMA, suggested a need for a substantially higher level of job creation to balance the labour market. An additional 20,000 jobs would be required to maintain 2011 commuting rates and avoid an unhealthy level of unemployment.

Four core drivers of higher employment growth were identified and assessed. These are:

- The relocation of Public Health England to Harlow, creating an additional 3,250 jobs in the area above the moderated baseline.
- The planned growth of Stansted Airport, creating an additional 6,750 jobs in the area above the moderated baseline.
- The economic development efforts at Harlow, including the Enterprise Zone, creating an additional 2,500 jobs in the area above the moderated baseline.
- The employment implications of higher population projections, creating an additional 5,400 jobs in the area above the moderated baseline.

In aggregate the four growth drivers were identified as having the potential to deliver 17,900 jobs in addition to the moderated baseline. A preferred scenario was developed and agreed including these four drivers, delivering a total jobs growth of 51,000 over the period 2011-33. Figure 5.2 summarises the forecast jobs change by district.

Figure 5.2 Preferred Scenario – Job Growth by District 2011-33

District	Jobs
East Herts	10,800
Epping Forest	10,800
Harlow	13,400
Uttlesford	16,000
FEMA	**51,000**

The preferred scenario remains 2,100 jobs below the level required to balance the labour market. Whilst it was not certain where such jobs would emerge from at the current time, given that there are some uncertainties associated with forecasting and the long-term nature of Local Plans, such a scale of additional provision over the FEMA area up to 2033 does not represent any significant short-term difficulties for emerging Local Plans. In reality the additional provision may be accommodated through increased job densities and / or windfall development. The FEMA authorities are committed to working together to ensure that this additional provision will be accommodated.

5.4 Future B Use Class Sites and Premises Requirement

An assessment of the future B Use Class employment sites and premises requirements was undertaken. This included a consideration of the changes required to accommodate the forecast growth in the economy under the preferred scenario, as well as provision to ensure the ongoing strength of the existing economy. The analysis of future requirements considered the 2016-33 period.

Analysis of forecast employment indicated that a substantial proportion of forecast job growth would lie outside the B Use Class. The largest requirement actually falls within the 'none and homeworking' category, encompassing both home based working and peripatetic employment. There is also forecast job growth across the A, B, C, D and Sui Generis Use Classes. Within the B Use Class the greatest growth in jobs falls within the B1a office Use. There is also growth in B1b, B1c and B8 requirements. Employment within the B2 Use Class is forecast to decline.

Figure 5.3 summarises the assessment of future requirements for the preferred scenario. This is subdivided into office and industrial classifications.

Within the office sector there is forecast to be a requirement for 77,800 sq m of new floorspace to accommodate expansion of the economy. In addition, a further 83,500 sq m of office floorspace will be required to ensure a healthy stock of premises to accommodate the existing economy. In total, a requirement for 161,300 is identified. The analysis has identified that around half of this can be delivered through the reuse of previously developed employment sites. After taking this into account, and making an adjustment for choice and flexibility the remaining requirement is 86,800 sq m. This will require approximately 9-22 hectares of land, developing on the density of development.

The lower figure relates to higher density town centre type development. The higher figure relates to lower density business park type development.

Within the industrial sector there is a forecast requirement for 92,800 sq m to meet the expansion of the economy. The greatest driver in this sector will be replacement provision, to ensure modern stocks to meet the needs of the existing economy. This will create a requirement for 412,200 sq m. In combination, a total requirement of 505,000 sq m is forecast. Around half of this can be met through the redevelopment of previously used employment sites. The remainder, with an allowance for choice and flexibility is estimated at 261,500 sq m. This will require approximately 65 hectares of land over the period 2016-33.

Figure 5.3 Preferred Scenario - Total Estimated Future Sites and Premises Requirements (sq m GEA unless stated) – FEMA 2016-33

	Office	Industrial
Replacement Provision (A)	83,500	412,200
Net Additional Requirement (B)	77,800	92,800
Gross Requirement (C=A+B)	161,300	505,000
Delivered on Existing Employment Sites (D)	82,400	267,300
Net Requirement (E=C-D)	78,900	237,700
Flexibility Allowance (F)	7,900	23,800
Total Requirement (G=E+F)	86,800	261,500
Average Annual Requirement	5,106	15,382
Total Land Requirement	9 – 22 ha	65 ha
Average Annual Land Requirement	0.5 - 1.3 ha	3.8 ha

Source: HJA *(figures may not sum due to rounding).*

As noted above, there remains a small shortfall in forecast jobs to balance the labour market and maintain 2011 commuting rates. It is estimated, in line with the core analysis, without any increase in densities that a further 6,400 sq m of office floorspace and 8,700 sq m industrial floorspace will be required to accommodate the shortfall. This will require a further 2.8 – 3.8 hectares of land in addition to the requirements set out in figure 5.3.

