

Validation of Growth Scenarios for the Review of the RSS for the East of England

Cambridgeshire - technical study &
interim findings

December 2008

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Executive summary

Introduction

1. The East of England Regional Assembly (EERA) has issued guidance on housing and employment growth as the first stage of a review of the Regional Spatial Strategy (RSS), looking at the development needs of the region from 2021 to 2031. SQW Consulting was commissioned by Cambridgeshire County Council to provide technical input to a validation exercise of six growth scenarios, together with three ‘baseline’ forecasts.
2. Two of the scenarios are variants on a continuation of the dwelling growth targets adopted for the current RSS. Two scenarios are based on the ‘lower’ and ‘upper’ end ranges of the housing requirements of the English regions, as advised by the National Housing and Planning Advice Unit to central government in June 2008. These are informed by national household projections as well as assessments of ‘affordability ratios’, which relate lower quartile employee earnings to lower quartile house prices. The final two scenarios are based on achieving one of the main goals of the Regional Economic Strategy – annual growth in real workplace-based GVA of 2.3% per capita, 2008 to 2031. One of the ‘GVA growth’ scenarios is unconstrained by the current RSS dwelling targets, whilst the other is constrained.
3. The ‘baseline’ forecasts differ because different assumptions are made (i) about future levels of net international migration (as future government policy will be more restrictive than in the period 2004 to 2007) and (ii) with respect to new household formation.

Assumptions (Chapters 2 & 3)

4. The first task was to examine the key assumptions which form the basis of the modelled scenarios and forecasts, prepared by Oxford Economics (OE) using their bespoke East of England Forecasting Model. This was carried out in two stages (i) a commentary on the basic model, including sources of data and definitions of critical variables, such as the ‘workplace population’ and (ii) testing the robustness of the model insofar as it relates to Cambridgeshire and its constituent districts for the period 2001 to 2007. The aim was to examine how well the OE model ‘tells the story’ when compared with a range of monitoring information. Conclusions are that:
 - County-level population growth assumed 2001/07 by OE exceeds the estimates produced by Cambridgeshire County Council’s Research Group (CCCRG), (42,700 as compared with 34,700). OE estimated significantly higher growth in Cambridge City, East Cambridgeshire and Huntingdonshire; CCCRG modelled higher growth than OE in South Cambridgeshire.
 - The estimates of increases in dwelling numbers are similar for the OE and CCCRG models at a county level, although there are some differences for individual districts.
 - The CCCRG figures show a more marked reduction in household size than does the OE model (by 0.4 persons per household, as compared with 0.2, 2001 to 2007). Such

a difference has important implications if continued long-term. For any given increase in number of dwellings, the OE model will assume significantly higher population growth than the CCCRG model.

- The OE model assumes a larger increase in the number of employed residents in Cambridgeshire than does the Labour Force Survey (22,700 as compared with 17,500, 2001 to 2007).
 - Changes in ‘workplace population’ estimates can only be compared for the period since 2004. Whilst the OE model suggests an increase of 49,600 people working in Cambridgeshire between 2004 and 2007 the Annual Population Survey shows lower growth of 8,300 – although this is subject to sampling error.
 - The OE model suggests that the numbers of jobs in Cambridgeshire increased by 51,300 in the 3 years 2004 to 2007 – accounting for 43% of the region’s job growth overall (117,700). As a consequence, the OE model indicates that net commuting to/from Cambridgeshire changed significantly over the period 2001 to 2007. In 2001 it is estimated to be -7,100 (net out-commuting); by 2007 the estimate is + 15,300 (net in-commuting). In contrast the Annual Population Survey suggests that net in-commuting in 2007 is +1,000.
5. The main conclusion drawn from the comparison of the OE model’s outputs for the period 2001 to 2007 with other data sources is that the model appears to be over-estimating population and employment growth. This has important implications for the forecasts for future years – including a possible over-statement of population and job growth – and linked growth in numbers of employed residents and the workplace population.

Allocation of housing, jobs, etc. to Cambridgeshire & districts (Chapter 4)

6. The distribution of dwellings to the region’s local authorities in each of the four ‘dwelling-led’ growth scenarios follows the spatial pattern implied by the targets of the East of England Plan. Consequently differences primarily reflect the scale of proposed development. Only two scenarios are not ‘dwellings-led’ – those based on achievement of Regional Economic Strategy GVA growth targets.
7. The **annual** dwelling targets 2008 to 2031 indicated by the scenarios and baseline forecasts are as follows:
- Scenario 1: RSS H1 policy with residual annual housing targets (post 2006) continued to 2031: 27,200 dwellings regionally and 3,920 for Cambridgeshire
 - Scenario 2: RSS H1 policy with 2001-2021 annual target continued to 2031: 26,400 dwellings regionally and 3,810 for Cambridgeshire
 - Scenario 3: NHPAU ‘lower end range’ housing supply: 30,600 dwellings regionally and 4,310 for Cambridgeshire

- Scenario 4: NHPAU ‘upper end range’ housing supply: 39,200 dwellings regionally and 5,230 for Cambridgeshire
 - Scenario 5: GVA growth at RES targets, unconstrained: 33,200 dwellings regionally and 4,820 for Cambridgeshire
 - Scenario 6: GVA growth at RES targets, constrained by RSS housing targets: 27,200 dwellings regionally and 3,930 for Cambridgeshire
 - Baseline: 29,800 dwellings regionally and 4,540 for Cambridgeshire
 - Baseline with low international migration: 27,100 dwellings regionally and 4,190 for Cambridgeshire
 - Baseline with high ‘household formation’ rates: 38,400 dwellings regionally and 5,520 for Cambridgeshire.
8. These targets can be compared with the most recent completions (for the year 2006/07): 24,800 dwellings regionally and 3,640 for Cambridgeshire. On this evidence the building rates required by Scenarios 1, 2 and 6 are reasonable (although the current recession will impact on achievement). However, other Scenarios and – significantly - the baselines, pose a considerable challenge. The highest dwelling growth rate is required by Scenario 4 at 5,230 per annum, 37% higher than the rate assumed in Scenario 2.
9. All Scenarios and the baseline forecasts incorporate assumptions which involve relatively high employment growth for the region and Cambridgeshire. This results in significantly reduced net out-commuting from the region by 2031; by then the highest net out-commuting is assumed by Scenario 2, at 128,500. This is considerably lower than the 196,000 net out-commuting level recorded by the Census in 2001. Scenario 6, with a high rate of employment growth, results in a move to modest net in-commuting to the region of 3,500 by 2031.
10. All Scenarios and the baseline forecasts result in significant net in-commuting to Cambridgeshire by 2031 as job growth outstrips the increase in employed residents. From the 2001 position, with an estimated 7,000 net out-commuters, the situation changes to a net inflow of at least 30,000 commuters by 2031. In the case of Scenario 6 net in-commuting increases to 43,700. At a district level Cambridge City is expected to see net in-commuting increase from 29,500 in 2001 to over 55,000 in 2031; changes in net commuting are forecast to be more modest for other districts.
11. Growth rates in employment and the related workplace population are higher in Cambridgeshire than in the region as a whole, irrespective of Scenario or baseline forecast. Consequently Cambridgeshire accounts for a higher share of regional employment growth than of regional dwellings.
12. Net in-migration to Cambridgeshire (from outside the region) is modelled to range from 5,000 per annum under Scenario 2 to 8,200 per annum under Scenario 4.

Economic conditions & options testing advice (Chapter 5)

13. The move of the UK economy into recession has accelerated during the autumn of 2008 and most experts have revised forecasts of both employment and GVA downwards in recent weeks. There is a general consensus that ILO unemployment in the UK will increase to at least 3,000,000 during 2009. A wide range of sectors are affected, including manufacturing, financial services, retailing, leisure, catering, freight transport and construction. Many new housing developments have stalled, with builders moving off site; there are implications for jobs throughout the county as all districts are affected. Manufacturing cut-backs particularly threaten the economies of South Cambridgeshire, Huntingdonshire and Fenland
14. Consequently concern must be expressed about the realism of the employment forecasts generated by the OE model. There are two key issues which tend to compound each other. First, the model suggests a generally very optimistic picture, with a levelling off of growth, rather than a loss of jobs, assumed for the immediate future (2009 to 2011). In the context of the current and intensifying recession, this positive assessment seems unlikely.
15. Second, we have underlying concerns about the divergence between the OE model's outputs and the Annual Population Survey's estimates of the county's 'workplace population'. Together these factors mean that growth rates are over-optimistic from a baseline position that is over-stated. Our recommendation is that a revised set of Scenario runs for the region and Cambridgeshire should be considered. These should be calibrated with the APS regional estimates of employed residents and workplace population for the years 2004 to 2007.