Figure 5.4 sets out the breakdown by district. Whilst not significant, the unallocated figure will need to be accommodated within the FEMA through agreement between the districts.

Figure 5.4 Total Estimated Future Sites and Premises Requirements (ha unless stated) 2016-33

	Office	Industrial
East Herts	3-7	13
Epping Forest District	2-5	14
Harlow	2-4	16
Uttlesford	2-5	22
Additional Provision to Balance Labour Market	*1–2*	*2*
West Essex and East Herts FEMA	**10-24**	**68**

Source: HJA *(figures may not sum due to rounding).*

Appendix 1: List of Consultees

Louise Aitken – Skills, Essex County Council/South East LEP

Caroline Betts – Employment & Skills Board, Essex County Council/South East LEP

Alison Blom Cooper – Planning, Epping Forest District Council

David Coleman – Planning, Epping Forest District Council

Rich Cooke – Planning, Essex County Council

Marc Davis – Princess Alexandra Hospital NHS Trust

Jan Hayes-Griffin – Hertfordshire County Council

Graham Holmes – Planning, Uttlesford District Council

Julie Houston – Economic Development, Harlow Council

Jonathan Lee – Opinion Research Services (ORS)

Paul MacBride – Planning, Harlow Council

Sean Perry – Economic Development, Essex County Council

Jenny Pierce – Planning, East Herts Council

Claire Sime – Planning, East Herts Council

Vicki Willis – Economic Development, Epping Forest District Council

Adam Wood – Hertfordshire LEP

Other stakeholders that participated in workshop discussions included:

Robert Edge – Invest in Essex

James Farrar – ATLAS

Vicky Forgione – Harlow Council

Richard Fox – Uttlesford District Council

John Houston – One Epping Forest

Joel John – Essex County Council

Dinah Roake – ATLAS

Chloe Salisbury - Arup

David Sprunt – Essex County Council

Mary Young – Essex County Council

Appendix 2: Detailed Methodology Information

SIC to Use Class Matrix

The allocation of employment by sector to Use Class is something of an imprecise science and requires some level of subjective assumption. HJA uses a three stage approach to develop a locally bespoke matrix to translate sectoral employment to Use Class.

- The first phase is a standardised matrix, which allocates employment in each 4 digit SIC sector of the economy to one or more Use Classes. For example, the manufacture of mattresses is allocated 100% to B2. Retail sale of furniture etc is allocated 100% to A1. General cleaning of buildings is allocated 10% to B1a (representing the management activities of such a company) and 90% to 'none' as cleaners will be involved in cleaning other buildings, not their own workplace. As a result those activities which are located in the workplace of others are not allocated to a Use Class. This includes activities such as mobile repair services, construction activities, sales agents, market trading, many transport and delivery jobs, driving instructors etc.
- The second phase adjusts for local patterns of homeworking. This utilises data drawn from the 2011 Census of Population for the FEMA. This identifies the percentage of jobs in each sector that are fulfilled through homeworking. For example, 10% of manufacturing workers list homeworking. Therefore the master matrix is adjusted so that 90% of jobs are in B2 and 10% homeworking. Further detail on homeworking is set out below the table.
- The third phase weights the matrix to the local area. That is, the EEFM provides data for 31 sectors, each of these comprises a number of fine grained 4-digit SIC sectors. The employment data for the more than 600 4-digit SIC sectors is fed into the stage two matrix, to generate a weighted matrix for the 31 EEFM sectors. Why is this important? Some of the sectors in the EEFM include a mix of different activities e.g. sales agents and wholesalers and car sales all fall within the same sector. These will draw upon different Use Classes. If one area has lots of car sales activities but very little wholesale this will require a different mix of uses than an area that has a lot of wholesalers and very few car showrooms. So this local weighting ensures the matrix is appropriate to the local area.

The final matrix used is set out on the following page.