Impact of the recession

16. It is difficult to provide authoritative views on the implications of the recession for the achievement of the growth scenarios. It is unlikely that house building rates will revive significantly for at least two years. If, as is expected, house prices fall by at least 25% as compared with the 2007 peak (and some experts forecast that values could fall by up to 50%), developers will be keen to re-negotiate Section 106 agreements. There will be a tight squeeze on both the infrastructure and affordable housing which can be supported by new private housing development. Without additional investment from the Homes & Communities Agency (HCA) in Social Housing Grant and infrastructure, expectations regarding the future programme of affordable housing supply are unlikely to be realised. In turn this will result in a reduced new development programme overall.
17. Consequently, even if new development can return to 2007/08 build rates, the achievement of Scenarios with significantly higher house building rates than the current RSS targets must be very uncertain. The 2008 to 2031 'target' of 125,600 additional dwellings recorded for Scenario 4, for example, could take 33 years to 2040 to complete at the annual build rate targets of the current RSS (Scenario 2).
18. Further work is required on the financial viability of developments to understand the long-term implications of the recession on potential developer contributions to infrastructure and affordable housing.

1: Introduction

- 1.1 The East of England Regional Assembly (EERA) is committed to carrying out an early review of the Regional Spatial Strategy (RSS), looking at the development needs of the region from 2021 to 2031. This review should be complete by 2011. The Government has indicated that the primary purpose of the review should be rolling the current Plan forward and further increasing housing provision to contribute towards the national targets set out in the Housing Green Paper.
- 1.2 EERA has issued guidance on housing and employment growth in the form of three ‘baseline’ forecasts and six scenarios and is seeking advice from the Region’s Section 4(4)¹ authorities, (the County Councils and Unitary authorities) on whether the level of growth forecast can be achieved.
- 1.3 SQW Consulting was commissioned by Cambridgeshire County Council to provide technical input to this validation exercise. This report provides an initial assessment of the appropriateness of the growth scenarios insofar as they relate to Cambridgeshire and its constituent districts. It examines the following issues, as set out in the brief
- Assumptions: Identify and advise on the key assumptions which form the basis of the model (including commentary on whether assumptions are robust and/or have any particular implications for options testing in Cambridgeshire on a county/district basis and the housing and jobs figures which EERA recommends be tested for each scenario).
 - Allocation: Disaggregation of housing and jobs provision for Cambridgeshire County and Cambridgeshire Districts. This is to include consideration of both levels of migration and net commuting.
 - Economic conditions: Take into account the current uncertainties in the delivery of housing and job creation as a result of the economic downturn and to identify any issues which are of particular significance for Cambridgeshire (e.g. particular sectors that are vulnerable to the downturn by county/district).
 - Options testing advice: Whether it is feasible to achieve the amount of growth in housing and jobs by 2031 and if not over what alternative period this scenario could be reasonably tested e.g. 2050s
- 1.4 The report is structured as follows. Chapter 2 provides a brief overview of the Oxford Economics’ (OE) East of England forecasting model which is used to indicate ‘baseline’ and scenario growth. This section focuses on data sources and projection methodologies. Chapter 2 also summarises the key assumptions incorporated into the baseline forecasts and six scenarios.

¹ As defined by the Planning & Compulsory Purchase Act 2004

- 1.5 Chapter 3 aims to provide a ‘reality check’ on the assumptions and outputs of the model. This is approached by comparing key model outputs for the period 2001 to 2007 with local and national statistics.
- 1.6 Chapter 4 is the core of the report and provides a disaggregation of critical housing, demographic and economic indicators to Cambridgeshire county and districts for the baseline and all six scenarios. A commentary and concluding summary is provided for each. The chapter also compares the ‘net commuting’ balance of employed residents and workplace populations for each scenario at a county and district level. The limited information on migration provided by the model is also summarised.
- 1.7 Chapter 5 provides a brief assessment of the extent to which the current economic conditions are taken into account in the baseline and scenario forecasts and the likely impact of the recession on Cambridgeshire. It also provides some preliminary advice on the feasibility of the scenarios being achieved by 2031 and what alternative period might be considered more realistic.
- 1.8 An Annex presents the interim demographic district-level forecasts produced by Cambridgeshire County Council for the period 2008 to 2031, which assume that current RSS house-building targets are extended through to 2031. These include population, labour supply, households and dwellings indicators.

2: The baseline forecasts and scenarios

- 2.1 This section provides a summary of the three baseline forecasts and six scenarios produced by Oxford Economics using the ‘East of England Forecasting Model’ for the period through to 2031. It starts with a brief description of the East of England model itself and summarises some of the definitions and assumptions relating to key variables.

The East of England Model

- 2.2 The East of England Forecasting Model was developed in 2007 by Oxford Economics. It brings together economic, demographic and housing-related variables and models the inter-relationships between them. It has the capacity to generate forecasts and scenarios for each of the variables at regional and local (district) level. In its ‘unconstrained’ mode the stock of dwellings is determined by employment and population growth, average household size and the number of households per dwelling.
- 2.3 The house building scenarios are different in that the level of dwellings is set for each as a control. The model indicates the economic and population growth consistent with these levels of dwelling stock. It should be noted that the four ‘housing stock led’ scenarios (numbers 1 to 4) apportion dwellings to districts according to Policy H1 of the RSS.

Definitions & assumptions for key variables

- 2.4 The following features are common to all/most scenarios:
- The ratio of people to dwellings falls in future at the same rate as the trend for the period 1998-2006 (apart from Baseline: higher household formation)
 - Population projections use official projections of natural increase plus forecasts of net migrants. Migrants are projected regionally using equations which take account of wages, house prices and claimant count unemployment, splitting migrants into economic and non-economic components. At a district level, economic migrants would be 2% of the population if the claimant count was zero but less where unemployment is higher. Unemployment rates above 2.4% will result in net out-migration. Non-economic migrants are calculated as a residual between observed trends in total migration and calculated economic migration. This figure is a constant which is applied to future forecasts.
 - Claimant count unemployment is projected as the previous year’s value plus 0.55 times the projected change in the working-age population less 0.45 times the projected change in employment. These values have been calculated iteratively.
 - There is no detailed demographic modelling of population by age/sex by district to forecast headship rates or labour supply; these are input from other sources.

- The workplace population is calculated as ABI^2 full-time jobs + 0.7 ABI part-time jobs + 0.94 self employed jobs (LFS/APS³ scaled to districts on Census 2001 shares). Note that this can be very different from the APS workplace employed estimates. Forecasts of workplace jobs are projected by industry sector and district as a share of the regional forecast, mainly using location quotients and trends in these.
- Employed residents – restricted to people aged 16 to 74 (Census-compliant definition). It appears that the calculation of employed persons on a residence basis is derived from the estimate of workplace population in each district and 2001 Census commuting flows. The 2001 commuting proportions are held constant for all forecast years.
- Dwellings – data is taken from CLG rather than EERA and local authorities. It should be noted that EERA/Annual Monitoring Report estimates exceed CLG estimates of dwellings.
- The model makes no changes to existing spatial policy when forecasting growth between 2021 and 2031
- Crucially – for the ‘scenario testing’ exercise – the model makes no assumptions as to whether growth is possible or sustainable.

Baseline forecasts

- 2.5 Oxford Economics have produced three variants of their ‘baseline’ forecasts for the region and each district.

Unconstrained baseline: net average annual dwellings regionally 29,800 2008-2031

- 2.6 This version of the model, updated in the summer of 2008, is not constrained by housing supply. It is based on considered views of the future trends in the UK, regional and local economies and extrapolating past trends in data series and relationships between data series.

Baseline: low migration. Net average annual dwellings regionally 27,100, 2008-2031

- 2.7 There is concern that the most recent 2006-based projections of net international migration into the UK are too high as they do not reflect changes in government policy and the recent economic downturn. This scenario assumes that net annual international migration to the UK gradually reduces to 120,000 as compared with the ONS 2006-based projection of 160,000. At a regional level net migration into the East of England is gradually reduced from 31,000 per annum to 25,000.

² Annual Business Inquiry – Office for National Statistics (ONS) survey of businesses

³ LFS – Labour Force Survey and its successor APS – Annual Population Survey. Both are household-based surveys of ONS.

Baseline: higher household formation ('headship' rates increase): net average annual demand for dwellings regionally 38,400, 2008-2031

- 2.8 This version of the baseline forecast illustrates the impact of incorporating the 'Chelmer⁴ model' household formation assumptions. The Chelmer demographic model output in December 2006 projected a faster reduction in the 'people to dwellings' ratio than recent estimates indicate has actually occurred. This variant assumes that the average household size falls faster than the Oxford Economic baseline model and the demand for dwellings increases. There would also be an increase in the number of households, but the model has not been calibrated to show this.

RSS dwelling-based scenarios

- 2.9 There are two variants of the model which forecast the continuation of current RSS housing targets, expressed in different ways.

Scenario 1: RSS H1 policy with 2006-2021 residual annual housing targets: net average annual dwellings regionally 27,200, 2008-2031

- 2.10 The residual regional annual target of 26,830 dwellings required to be built between 2006 and 2021 is the starting point. Provision post 2021 is based on the 2001 to 2021 annual net additions rate or the 2006 to 2021 residual annual rate, whichever is higher (at a district level). The model targets dwelling stock at 2031 and consequently the 2021 dwelling stock is only approximate.

Scenario 2: RSS H1 policy with 2001-2021 annual target continued to 2031: net average annual dwellings regionally 26,400, 2008-2031

- 2.11 The policy target for 2001 to 2021 in Scenario 2 is extended to 2031; however, as completions have been below target this still leaves an annual dwelling requirement above the 24,500 level for the period 2008 to 2031. The model again targets the dwelling stock at 2031 and hence the 2021 dwelling stock is only approximate.

The NHPAU-based scenarios

- 2.12 The National Housing and Planning Advice Unit (NHPAU) published advice to Government in June 2008 relating to the housing requirements of the English regions over the period 2008 to 2026⁵. The housing supply range is to be tested by Regional Planning Bodies (RPBs) in the forthcoming round of Regional Spatial Strategy (RSS) reviews. The emphasis is on the medium to long-term and the advice is based on 'available evidence about medium and long-term affordability, demographic and economic trends'.
- 2.13 Two methodologies were used. The first is the CLG Affordability model, which integrates information about labour and housing markets as well as demographic trends. It models the

⁴ The Chelmer demographic model was developed by Anglia Ruskin University and was used to underpin the housing targets proposed in the draft East of England Plan.

⁵ 'Meeting the housing requirements of an aspiring and growing nation: taking the medium and long-term view. Advice to the Minister about the housing supply range to be tested by Regional Planning Authorities'. NHPAU, June 2008.

impact of supply on affordability prospects. The second is based on population and household projections, building in an allowance to help meet ‘constrained’ demand (such as from sharing households), vacancies in new supply and the demand for second homes.

- 2.14 The approach is described as ‘cautious’ with respect to the underpinning assumptions. These include:
- A conservative view on the drivers of house price growth: 1.5% annual increase in incomes real terms (and 4% in nominal terms), and average mortgage interest rates of 6.25% through to 2026.
 - Basing demography on the CLG’s Revised 2004-based Household Projections rather than uplifting the increases to reflect the 2006-based ONS Population Projections. The international migration levels incorporated in the latter projections have been challenged as excessive given the restrictions now imposed on non-EU nationals.
- 2.15 The report comments that the Callcutt Review of Housebuilding Delivery, published in November 2007, indicated that the building industry could deliver the Government’s housing supply targets, although the impact on local economies, sustainability and infrastructure needs require detailed consideration by Regional Planning Bodies.
- 2.16 EERA has put forward two of the NHPAU housing supply options for testing: the bottom and upper ends of the range. However, it should be noted that other options are included in the NHPAU report. All of the NHPAU options are tested against a key ‘affordability’ measure. This is the ratio of lower quartile employee earnings to lower quartile house prices. The baseline measure for England is recorded as 7.25 in the first quarter of 2007.
- 2.17 Oxford Economics have continued the average annual dwelling figures beyond 2026 through to 2031 in their model runs for both scenarios. The regional totals have been allocated to districts pro-rata using RSS Policy H1 apportioned targets.

Scenario 3: The bottom end of the NHPAU range: 30,600 average annual net additions regionally 2008-2031

- 2.18 The rationale for this scenario is the housing trajectory required to meet the Government’s target of 240,000 annual net additions in England by 2016, as set out in the Housing Green Paper. The trajectory must also satisfy the commitment to deliver 2 million net additions to stock by 2016 and 3 million by 2020. Delivery is assumed to be held constant after 2020. The distribution between regions is informed by the latest CLG Household Projections.
- 2.19 The NHPAU report provides a forecast of the 2026 ‘affordability ratio’ in the East of England based on the ‘bottom-end’ rate of house building of 30,600 dwellings a year, assuming real earnings growth of 1.5% per annum and interest rates of 6.25%. This is 9.22, significantly higher than the ratio of 7.83 as calculated for 2007.

Scenario 4: The upper end of the NHPAU range: 39,200 average annual net additions regionally 2008-2031

- 2.20 The starting point for this scenario is the level of supply required to stabilise affordability over the long term and in each region. The ‘affordability ratio’ in 2007 for the East of England is 7.83. With average annual net additions of 39,181 dwellings, the modelled ratio in 2026 is 7.82. (With ‘upper end’ housing supply the England ratio falls slightly from 7.23 in 2007 through to 7.03 in 2026, based on 257,053 net additional homes annually).
- 2.21 The report comments that if earnings grow more strongly than forecast and if average mortgage rates are lower, then the number of homes required to stabilise affordability would increase. It also reflects on the impact of increasing prosperity on demand for housing services: bigger (more space internally and externally) and better (for example higher environmental standards).
- 2.22 The report comments that the ‘Upper end’ figures should not be viewed as a maximum and RPBs may wish to test plans for a higher level of provision

The ‘demographic method’ forecast:

- 2.23 It should be noted that the NHPAU also produced a ‘demographic’ forecast of housing supply which incorporated CLG’s Revised 2004-based Household Projections, allowances for ‘constrained household’ demand, vacancies in new supply and demand for second homes. For the East of England this amounted to an average annual net additional supply of 33,900 homes between 2008 and 2026, (England annual average figure of 260,700). The 33,900 is composed of 29,800 for household growth, 2,900 to meet constrained demand, 340 to provide for second homes and 850 for vacancies.
- 2.24 The 2026 ‘affordability ratio’ forecast for this scenario is 8.54 for the East of England, assuming real earnings growth of 1.5% per annum and interest rates of 6.25%.

Affordability model – implications of current RSS

- 2.25 The NHPAU also modelled changes in the ‘affordability ratio’ based on current RSS figures for new housing. For the East of England, with average annual net additions of 25,400 between 2008 and 2026 the ratio increased from 7.83 in 2007 to 11.87 in 2026 (standard model) or 10.49 (real earnings annual growth restricted to 1.5%). The ratio fell to 10.18 in 2026 if, in addition to the above assumptions, interest rates increased to 6.25%.

GVA growth scenarios

Scenario 5: GVA growth in line with RES targets (unconstrained): Net average annual dwellings regionally: 33,200 2008-2031

- 2.26 This scenario is based on achieving one of the main goals of the Regional Economic Strategy (RES) – achieving annual growth in real workplace-based GVA 2008 to 2031 of 2.3% (per capita) and 2.1% (per job). The RES states that these headline regional ambitions are consistent with achieving the housing supply targets set out in the East of England Plan,

(Autumn 2008). However, it should be noted that Oxford Economics describe this scenario as ‘unconstrained’.

- 2.27 Oxford Economics note that the recent economic downturn has increased the challenge of meeting the productivity goals. They have, therefore, incorporated extra assumptions to generate higher levels of productivity, similar to those in the ‘P2 scenario’ in the RES consultation draft. Basically this scenario assumed that additional jobs were attracted into the region in a limited number of sectors where GVA/job was above the regional average. It was also assumed that GVA/job could be raised within existing firms across the region in a limited number of sectors, for example through training or through R&D.
- 2.28 These assumptions, when applied to the revised baseline forecast for the RSS review, generated slightly higher productivity growth than the RES targets. It was therefore decided to revise down slightly the assumptions for increases in GVA per job in existing firms in order to meet the RES productivity growth targets. The resulting scenario generates higher demand for housing than the current RSS targets.