Figure A2.1 SIC to Use Class Matrix

	A1	A2	A3-5	B1a	B1b	B1c	B2	B8	C1	C2	C3	D1	D2	SG	None & Homeworking
Agriculture	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Mining & quarrying	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Manufacturing - food manufacturing	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	10%
Manufacturing - general manufacturing	0%	0%	0%	0%	0%	4%	83%	0%	0%	0%	0%	0%	0%	0%	14%
Manufacturing - chemicals only	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	10%
Manufacturing - pharmaceuticals	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	10%
Manufacturing - metals manufacturing	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	10%
Manufacturing - transport equipment	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	10%
Manufacturing - electronics	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	10%
Utilities	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	72%	28%
Waste & remediation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	72%	28%
Construction	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%
Wholesale	2%	0%	0%	1%	0%	0%	0%	66%	0%	0%	0%	0%	0%	21%	9%
Retail	86%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	1%	10%
Land transport	0%	0%	0%	30%	0%	0%	0%	16%	0%	0%	0%	0%	0%	2%	52%
Water & air transport	0%	0%	0%	0%	0%	0%	0%	23%	0%	0%	0%	0%	0%	0%	77%
Accommodation & food services	9%	0%	55%	0%	0%	2%	0%	0%	14%	0%	0%	0%	0%	0%	20%
Publishing & broadcasting	0%	0%	0%	62%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	21%
Telecoms	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Computer related activity	0%	0%	0%	75%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	21%
Finance	0%	29%	0%	64%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Real estate	0%	22%	0%	62%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%
Professional services	0%	2%	0%	77%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
Research & development	0%	0%	0%	1%	79%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%
Business services	1%	0%	0%	28%	3%	1%	1%	1%	1%	1%	1%	1%	1%	9%	54%
Employment activities	14%	1%	6%	7%	0%	0%	10%	8%	1%	7%	0%	17%	0%	1%	27%
Public administration	0%	0%	0%	64%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	11%
Education	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	91%	0%	0%	9%
Health & care	0%	0%	0%	10%	0%	0%	0%	0%	0%	50%	0%	32%	0%	0%	8%
Arts & entertainment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	47%	24%	22%
Other services	39%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	7%	0%	10%	30%
TOTAL	11%	1%	4%	17%	2%	0%	8%	6%	1%	5%	0%	13%	1%	4%	27%

Homeworking

It is important to consider the effects of homeworking. The 2011 Census of Population data shows us that homeworking accounts for some 12% of all workers. Data on homeworking by sector is relatively limited and crude because of the aggregation of broad sectors. Agriculture and others is the sector with the highest reported homeworking.

In some sectors, homeworking may be a reflection of home-based businesses, which might include some itinerant working, e.g. the construction sector. The level of detail in the data does not allow clear conclusions to be drawn.

The SIC/Use Class matrix used for assessing employment by Use Class already makes allowance for employment that does not require land. This could include some who report being home-based, or itinerant workers. It could also include those with home-based businesses in a wide range of sectors. It would not therefore be appropriate to apply the figures from the Census as standardised deductions by sector.

HJA has used the 2011 Census data as a starting point for the 'none and homeworking' category, with further allowance for other activities which are not homebased but which do not require sites and premises provision.

Figure A2.2 Homeworking in the FEMA 2011 Census of Population

	West Essex and East Herts
All categories: Industry	12%
A, B, D, E Agriculture, energy and water	28%
C Manufacturing	10%
F Construction	16%
G Wholesale and retail trade; repair of motor vehicles and motor cycles	8%
H Transport and storage	8%
I Accommodation and food service activities	11%
J Information and communication	21%
K Financial and insurance activities	7%
L Real estate activities	16%
M Professional, scientific and technical activities	20%
N Administrative and support service activities	15%
O Public administration and defence; compulsory social security	5%
P Education	8%
Q Human health and social work activities	8%
R, S, T, U Other	16%

Jobs to FTE Conversion

It is necessary to convert the change in employment measured in jobs to full time equivalents (FTE)s. The following sets out the method used by HJA to make this conversion.

The first stage includes identifying the mix of full-time and part-time jobs by sector relevant for the study area. HJA utilises the ONS Business Register and Employment Survey (BRES) which provides local data on a sectoral basis.