Scenario 6: GVA growth constrained by RSS housing targets: Net average annual dwellings regionally 27,200 2008-2031

- 2.29 As noted above, the RES compliant GVA growth scenario generates a higher demand for dwellings than the current RSS target delivers. In this scenario the baseline forecast has been adjusted to incorporate assumptions for additional job growth in high productivity sectors as well as increased productivity in certain sectors. However, housing growth is then constrained in the model approximately in line with RSS targets. This generates lower migration into the region and a smaller total population than the ‘unconstrained’ GVA Growth scenario. The outcome for productivity growth is slightly higher rates of GVA per capita and per job throughout 2008-2031 than the RES targets.

3: Assumptions - testing the model for robustness

- 3.1 This section considers how robust the model's assumptions are. However, it is important to note that this is not the place to provide a detailed critique of how the model operates. In practice the model is itself being developed over time and new assumptions are incorporated. For example, the latest model runs have severed the previous link with the 'Chelmer model' demographic inputs. The description of the model's data sources and projection methodology appears to be somewhat out of date (with respect to the production of the Growth Scenarios) and is not always clear⁶.
- 3.2 In relation to Cambridgeshire the best way to test the model is to consider how the model's outputs for the period 2001 to 2007 compare with a range of monitoring information. To some extent the model incorporates this data directly, but there are independent sources and locally produced information which can help in the validation process.
- 3.3 The following sections consider district-level data relating to population, dwellings, employed residents and workplace population. Where available the years reviewed are from 2001 to 2007. However, not all data sources cover the period in full.

Population

- 3.4 Table 3-1 compares the ONS-based mid year population estimates, which have been used in the Oxford Economics model runs, with the estimates produced by Cambridgeshire County Council's Research Group, (CCCRG). The latter figures incorporate local sources of information.

Table 3-1: Mid-year Population Estimates, Cambridgeshire Districts, Oxford Economics & Cambridgeshire County Council compared, 2001 to 2007, '000

District	ONS/OE 2001	CCC 2001	ONS/OE 2007	CCC 2007	ONS/OE change 2001-07 (%)	CCC change 2001-07 (%)
Cambridge City	109.9	109.9	120	115.2	10.1 (9.2%)	5.3 (4.8%)
East Cambridgeshire	73.4	70.9	81	77.9	7.6 (10.4%)	7.0 (9.9%)
Fenland	83.7	83.7	91.4	91.3	7.7 (9.2%)	7.6 (9.1%)
Huntingdonshire	157.2	157.2	167.6	162	10.4 (6.6%)	4.8 (3.1%)
South Cambridgeshire	130.5	130.5	137.3	140.5	6.8 (5.2%)	10 (7.7%)
Cambridgeshire	554.7	552.2	597.4	586.9	42.7 (7.7%)	34.7 (6.3%)

Source: ONS for Oxford Economics; Cambridgeshire County Council Research Group

- 3.5 The Table shows that the OE model incorporates significantly higher population estimates at 2007 than the County Council's estimates – 597,400 for Cambridgeshire as compared with 586,900. The OE model assumes population growth to have been 42,700, (7.7%) over the six

⁶ Oxford Economics: East of England: Joint modelling for the RES and RSS, Final Report, Revised August 2008

year period 2001 to 2007, whereas the County Council records a lower growth of 34,700, (6.3%). The differences are significant in every district apart from Fenland. In the case of South Cambridgeshire, the County Council's estimate exceeds the ONS/OE figure.

Dwellings

- 3.6 Table 3-2 provides a summary of mid year dwelling estimates for 2001 and 2007 for Cambridgeshire districts. The OE model incorporates CLG estimates whereas the County Council incorporates estimates derived from local planning monitoring systems.

Table 3-2: Mid-year Dwelling Estimates, Cambridgeshire Districts, Oxford Economics & Cambridgeshire County Council compared, 2001 to 2007 '000

District	ONS/OE 2001	CCC 2001	ONS/OE 2007	CCC 2007	ONS/OE change 2001-07 (%)	CCC change 2001-07 (%)
Cambridge City	43.3	44.5	47.3	47.5	4.0 (9.2%)	3.0 (6.7%)
East Cambridgeshire	30.7	30.9	33.4	34.8	2.7 (8.8%)	3.9 (12.6%)
Fenland	36.4	36.8	40.7	40.9	4.3 (11.8%)	4.1 (11.1%)
Huntingdonshire	65.2	65.7	69.0	69.2	3.8 (5.8%)	3.5 (5.3%)
South Cambridgeshire	53.9	54.2	58.4	58.8	4.5 (8.3%)	4.6 (8.5%)
Cambridgeshire	229.3	232.1	248.8	251.2	19.5 (8.5%)	19.1 (8.2%)

Source: CLG: Oxford Economics; Cambridgeshire County Council Research Group

- 3.7 The Table shows that the sources indicate a similar rate of increase in the county's dwelling stock over the period 2001 to 2007, rising by just over 19,000. There are some differences at a district level. In particular, ONS/OE assume a 4,000 increase in dwellings in Cambridge City as compared with 3,000 as recorded by the County Council.
- 3.8 Taking the population and dwellings figures together indicates a more marked reduction in 'crude' average household size according to the County Council's figures. The OE/ONS population to dwellings figure reduces from 2.42 in 2001 to 2.40 in 2007 whereas the County Council's population to dwellings figure reduces from 2.38 in 2001 to 2.34 in 2007. This difference may appear small but has important implications if continued long-term. It suggests that the OE forecasts of population for any given increase in dwellings will be much higher than those generated through other sources.

Employed residents and workplace population

- 3.9 The data source for estimates of both employed residents and 'workplace' population is the Labour Force Survey (LFS) and its successor, the Annual Population Survey (APS). These ONS sample surveys primarily relate to households, although some adjustments have been made to include health staff living in institutions as well as students in halls of residence etc. The workplace population estimates have only been published for 2004 onwards and they are not directly comparable with the Census. It is particularly important to note that respondents are asked to name the district where they work and no check is made on accuracy. This leads to a number of errors in areas such as the Cambridge City 'fringe'. Many more people consider their workplace to be Cambridge than is, in fact, the case. Consequently data on

workplace populations is significantly more robust for larger areas, consisting of several districts.

- 3.10 It should also be appreciated that the sample size of the Annual Population Survey is small and there is substantial sampling error at a district level. Again, aggregating data for adjoining areas helps to reduce the error.
- 3.11 In relation to the OE estimates, it is important to note that these have been ‘scaled’ to the 2001 Census. This means that they are generally lower than the LFS-derived figures. The explanation of difference is linked to the fact that interviewers conducting the LFS/APS can prompt respondents to include work of an hour or so, or which is unpaid. It is considered that many people completing Census forms omit such employment.
- 3.12 Table 3-3 provides a comparison of the OE model output and the LFS/APS estimates of employed residents of the Cambridgeshire districts 2001 to 2007.

Table 3-3 : Estimates of employed residents, Cambridgeshire Districts, 2001 & 2007, Oxford Economics model & ONS (LFS/APS) ‘000

District	OE 2001	LFS 2001	OE 2007	LFS 2007	Change OE 2001-07 (%)	Change LFS/APS 2001-07 (%)
Cambridge City	49.2	57	51.5	60.1	2.3 (4.7%)	3.1 (5.4%)
East Cambridgeshire	37.2	39	40	37.5	2.8 (7.5%)	-1.5 (-3.8%)
Fenland	37.7	38	40.3	42.7	2.6 (6.9%)	4.7 (12.4%)
Huntingdonshire	82.3	81	92.2	89	9.9 (12%)	8 (9.9%)
South Cambridgeshire	69.1	70	74.3	72.2	5.2 (7.5%)	2.2 (3.1%)
Cambridgeshire	275.5	284	298.2	301.5	22.7 (8.2%)	17.5 (6.2%)

Source: Oxford Economics; LFS/APS from Nomis

- 3.13 As might be expected, the Oxford Economics estimate of employed residents in 2001 is lower than the LFS-based estimate as it has been scaled to the 2001 Census. However the increase to 2007, around 22,700, is higher than the ONS-derived estimate of 17,500. The 2007 APS-based county estimate has a confidence interval of +/- 2.5%, so the ‘true’ 2007 county figure is likely to lie in the range 294,000 to 309,000.
- 3.14 Table 3-4 provides a comparison of workplace population estimates as derived from the OE model and as estimated from the APS. The period under review is just three years, 2004 to 2007. The differences are very large. The Oxford Economics model shows an increase of 49,600 in the county’s working population in the three year period whilst the APS shows an increase of 8,300 in Cambridgeshire as a whole.