The second stage translates the part-time element into FTEs. The third edition (2015) of the Home and Communities Agency's (HCA) Employment Density Guide recommends a ratio of 2:1 part-time staff to FTE. This is based on a study of (ASHE) data nationally. This ratio is also supported by an analysis of 2011 Census data for the FEMA, which indicates that the average part-time employee works around 17.5 hours per week, half of the full-time figure of 35 hours per week. Part-time jobs should therefore be weighted to an equivalent of 0.5 FTE and fed back into the model to contribute to the total FTE figure.

Using BRES data, it has been possible to determine a ratio of full-time to part-time jobs for each sector in the forecast model. An average was taken over the period 2009-15 to smooth any data anomalies. The ratios are shown in the figure below.

These FTE ratios were then fed back into the forecast model sets of forecasts across all four Districts, producing a set of FTE jobs figures.

Figure A2.3 Calculating FTE Conversion Rates

	Average PT jobs	FTE equivalent
Agriculture	26%	0.86
Mining & quarrying	1%	0.99
Manufacturing - food manufacturing	13%	0.93
Manufacturing - general manufacturing	11%	0.94
Manufacturing - chemicals only	7%	0.96
Manufacturing - pharmaceuticals	9%	0.96
Manufacturing - metals manufacturing	9%	0.95
Manufacturing - transport equipment	6%	0.97
Manufacturing - electronics	9%	0.96
Utilities	3%	0.99
Waste & remediation	6%	0.97
Construction	14%	0.93
Wholesale	14%	0.93
Retail	54%	0.73
Land transport	23%	0.88
Water & air transport	11%	0.94
Accommodation & food services	59%	0.70
Publishing & broadcasting	22%	0.89
Telecoms	11%	0.94
Computer related activity	20%	0.89
Finance	22%	0.89
Real estate	33%	0.84
Professional services	26%	0.87
Research & development	13%	0.94
Business services	44%	0.78
Employment activities	25%	0.88
Public administration	25%	0.87
Education	55%	0.73
Health & care	43%	0.79
Arts & entertainment	59%	0.71
Other services	39%	0.80
TOTAL	34%	0.83

Floorspace per Worker Assumptions

Best practice guidance[24] on employment densities uses a mix of net internal area (NIA), gross internal area (GIA) and gross external area (GEA). To convert to GEA an uplift is provided, +20% to convert NIA to GEA and +5% to convert GIA to GEA.

The table below sets out further details on assumptions in respect of average floorspace per worker.

Figure A3.4 Floorspace Per FTE

Use Class	Assumption
B1a Offices	The Employment Densities Guide (2015) provides estimates for a range of office functions ranging from 8 – 13 sq m per FTE (Net Internal Area). The higher end of this range relates to Corporate HQ and the lower end relates to call centres. Financial Services, Public Sector and Professional Services fall within the 10-12 sq m range. The Occupier Density Study (2013) indicates an average density of 10.9 sq m for the UK. On this basis, an assumption of 11 sq m per employee has been adopted, with a 20% uplift to provide Gross External Area (GEA). The utilised assumption is therefore **13.2 sq m per FTE**.
B1b R&D	The most recent (2015) best practice guidance sets out a range of 40-60 sq m (NIA) for R&D B1b premises. The mid point of this range has been adopted, and uplifted by 20% to convert to GEA. A figure of **60 sq m per FTE** has been used within the analysis.
B1c Light Industry	The most recent (2015) best practice guidance indicates a figure for B1(c) light industry at 47 sq m per FTE (NIA). Allowances are made to align to GEA (+20%) with a final assumption of **56.4 sq m per FTE (GEA).**
B2 General Industry	B2 General is estimated at 36 sq m per FTE (GIA). Allowances are made to align to GEA (+5%) with a final assumption of **37.8 sq m per FTE (GEA).**
B8 Storage & Distribution	Latest available estimates suggest a range of 70 – 95 sq m per FTE. 70 sq m per employee (GEA) for 'final mile' distribution centres and 95 sq m per employee (GEA) for national distribution centres. There is the potential for a mix of both and **80 sq m per FTE** has been adopted for this analysis.

[24] Homes and Communities Agency, Employment Density Guide 3rd Edition, November 2015.

Changing Employment Densities

Research publications setting out employment densities have indicated a trend towards increasing density of occupation of office space (i.e. reduced space per worker) over the last 20 years. Guidance published in 2001 indicated general office density of 19 sq m per worker (GIA) which had reduced to 13.8 sq m per worker (GIA) within the 2010 2nd edition of the guidance and a range of 9.2 – 15.0 sq m per worker in the 2015 guidance. As a result of increasing density of occupation across the whole office stock it was possible for substantial increases in employment to be accommodated within existing stocks through the reconfiguration and modernisation of space.

However, the September 2013 Occupier Density Study published by the British Council for Offices suggests this trend might be levelling off, for various reasons. This is in keeping with the findings of the 2012 and 2015 guidance documents. For the purposes of the quantitative assessment in this report it is assumed that there is no further substantive increase in the density of office occupation so as not to artificially restrict the provision of office space. However, when interpreting the results it should be considered that if the recent historic trend did continue there may be scope for a lower requirement for new office development than set out within this analysis. Particularly if there is a high proportion of call centre type occupiers.

Replacement Allowances

An allowance for replacement has been included within the methodology to encapsulate the wider changes in the economy not picked up in the employment projections. Working practices change, new technologies are adopted, and the sites and premises used by firms need to adapt to these new ways of working. The buildings vacated by some businesses may not be suitable for re-occupation by new tenants. There will also be instances where existing buildings are so dilapidated that they require complete reconstruction and replacement. The introduction of Energy Performance Certification for industrial premises may speed the need for this replacement over the period to 2033. There are also losses to other uses either through sales and lettings or redevelopment. The introduction of Permitted Development Rights (PDRs) has already impacted on the losses of office stocks and is shortly to be introduced for industrial space. Overall, there are a range of factors that underpin the need for some existing employment stocks to be replaced.

Developing a methodology to estimate the scale of replacement activity is not straightforward. As a result, the team at Hardisty Jones Associates, drawing on its experience of working with clients over a number of years, has developed a methodology which is robust in terms of its underpinning logic and the evidence used to derive assumptions.

Typically within the property sector, development appraisals on new buildings consider a 25-35 year time horizon. As a result, one may expect that after this period, a building would be ripe for replacement through dilapidation. However, data on the age of commercial employment buildings indicates a very different picture.

Data from 2004 (no more recent data has been published) for the FEMA (shown in the table below) indicates that a notable proportion of the existing[25] stocks were built pre 1940 and around 50% pre 1970. This implies that the useful lifespan of some stocks is considerable and beyond the 35 year development appraisal period.

Figure A3.5 Age of Commercial Stocks in West Essex and East Herts (2004)

	% built Pre 1940	% built 1940 - 1970	Total Pre 1970
Retail	24%	30%	54%
Office	27%	29%	56%
Factory	6%	60%	66%
Warehouse	6%	38%	44%
Total	**13%**	**43%**	**49%**

Source: Department for Communities and Local Government (CLG) archive. Total floorspace by LAD and age. 2004.

If buildings were replaced every 30 years, one would expect around 3.3% of all commercial employment property stocks to be replaced each year. Due to the existence of a substantial stock of property aged pre 1970 this assumption is not supported by the evidence and is too strong.

At the other extreme, if one assumes buildings last 200 years before being replaced, that equates to a 0.5% replacement rate each year. However, this appears to be too low, with numerous examples of buildings requiring replacement through dilapidation or loss to other activities well before they reach 200 years of age.

The reality is therefore likely to lie somewhere in between these two extremes, in the region of 1-2%. 1% is adopted as a starting assumption, with the scope for districts to consider whether local need is greater through consultation with local commercial market stakeholders and through detailed review of supply. A figure of 1% equates to the replacement of the total supply of employment premises every 100 years, although in reality that could include some premises being replaced more often and some premises not being replaced at all. It has been noted to HJA in various locations that whilst Victorian premises were constructed to last for the long term, many more modern construction methods do not last as well.

Reuse of Land

A proportion of future gross development requirements will be met through the re-use of former/existing employment sites. This can be through the immediate re-use of a site, with one building replaced by another, or with a time lag, in some cases sites are left vacant or cleared for some time before being brought forward for redevelopment. This redevelopment may include a mix of uses, some of which is within the B Use Class.

[25] This data is indicative given it is now 12 years out of date, but is used to indicate the point that much of the data has a longer economic life than may be imagined at time of construction.

Monitoring data from the four districts within the FEMA, along with discussions with planning and economic development officers have informed the assumptions used in the analysis. The historic period for which monitoring data is available varies from district to district. The quality and detail of the data also varies. HJA has therefore sought to check all its interpretation of the data with the officers to ensure it accords with local understanding.