Table 3-4 : Workplace population estimates, Cambridgeshire districts, 2004 to 2007 (Oxford Economics & ONS APS) ‘000

District	OE 2004	APS 2004	OE 2007	APS 2007	Change OE 2004-07 (%)	Change APS 2004-07 (%)
Cambridge City	71.7	103.7	83.2	114	11.5 (16.1%)	10.3 (9.9%)
East Cambridgeshire	26.1	25.9	32.1	25.7	6.0 (23%)	-0.2 (-0.8%)

District	OE 2004	APS 2004	OE 2007	APS 2007	Change OE 2004-07 (%)	Change APS 2004-07 (%)
Fenland	34.7	36.3	41.5	35.7	6.8 (19.6%)	-0.6 (-1.7%)
Huntingdonshire	66.9	70.6	81.7	74.0	14.8 (22.1%)	3.4 (4.8%)
South Cambridgeshire	64.8	57.6	75.3	53.1	10.5 (16.2%)	-4.5 (-7.8%)
Cambridgeshire	264.2	294.2	313.8	302.5	49.6 (18.8%)	8.3 (2.8%)

Source: Oxford Economics; ONS APS from Nomis

- 3.15 It is worth looking at some related data to explore the differences between the OE model and the APS output. At a regional level, Oxford Economics indicates that the working population increased from 2,475,900 to 2,591,800 in three years, a 115,900 uplift equivalent to 4.7%. Cambridgeshire appears to have accounted for 43% of the regional increase. However, the APS shows a regional increase of 59,700 in the workforce population, up from 2,512,400 to 2,572,100, a lower 2.4% rise between 2004 and 2007. On this basis, Cambridgeshire accounts for a much lower 14% of the region's net growth.
- 3.16 The OE model shows that jobs (employment) increased in Cambridgeshire from 288,800 in 2004 to 340,100 in 2007, a rise of 51,300, or 17.8% in 3 years. The corresponding increase in employment in the region as a whole was 117,700, or 4.3%. Thus Cambridgeshire appears to have accounted for 44% of the region's job growth. It is of considerable concern that the employment (jobs) estimates for Cambridgeshire show a very different picture from the APS workplace population series for the period 2004 to 2007.
- 3.17 The OE model's employment figures are based primarily on the estimates of employees as output by the Annual Business Inquiry, the ONS sample survey of companies. It is notable that the 2006 results, (the most recent to be published) were based on a September survey, a change from December. They also involved a change in methodology. It is possible that the 2006 estimates are improvements on previous years' estimates. If this is the case care should be taken in attributing growth to Cambridgeshire which is a statistical artefact.
- 3.18 The employment and workplace population growth attributed to Cambridgeshire for the period 2004 to 2007 by the OE model is important as it is a determinant of high growth trends in the future (as the next chapters show). Evidence from the APS indicates a far slower rate of employment growth. These different starting points are extremely important in terms of the robustness of the different scenarios and the weight that can be attached to them.

4: Allocation: disaggregation of housing, jobs and other key indicators for Cambridgeshire & its districts

- 4.1 This chapter provides an overview of each scenario in turn, looking at expected performance and annual rate of change in key demographic and economic variables over the period 2008 to 2031. The data is presented for each of the five districts of Cambridgeshire, the county as a whole and the region. The variables are: dwellings, population, households, employment (jobs), employed residents and workplace population. The last two elements enable net commuting to be measured and a separate section summarises the commuting balance for each scenario at a district level in 2001, 2007 and 2031. The brief also requested an analysis of migration. However, the model only provides data on inter-regional/international migration, excluding intra-regional migration flows and the limited information output concludes this chapter. A broad summary of this overview at 2031 concludes the chapter.
- 4.2 It is useful to start with a summary of the annual growth assumed by the OE model for these key variables over the period 2001 to 2007 as this helps to provide a ‘reality check’ on the forecasts. However, as described in Chapter 3, there is concern that the model may be overstating population and employment growth – and hence also the growth in numbers of employed residents and the workplace population.

Table 4-1: Changes in Key Economic & Demographic Variables, 2001 to 2007, Cambridgeshire, annual average '000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings annual	0.68	0.46	0.72	0.63	0.75	3.24 (15.2%)	21.4
Households annual	0.66	0.46	0.7	0.63	0.73	3.17 (15.0%)	21.2
Population annual	1.68	1.27	1.28	1.74	1.14	7.11 (16.4%)	43.4
Employment annual	0.78	1.36	1.62	2.08	1.97	7.81 (23.3%)	33.5
Employed residents annual	0.38	0.47	0.43	1.66	0.86	3.79 (12.0%)	31.7
Workplace population annual	0.75	1.19	1.61	2.11	1.85	7.51 (21.9%)	34.2

Source: Oxford Economics

- 4.3 Table 4-1 indicates that over the period 2001 to 2007, the average annual increase in numbers of households was lower than the increase in dwellings in both Cambridgeshire and the region as a whole. It also suggests that the working population increased at a faster rate than the overall increase in employment (jobs) regionally. This would require the proportion of people with two or more jobs to decline. National trends indicate increasing numbers of part-time jobs and point to the reverse situation. This is an issue which should be taken up with Oxford Economics.

- 4.4 In Cambridgeshire the analysis suggests that both employment and the related working population have increased at much faster rates than the numbers of employed residents, (around 7,500 additional workplace population each year as compared with 3,800 additional employed residents). As shown in Table 4-9, the model indicates that net commuting has changed considerably over this period. In 2001 the county recorded net out-commuting of just over 7,000; by 2007 the model indicates the county attracted 15,300 in-commuters.
- 4.5 The issue of just what employment growth has occurred from 2001 to 2007 is critical to the assessment of what is plausible in the future; job growth is the key determinant of population growth and housing demand in Cambridgeshire. The model suggests that Cambridgeshire has accounted for around 22% of the region's employment growth 2001 to 2007. However this growth is based on changes in the number of employees as measured by the Annual Business Inquiry and the fast rate recorded in this series is not supported by the Annual Population Survey and its assessment of changes in the workplace population of Cambridgeshire.

East of England Plan targets

- 4.6 It is also useful to re-state the requirements of the current East of England Plan as they relate to housing and jobs in Cambridgeshire. Table 4.2 provides a summary of the housing targets, which are set at a district level. It indicates that Cambridgeshire is expected to provide over 73,000 dwellings over the period 2001 to 2021, around 14.4% of the regional total. In the 2001 to 2007 period, development in the county as a whole has been below target, although this is primarily because the major development sites in Cambridge City and South Cambridgeshire have yet to come on stream. Development has exceeded the nominal annual targets in East Cambridgeshire, Fenland and Huntingdonshire. Regional figures have not yet been published for 2007/08, but the Cambridgeshire net completions increased to 4,256, exceeding the East of England Plan's residual target for the first time.

Table 4-2: Net dwelling completions 2001 to 2007 compared to East of England Plan target, Cambridgeshire districts: totals and annual averages ()

Dwelling targets/actuals	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Proposed H1 target April 2001 to 2021	19,000 (950)	8,600 (430)	11,000 (550)	11,200 (560)	23,500 (1,175)	73,300 (3,665) (14.4%)	508,000 (25,400)
Of which built 2001 to 2007	2,973 (496)	3,840 (640)	3,997 (666)	3,519 (587)	4,456 (743)	18,785 (3,131) (14.4%)	130,539 (21,757)
Residual target: minimum to build 2008 to 2021	16,027 (1,145)	4,760 (340)	7,003 (500)	7,681 (549)	19,044 (1,360)	54,515 (3,894) (14.4%)	377,461 (26,962)
Completions in most recent year 2007-08	673	675	738	624	931	3,641 (14.7%)	24,799

Source: EERA Annual Monitoring Report of the East of England Plan 2006-07

- 4.7 The employment target for Cambridgeshire is 75,000 over the period 2001 to 2021; a pro-rata split for the period 2001 to 2007 is 22,500. The regional target for 2001 to 2021 is 452,000 jobs. The Cambridgeshire share is 16.6%, reflecting the relatively strong local economic base and hence anticipated growth potential. As indicated in Table 4-1, data incorporated in the

Oxford Economics model suggests that employment growth in the region 2001 to 2007 has already reached 201,000 jobs, some 44% of the 20 year target. The job growth attributed to Cambridgeshire 2001 to 2007 is just under 47,000, 62% of the twenty year target figure.