Figure A3.6 sets out results of recent historic development activity, which formed part of the evidence to develop assumptions on the re-use of employment sites.

Figure A3.6 Historic Monitoring Data

	Data Span	Average Annual Gross Completions (full data span)	Average Annual Gross Completions (2011 onwards)	B replacing B (full data span)		B replacing B (2011 onwards)	
				Sq m	%	Sq m	%
East Herts	2007-16	10,290	7,830	6,420	62%	3,720	47%
Epping Forest	2006-15	19,180	11,910	6,580	34%	4,770	40%
Harlow	2011-16	4,730	4,730	3,340	71%	3,340	71%
Uttlesford	2004-16	13,770	8,300	4,070	25%	5,850	42%

In East Herts the long term trend has been for almost two thirds (62%) of gross B Use Class development to be achieved through the re-use of previously developed employment land. This equates to an average of 6,420 sq m per annum. This has fallen to 47% since 2011, at only 3,720 sq m per annum. A figure of 47% was adopted within the forecast analysis for the period 2016-33. Under the preferred scenario this equates to a floorspace figure of 3,950 sq m per annum. This is marginally above the short term average but comfortably below the longer term average.

In Epping Forest District recent development patterns since 2011 indicate 40% of gross development has been achieved through the redevelopment of previously developed employment land. This is slightly higher than the long term average. Over the long term an average of 6,580 sq m per annum of gross development on previously developed employment land has been achieved. This has fallen to below 5,000 sq m in recent years, reflecting the lower overall levels of development activity which are consistent across the FEMA. A figure of 40% was adopted or the forecast analysis over the period 2016-33. In absolute terms this equates to 2,790 sq m per annum, well below historic rates of site re-use.

Data for Harlow is only available from 2011 onwards. 71% of gross development has been achieved through the reuse of previously developed employment land, an average of 3,340 sq m per annum. A figure of 70% is adopted within 2016-33 forecast analysis. This equates to 10,000 sq m per annum. In absolute terms this is much higher than historic rates of re-use. This is also consistent with higher overall requirements for floorspace reflecting the employment growth focus at the town. HJA has explored the potential capacity to accommodate this high rate of replacement with officers of the council. The re-use approach accords with committed policy including the relocation of PHE into the former GSK site and the redevelopment of Templefields and Kao Park as one of the core objectives of the Enterprise Zone. Figure A3.7 lists the redevelopment opportunities which are currently

known in Harlow. This shows that at the time of writing there is a clear indication of where 170,000 sq m of gross development on previously used employment sites can be identified. It is likely that further opportunities will be identified through the forecast period.

Figure A3.7 Redevelopment Opportunity Sites at Harlow

Site	Site Area (hectares)	Indicative Floorspace (sq m)	Notes
Kao Park (EZ)	8.4	52,000	First completions and occupation 2016.
Templefields (EZ)	Up to 8	32,000	25 year project.
Midas - River Way	3.4	14,200	First occupation 2016.
GSK South – Phase 1	5.7	24,000	Based on plots 1 and 3.
GSK South – Phase 2	c6	24,000	Either letting of former GSK labs or redevelopment
East Place	1.8	10,000	Located on Templefields outside the EZ
Former Raytheon Site	2.6	13,800	Based on planning application
Total	**35.9**	**170,000**	

Within Uttlesford recent trends indicate 5,850 sq m per annum of gross development is achieved on previously developed employment land. This represents 42% of all gross development. This is higher than the long term average of 25%. A figure of 40% is used in the 2016-33 forecast analysis. This equates to an absolute level of 3,780 sq m per annum. This is below recent levels of redevelopment achieved.

References

Arup for English Partnerships (2001) Employment Densities: A Full Guide

Drivers Jonas Deloitte for OffPAT and Homes & Communities Agency (2010) Employment Densities Guide, 2nd Edition

Homes & Communities Agency (2015) Employment Density Guide, 3rd Edition

Occupier Density Study, 2013, British Council for Offices

Appendix 3: Detailed Requirement Tables

FEMA

2011-16

	Office	Industrial
Replacement Provision (A)	24,700	121,300
Net Additional Requirement (B)	87,400	19,100
Gross Requirement (C=A+B)	112,100	140,400
Delivered on Existing Employment Sites (D)	55,100	73,700
Net Requirement (E=C-D)	57,000	66,700
Flexibility Allowance (F)	5,800	6,700
Total Requirement (G=E+F)	62,800	73,400
Average Annual Requirement	12,560	14,680
Total Land Requirement (ha)	6 - 16	18
Average Annual Land Requirement (ha)	1.2 - 3.2	3.7