- 4.8 The sections which follow summarise the key demographic and economic indicators for the baseline forecasts and each scenario in turn. It should be noted that the ‘higher household formation’ baseline variant is not included in detail because only the number of dwellings varies from the initial baseline forecast.

Baseline

- 4.9 Table 4-3 summarises the forecast changes in key variables as indicated by the ‘Baseline’ scenario for Cambridgeshire districts, the county and the region.

Table 4-3: Changes in Key Economic & Demographic Variables, 2008 to 2031, Baseline Forecast, Cambridgeshire, '000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	31.8	14.3	9.5	25.4	27.9	109 (15.3%)	714.7
Households nos.	31.6	15.9	11.2	31.3	33.9	124.0 (14.3%)	864.1
Population nos.	70.0	28.6	15.3	49.7	54.9	218.5 (17.1%)	1,279.3
Employment nos.	63.7	12.4	7.1	19.5	29.1	131.8 (18.4%)	716.0
Employed residents nos.	27.3	15.8	6.5	19.6	30.3	99.4 (17.1%)	580.4
Workplace population nos.	53.7	12.1	6.8	18.1	27.7	118.4 (18.6%)	637.2
Dwellings annual	1.33	0.6	.39	1.06	1.16	4.54 (15.3%)	29.8
Households annual	1.32	0.66	0.47	1.30	1.41	5.17 (14.3%)	36.0
Population annual	2.92	1.19	0.64	2.07	2.29	9.11 (17.1%)	53.3
Employment annual	2.66	0.52	0.3	0.81	1.21	5.49 (18.4%)	29.8
Employed residents annual	1.14	0.66	0.27	0.82	1.26	4.14 (17.1%)	24.2
Workplace population annual	2.24	0.51	0.28	0.75	1.15	4.93 (18.6%)	26.6

Source: Oxford Economics

- 4.10 The baseline forecast indicates an annual rate of growth in net new dwellings in Cambridgeshire from 2008 to 2031 of 4,540, significantly higher than the ‘residual’ requirement of the adopted East of England Plan, 3,890. The annual increase in dwellings at a regional level, just under 30,000, is higher than the ‘residual’ requirement of the current Plan, (26,960).
- 4.11 The baseline forecast of regional employment, averaging 29,800 jobs a year, is, in contrast, lower than the apparent increase in jobs recorded 2001 to 2007, (33,500). This is also true of Cambridgeshire, where the baseline forecast indicates an annual increase of around 5,500 jobs

between 2008 and 2031 as compared with the 7,800 recorded annually between 2001 and 2007. However, both the regional and county baseline forecasts are significantly higher than the current East of England Plan targets, (annualised: 3,750 for Cambridgeshire and 22,600 for the region).

- 4.12 At the regional level the model indicates workplace population growth outstripping the increase in numbers of employed residents, 637,200 as compared with 580,400, between 2008 and 2031. The Cambridgeshire picture is similar, with 118,400 workplace population increase as compared with 99,400 additional employed residents, 2008 to 2031. At a regional level such growth would score well on sustainability criteria as it would reduce net out-commuting. However, in the context of Cambridgeshire employment growth of this scale would apparently result in net in-commuting of over 34,000 by 2031. Cambridge City would be particularly affected, with an imbalance of 58,000 workplace population as compared with employed residents, (see Table 4-11).
- 4.13 The baseline forecast suggests that there will be a significantly higher increase in households than in dwellings both regionally and in Cambridgeshire. This affects every district in Cambridgeshire apart from Cambridge City.
- 4.14 Conclusion: When compared with the current East of England Plan the baseline forecast suggests significantly higher rates of employment and housing growth, both for the region and for Cambridgeshire. The high baseline forecast of jobs appears to be very dependent on ABI employee data 2001 to 2007 as the key determinant of future growth.

High ‘household formation’ baseline variant

- 4.15 The ‘higher household formation’ variant can be considered even more of a challenge than the baseline itself. This is because it indicates an additional 921,000 dwellings regionally, (132,400 in Cambridgeshire), equivalent to annual growth rates of 38,400 (East) and 5,520 (Cambridgeshire) over the period 2008 to 2031. The variant has not been fully worked through for testing purposes as OE have not adjusted household numbers in line with increased dwellings.

Low migration baseline variant

Table 4-4: Changes in Key Economic & Demographic Variables, 2008 to 2031, Baseline Low Migration Forecast, Cambridgeshire, ‘000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	29.7	12.8	8.4	23.3	26.4	100.6 (15.4%)	651.5
Households nos.	29.5	14.5	10.2	29.2	32.5	115.9 (14.4%)	803.7
Population nos.	64.9	25.2	13.0	44.7	51.5	199.2 (17.5%)	1,138.8
Employment nos.	61.4	11.5	6.4	17.7	28	125 (18.9%)	661.9
Employed residents nos.	26.2	14.7	5.7	17.8	29	93.4 (17.4%)	535.4

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Workplace population nos.	51.7	11.2	6.2	16.3	26.7	112.2 (19%)	588.7
Dwellings annual	1.24	0.53	0.35	0.97	1.10	4.19 (15.4%)	27.1
Households annual	1.23	0.60	0.43	1.22	1.35	4.83 (14.4%)	33.5
Population annual	2.7	1.05	0.54	1.86	2.15	8.3 917.5%)	47.5
Employment annual	2.56	0.48	0.27	0.74	1.17	5.21 (18.9%)	27.6
Employed residents annual	1.09	0.61	0.24	0.74	1.21	3.89 (17.4%)	22.3
Workplace population annual	2.16	0.47	0.26	0.68	1.11	4.67 (19%)	24.5

Source: Oxford Economics

- 4.16 Table 4-4 incorporates lower migration and hence lower population growth over the period 2007 to 2031. In consequence there is a reduced demand for dwellings, fewer households and reduced job growth as compared with the initial ‘baseline’. The forecast annual average ‘demand for dwellings’ for Cambridgeshire is, at 4,190, only slightly above the ‘residual’ annual requirement of the current RSS, (3,890). Similarly at the regional level the forecast of the annual demand for dwellings, 27,100, is very close to the current minimum target of 26,900.
- 4.17 The employment forecasts indicate an annual increase of 27,600 jobs regionally and 5,200 in Cambridgeshire. Although below what has been achieved in the period 2001 to 2007 – according to the Oxford Economics model – these figures present a considerable challenge when compared with the East of England Plan targets (annualised as 22,600 jobs regionally and as 3,750 jobs for Cambridgeshire over the full 20 year period 2001 to 2021). They would result in reduced net out-commuting for the region by 2031 but significantly increased net in-commuting to Cambridgeshire and especially Cambridge City (+34,000 and +57,000 respectively).
- 4.18 As with the initial ‘baseline’ forecast, the low migration variant suggests that household growth significantly exceeds growth in net dwellings. The forecast growth in workplace population also exceeds the increase in numbers of employed residents, both regionally and in Cambridgeshire.
- 4.19 Conclusion: The annual increase in dwellings 2007 to 2031 indicated by the ‘low migration’ variant of the baseline forecasts is only marginally higher than the ‘residual’ target of the current East of England Plan, both regionally and in Cambridgeshire. However, it is not clear why the forecast indicates a significantly higher rate of growth of households than dwellings. There is also a concern that the annual employment growth forecasts are significantly higher than the targets set regionally and locally in the current Plan and could lead to high net in-commuting for Cambridgeshire by 2031.