2016-33

	Office	Industrial
Replacement Provision (A)	83,500	412,200
Net Additional Requirement (B)	77,800	92,800
Gross Requirement (C=A+B)	161,300	505,000
Delivered on Existing Employment Sites (D)	82,400	267,300
Net Requirement (E=C-D)	78,900	237,700
Flexibility Allowance (F)	7,900	23,800
Total Requirement (G=E+F)	86,800	261,500
Average Annual Requirement	5,110	15,380
Total Land Requirement (ha)	9 - 22	65
Average Annual Land Requirement (ha)	0.5 - 1.3	3.8

2011-33

	Office	Industrial
Replacement Provision (A)	108,200	533,500
Net Additional Requirement (B)	165,200	111,900
Gross Requirement (C=A+B)	273,400	645,400
Delivered on Existing Employment Sites (D)	137,500	341,000
Net Requirement (E=C-D)	135,900	304,400
Flexibility Allowance (F)	13,700	30,500
Total Requirement (G=E+F)	149,600	334,900
Average Annual Requirement	7,820	17,300
Total Land Requirement (ha)	15 - 37	84
Average Annual Land Requirement (ha)	0.7 - 1.7	4.3

East Herts

2011-16

	Office	Industrial
Replacement Provision (A)	8,900	33,400
Net Additional Requirement (B)	30,300	800
Gross Requirement (C=A+B)	39,200	34,200
Delivered on Existing Employment Sites (D)	18,400	16,100
Net Requirement (E=C-D)	20,800	18,100
Flexibility Allowance (F)	2,100	1,800
Total Requirement (G=E+F)	22,900	19,900
Average Annual Requirement	4,580	3,980
Total Land Requirement (ha)	2 - 6	5
Average Annual Land Requirement (ha)	0.4 - 1.2	1.0

2016-33

	Office	Industrial
Replacement Provision (A)	30,300	113,400
Net Additional Requirement (B)	20,600	-21,200
Gross Requirement (C=A+B)	50,900	92,200
Delivered on Existing Employment Sites (D)	23,900	43,300
Net Requirement (E=C-D)	27,000	48,900
Flexibility Allowance (F)	2,700	4,900
Total Requirement (G=E+F)	29,700	53,800
Average Annual Requirement	1,750	3,170
Total Land Requirement (ha)	3 - 7	13
Average Annual Land Requirement (ha)	0.2 - 0.4	0.8

2011-33

	Office	Industrial
Replacement Provision (A)	39,200	146,800
Net Additional Requirement (B)	50,900	-20,400
Gross Requirement (C=A+B)	90,100	126,400
Delivered on Existing Employment Sites (D)	42,300	59,400
Net Requirement (E=C-D)	47,800	67,000
Flexibility Allowance (F)	4,800	6,700
Total Requirement (G=E+F)	52,600	73,700
Average Annual Requirement	2,390	3,350
Total Land Requirement (ha)	5 - 13	18
Average Annual Land Requirement (ha)	0.2 - 0.6	0.8

Epping Forest District

2011-16

	Office	Industrial
Replacement Provision (A)	5,600	24,900
Net Additional Requirement (B)	13,900	-28,900
Gross Requirement (C=A+B)	19,500	-4,000
Delivered on Existing Employment Sites (D)	7,800	-1,600
Net Requirement (E=C-D)	11,700	-2,400
Flexibility Allowance (F)	1,200	-200
Total Requirement (G=E+F)	12,900	-2,600
Average Annual Requirement	2,580	-520
Total Land Requirement (ha)	1 - 3	-1
Average Annual Land Requirement (ha)	0.2 - 0.6	-0.1

2016-33

	Office	Industrial
Replacement Provision (A)	18,900	84,700
Net Additional Requirement (B)	14,000	1,000
Gross Requirement (C=A+B)	32,900	85,700
Delivered on Existing Employment Sites (D)	13,200	34,300
Net Requirement (E=C-D)	19,700	51,400
Flexibility Allowance (F)	2,000	5,100
Total Requirement (G=E+F)	21,700	56,500
Average Annual Requirement	1,280	3,320
Total Land Requirement (ha)	2 - 5	14
Average Annual Land Requirement (ha)	0.1 - 0.3	0.8