Scenario 1: RSS Residual Housing Growth

Table 4-5: Changes in Key Economic & Demographic Variables, 2008 to 2031, Scenario 1 – RSS residual housing growth, Cambridgeshire, '000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	26.7	9.4	12.3	13.2	32.4	94.1 (14.4%)	652.6
Households nos.	26.6	11.3	13.9	19.4	38.2	109.3 (13.6%)	806.1
Population nos.	57.8	17.4	21.4	21.4	64.9	182.9 (16.1%)	1,137.9
Employment nos.	58.8	9.8	8.5	10.3	31.5	118.8 (17.8%)	666.4
Employed residents nos.	25.6	13.7	8.1	14.0	30.2	91.7 (16.9%)	542.2
Workplace population nos.	49.5	9.5	8.2	9.4	30.1	106.7 (17.9%)	595.5
Dwellings annual	1.11	0.39	0.51	0.55	1.35	3.92 (14.4%)	27.2
Households annual	1.11	0.47	0.58	0.81	1.59	4.55 (13.6%)	33.6
Population annual	2.41	0.72	0.89	0.89	2.71	7.62 (16.1%)	47.4
Employment annual	2.45	0.41	0.35	0.43	1.31	4.95 (17.8%)	27.8
Employed residents annual	1.07	0.57	0.34	0.59	1.26	3.82 (16.9%)	22.6
Workplace population annual	2.06	0.40	0.34	0.39	1.25	4.44 (17.9%)	24.8

Source: Oxford Economics

- 4.20 As would be expected, Scenario 1, incorporating the continuation of RSS Policy H1 'residual' housing growth rates, indicates dwelling forecasts that are in line with the current East of England Plan, (an additional 3,900 per annum for Cambridgeshire and just over 27,000 a year for the region, 2008 to 2031). The employment forecasts indicate an annual regional growth of 27,800 jobs and an increase for Cambridgeshire of just under 5,000 jobs. As discussed in the context of the Baseline forecast, such a rate of job growth appears challenging in relation to the targets set by the current East of England Plan, (22,600 annual growth at a regional level and 3,750 growth in Cambridgeshire). However, evidence from the ABI suggests that this rate has been exceeded in the period 2001 to 2007. Conflicting evidence relating to estimates of the workplace population, arising from the APS, indicates that job growth has been lower than the current target.
- 4.21 Scenario 1, in line with the Baseline forecast, indicates a significantly higher rate of growth of households than dwellings, (804,000 as compared with 652,000 over 24 years at the regional level; the Cambridgeshire forecasts are for 116,000 households and 101,000 dwellings over the same period). Also in line with the Baseline forecast, Scenario 1 indicates the increase in workplace population outstripping the increase in employed residents. At a regional level this reduces net out-commuting by over 50,000 between 2008 and 2031. For Cambridgeshire it shows the workplace population increasing by 112,000 as compared with a 93,000 increase in numbers of employed residents. As Table 4-11 shows, at a county level this would result in

net in-commuting of around 30,000 by 2031. Cambridge City would experience net in-commuting of over 55,500 by 2031.

- 4.22 **Conclusion:** With house building rates in line with the ‘residual’ targets of the adopted East of England Plan, this Scenario is feasible if sufficient land can be identified in locations which meet spatial policy, environmental and sustainability criteria. However, there is concern that if employment growth targets are realised then Cambridgeshire – and particularly Cambridge City – could experience high in-commuting.

Scenario 2: RSS with average housing growth

Table 4-6: Changes in Key Economic & Demographic Variables, 2008 to 2031, Scenario, Cambridgeshire, '000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	25.1	9.7	12.5	13.4	30.8	91.4 (14.4%)	634.1
Households nos.	24.9	11.5	14.0	19.6	36.6	106.7 (13.6%)	787.0
Population nos.	53.9	17.9	21.8	21.9	61.3	176.7 (16.1%)	1,098.7
Employment nos.	57.1	9.9	8.6	10.4	30.6	116.5 (17.9%)	652.8
Employed residents nos.	24.9	13.6	8.1	13.8	29.2	89.6 (16.8%)	531.8
Workplace population nos.	48.2	9.7	8.2	9.4	29.2	104.7 (17.9%)	584.1
Dwellings annual	1.05	0.4	0.52	0.56	1.28	3.81 (14.4%)	26.4
Households annual	1.04	0.48	0.59	0.82	1.53	4.45 (13.6%)	32.8
Population annual	2.25	0.75	0.91	0.91	2.55	7.36 (16.1%)	45.8
Employment annual	2.38	0.41	0.36	0.43	1.27	4.86 (17.9%)	27.2
Employed residents annual	1.04	0.57	0.34	0.58	1.22	3.73 (16.8%)	22.2
Workplace population annual	2.01	0.4	0.34	0.39	1.22	4.36 (17.9%)	24.3

Source: Oxford Economics

- 4.23 Scenario 2 envisages an annual increase in dwellings both regionally and in Cambridgeshire that is below the rate now required to meet the targets of the adopted East of England Plan. However, the forecast annual growth in employment between 2008 and 2031 exceeds the East of England Plan targets. However, as discussed in relation to the Baseline forecast, a higher rate of employment growth measured over the period 2001 to 2007 is indicated by the Oxford Economics model.
- 4.24 In common with the Baseline, the scenario forecasts significantly higher growth in numbers of households than in numbers of dwellings, both regionally and locally. The forecast increase in the workplace population also exceeds the increase in numbers of employed residents. By 2031 the region is forecast to experience a significant drop in net out-commuting, whereas Cambridgeshire (and especially Cambridge City) are forecast to experience increasing net in-

commuting. However, this outcome is uncertain as the robustness of the employment data incorporated in the forecasting model is a major issue.

- 4.25 **Conclusion:** Scenario 2 is a realistic option if additional land can be identified (subject to spatial policy, environmental and sustainability criteria), to continue house-building at current East of England target rates. However, the employment growth forecasts for Cambridgeshire are of concern. If realised, they would result in an increase in in-commuting to the county, particularly Cambridge. If the (lower) annual employment target of the current East of England Plan is realised then there could be a jobs shortfall by 2031. An increase of 3,750 jobs per annum would result in 90,000 employment growth, 2008 to 2031. Such employment growth could support an additional 81,000 workplace population in Cambridgeshire – lower than the forecast 89,600 increase in numbers of employed residents.

Scenario 3: NHPAU Lower end range housing supply

Table 4-7: Changes in Key Economic & Demographic Variables, 2008 to 2031, Scenario 3: NHPAU Lower end housing supply, Cambridgeshire, '000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	28.9	10.7	13.5	15.5	35.0	103.5 (14.1%)	735.6
Households nos.	28.7	12.5	14.9	21.6	40.6	118.3 (13.4%)	884.7
Population nos.	62.9	20.3	23.9	26.7	70.6	204.3 (15.5%)	1,320.1
Employment nos.	61.0	10.5	9.2	12.1	33.1	125.9 (17.2%)	731.3
Employed residents nos.	26.7	14.6	8.9	16.0	31.7	98.0 (16.4%)	596.2
Workplace population nos.	51.4	10.3	8.8	11.1	31.5	113.1 (17.3%)	653.9
Dwellings annual	1.2	0.45	0.56	0.64	1.46	4.31 (14.1%)	30.6
Households annual	1.19	0.52	0.62	0.90	1.69	4.93 (13.4%)	36.9
Population annual	2.62	0.84	0.99	1.11	2.94	8.51 (15.5%)	55.0
Employment annual	2.54	0.44	0.38	0.5	1.38	5.24 (17.2%)	30.5
Employed residents annual	1.11	0.61	0.37	0.67	1.32	4.08 (16.4%)	24.8
Workplace population annual	2.14	0.43	0.37	0.46	1.31	4.71 (17.3%)	27.3

Source: Oxford Economics

- 4.26 Scenario 3 forecasts a higher rate of annual housing growth in both the region and Cambridgeshire than is required by the current Plan's 'residual' annualised housing targets. At a regional level the difference is between 30,600 and 27,000; for Cambridgeshire the difference is between 4,300 and 3,900. It is possible that the county difference could be met by additional building in those districts which have exceeded the minimum targets of the current Plan. However, this would result in a further imbalance of jobs and local labour supply at a district level as numbers of employed residents exceed the workplace population.