2011-33

	Office	Industrial
Replacement Provision (A)	24,500	109,600
Net Additional Requirement (B)	27,900	-27,900
Gross Requirement (C=A+B)	52,400	81,700
Delivered on Existing Employment Sites (D)	21,000	32,700
Net Requirement (E=C-D)	31,400	49,000
Flexibility Allowance (F)	3,200	4,900
Total Requirement (G=E+F)	34,600	53,900
Average Annual Requirement	1,570	2,450
Total Land Requirement (ha)	3 - 9	13
Average Annual Land Requirement (ha)	0.1 - 0.4	0.6

Harlow

2011-16

	Office	Industrial
Replacement Provision (A)	5,500	42,300
Net Additional Requirement (B)	19,600	8,000
Gross Requirement (C=A+B)	25,100	50,300
Delivered on Existing Employment Sites (D)	17,600	35,200
Net Requirement (E=C-D)	7,500	15,100
Flexibility Allowance (F)	800	1,500
Total Requirement (G=E+F)	8,300	16,600
Average Annual Requirement	1,660	3,320
Total Land Requirement (ha)	1 - 2	4
Average Annual Land Requirement (ha)	0.2 - 0.4	0.8

2016-33

	Office	Industrial
Replacement Provision (A)	18,500	143,700
Net Additional Requirement (B)	29,200	52,500
Gross Requirement (C=A+B)	47,700	196,200
Delivered on Existing Employment Sites (D)	33,400	137,300
Net Requirement (E=C-D)	14,300	58,900
Flexibility Allowance (F)	1,400	5,900
Total Requirement (G=E+F)	15,700	64,800
Average Annual Requirement	920	3,810
Total Land Requirement (ha)	2 - 4	16
Average Annual Land Requirement (ha)	0.1 - 0.2	1.0

2011-33

	Office	Industrial
Replacement Provision (A)	24,000	186,000
Net Additional Requirement (B)	48,800	60,500
Gross Requirement (C=A+B)	72,800	246,500
Delivered on Existing Employment Sites (D)	51,000	172,500
Net Requirement (E=C-D)	21,800	74,000
Flexibility Allowance (F)	2,200	7,400
Total Requirement (G=E+F)	24,000	81,400
Average Annual Requirement	1,090	3,700
Total Land Requirement (ha)	2 - 6	20
Average Annual Land Requirement (ha)	0.1 - 0.3	0.9

Uttlesford

2011-16

	Office	Industrial
Replacement Provision (A)	4,700	20,700
Net Additional Requirement (B)	23,600	39,200
Gross Requirement (C=A+B)	28,300	59,900
Delivered on Existing Employment Sites (D)	11,300	24,000
Net Requirement (E=C-D)	17,000	35,900
Flexibility Allowance (F)	1,700	3,600
Total Requirement (G=E+F)	18,700	39,500
Average Annual Requirement	3,740	7,900
Total Land Requirement (ha)	2 - 5	10
Average Annual Land Requirement (ha)	0.4 - 1	2.0

2016-33

	Office	Industrial
Replacement Provision (A)	15,800	70,400
Net Additional Requirement (B)	14,000	60,500
Gross Requirement (C=A+B)	29,800	130,900
Delivered on Existing Employment Sites (D)	11,900	52,400
Net Requirement (E=C-D)	17,900	78,500
Flexibility Allowance (F)	1,800	7,900
Total Requirement (G=E+F)	19,700	86,400
Average Annual Requirement	1,159	5,082
Total Land Requirement (ha)	2 - 5	22
Average Annual Land Requirement (ha)	0.1 - 0.3	1.3

2011-33

	Office	Industrial
Replacement Provision (A)	20,500	91,100
Net Additional Requirement (B)	37,600	99,700
Gross Requirement (C=A+B)	58,100	190,800
Delivered on Existing Employment Sites (D)	23,200	76,400
Net Requirement (E=C-D)	34,900	114,400
Flexibility Allowance (F)	3,500	11,500
Total Requirement (G=E+F)	38,400	125,900
Average Annual Requirement	1,745	5,723
Total Land Requirement (ha)	4 - 10	31
Average Annual Land Requirement (ha)	0.2 - 0.5	1.4