- 4.27 The forecast annual increase in employment exceeds the current Plan's targets both regionally and for Cambridgeshire. However, as with the Baseline forecast and other Scenarios, the rate of employment growth is lower than apparently achieved between 2001 and 2007.
- 4.28 As with other Scenarios the forecast increase in numbers of households is significantly higher than the increase in dwellings, both regionally and locally. The Scenario forecasts a higher increase in the workplace population than in the numbers of employed residents. This suggests that at a regional level net out-commuting will fall by 2031 whereas in Cambridgeshire net in-commuting will increase, reaching around 30,000 at a county level in 2031. Cambridge City will experience the highest levels of net in-commuting of over 56,000.
- 4.29 Conclusions: The housing requirements of the Scenario encapsulating NHPAU's 'lower end of the housing supply range' figures are above current RSS 'Policy H1 'residual' targets. However, in the case of Cambridgeshire the difference is around 400 dwellings a year. Meeting the shortfall by building in those districts currently above the RSS targets is likely to result in increasing the district-level imbalance between employed residents and workplace population. The employment forecasts exceed current Plan targets and could result in reduced out-commuting for the region, but increased in-commuting for Cambridgeshire.

Scenario 4: NHPAU Upper end housing supply range

Table 4-8: Changes in Key Economic & Demographic Variables, 2008 to 2031, Scenario 4 NHPAU Upper end housing supply range, Cambridgeshire, '000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	33.5	13.5	17.1	20.6	40.8	125.6 (13.4%)	940.5
Households nos.	33.3	15.1	18.3	26.6	46.2	139.6 (12.9%)	1,079.0
Population nos.	74.1	26.7	31.6	38.4	83.7	254.5 (14.4%)	1,770.6
Employment nos.	66.1	12.2	11.3	16.3	36.7	142.5 (15.9%)	893.9
Employed residents nos.	29.2	16.8	11.2	20.5	35.3	113.1 (15.4%)	731.9
Workplace population nos.	55.6	11.9	10.8	15.0	35.0	128.3 (16%)	800.2
Dwellings annual	1.40	0.56	0.71	0.86	1.70	5.23 (13.4%)	39.2
Households annual	1.39	0.63	0.76	1.11	1.93	5.81 (12.9%)	45.0
Population annual	3.09	1.11	1.32	1.6	3.49	10.61 (14.4%)	73.8
Employment annual	2.75	0.51	0.47	0.68	1.53	5.94 (15.9%)	37.3
Employed residents annual	1.22	0.7	0.47	0.85	1.47	4.71 (15.4%)	30.5
Workplace population annual	2.32	0.49	0.45	0.63	1.46	5.35 (16%)	33.3

Source: Oxford Economics

- 4.30 Scenario 4 embodies the upper end of the NHPAU's housing supply requirement which averages 39,200 additional homes a year in the East of England. This is significantly higher

than the current HI Policy; the ‘residual’ requirement is 27,000 in the region. Scenario 4’s forecast for Cambridgeshire is 5,230 net new dwellings a year, well above the ‘residual’ policy requirement of 3,900 dwellings. It should be noted that both Fenland and East Cambridgeshire have recently (2006/07) been building at the rate indicated by this Scenario, however.

- 4.31 The annual employment forecasts associated with this Scenario at a regional level are above the growth achieved between 2001 and 2007 (37,300 as compared with 33,500 as indicated by OE’s model). They are well ahead of the current Plan’s regional target, (22,600 jobs per annum). The forecasts for Cambridgeshire envisage an additional 5,940 jobs a year – considerably higher than the Plan’s E1 target annualised, (3,750 jobs). However, OE indicate that Cambridgeshire actually achieved job growth of 7,800 a year on average between 2001 and 2007. As discussed earlier, there is conflicting evidence from ONS household surveys which challenges such a high rate of growth occurring.
- 4.32 This Scenario forecasts much higher growth in households than in dwellings. This is surprising as the Scenario assumes that there is no worsening of housing affordability as compared with 2007 and it might be assumed that the increase in households would be similar to the increase in dwellings.
- 4.33 The Scenario forecasts considerably higher growth in the workplace population as compared with numbers of employed residents – up by 800,000 regionally as compared with 732,000 over the period 2008 to 2031. This significantly reduces net out-commuting from the region, falling from 196,000 in 2001 down to 112,500 by 2031. For Cambridgeshire net in-commuting rises to 30,500, with net in-commuting to Cambridge City forecast to be 58,000 in 2031.
- 4.34 **Conclusions:** The house-building levels required to meet this Scenario are significantly higher than achieved in the region in the recent past or as anticipated to meet the ‘residual target’ of the current RSS. The figures are also significantly higher for most Cambridgeshire districts. The employment forecasts appear to be a major challenge regionally; the Cambridgeshire situation is hard to judge. Whilst the annual county forecast in this Scenario exceeds the RSS policy E1 target, it is lower than may have been achieved in the period 2001 to 2007.
- 4.35 If achieved, the employment and related working population forecasts would result in increased in-commuting to Cambridgeshire by 2031, especially to Cambridge City.

Scenario 5: GVA growth at RES targets (unconstrained)

Table 4-9: Changes in Key Economic & Demographic Variables, 2008 to 2031, Scenario 5: GVA growth at RES targets, (unconstrained), Cambridgeshire, ‘000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	32.9	15.4	10.4	27.3	29.8	115.8 (14.5%)	796.1
Households nos.	32.7	16.9	12.1	33.1	35.7	130.5 (13.9%)	940.7
Population nos.	72.7	31.0	17.3	53.9	59.0	233.9 (16%)	1,462.5

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Employment nos.	68.4	13.8	8.6	22.9	32.9	146.7 (16.1%)	909.8
Employed residents nos.	29.8	17.7	8.3	23.7	34.6	114.0 (15.3%)	744.9
Workplace population nos.	57.6	13.5	8.3	21.3	31.5	132.2 (16.2%)	815.8
Dwellings annual	1.37	0.64	0.43	1.14	1.24	4.82 (14.5%)	33.2
Households annual	136	0.7	0.5	1.38	1.49	5.44 (13.9%)	39.2
Population annual	3.03	1.29	0.72	2.25	2.46	9.75 (16%)	60.9
Employment annual	2.85	0.58	0.36	0.96	1.37	6.11 (16.1%)	37.9
Employed residents annual	1.24	0.74	0.35	0.99	1.44	4.75 (15.3%)	31.0
Workplace population annual	2.4	0.56	0.34	0.89	1.31	5.51 (16.2%)	34.0

Source: Oxford Economics

- 4.36 Scenario 5 is the first of two which forecast the implications of higher productivity growth. It is unconstrained by housing supply factors. In terms of dwellings it forecasts 33,200 units per annum in the region as a whole. For Cambridgeshire the forecast is 4,820 dwellings a year, 2008 to 2031. These levels are significantly higher than the annual ‘residual’ targets of the current RSS, (27,000 regionally and 3,900 for Cambridgeshire).
- 4.37 The forecast for the region of 37,900 jobs per annum significantly exceeds the 22,600 annual target of the current Plan and the observed annual growth of 33,500 in employment between 2001 and 2007. Consequently the forecast must be identified as very difficult to achieve – particularly as the current recession is not fully taken into account. In the case of Cambridgeshire annualised employment growth of over 6,100 is only just below the model’s estimate of job growth occurring 2001 to 2007, (7,800 jobs per annum). It is significantly higher than the current Plan target of 3,750 additional jobs each year, which is based on an ‘enhanced growth’ scenario produced by Experian in 2003.
- 4.38 In common with other scenarios, this forecast suggests that the annual increase in households will significantly exceed the increase in dwellings. With increased prosperity it is hard to understand why this should be true; higher per capita wealth should enable households to be accommodated in the new dwellings built. In Cambridgeshire the scenario shows an additional 130,500 households as against 115,800 dwellings, 2008 to 2031.
- 4.39 The forecast of growth in employed residents in the region averages 31,000 each year, as compared with an annual 34,000 increase in the working population. This enables net out-commuting from the region to fall to around 107,000 by 2031. In Cambridgeshire the scenario indicates net in-commuting of around 34,000 by 2031, with Cambridge City experiencing high net in-commuting of almost 60,000 and both East Cambridgeshire and Huntingdonshire net out-commuting of over 12,000.

- 4.40 **Conclusion:** GVA growth to meet RES targets requires a significant uplift in the provision of new housing compared with the current RSS ‘residual’ target both regionally and locally. The associated growth in employment is also a challenge as it exceeds regional performance in recent years. In common with other scenarios the faster growth in workplace population than employed residents brings benefits at a regional level, with net out-commuting reducing, but increases pressures on Cambridgeshire, where net in-commuting is set to rise.

Scenario 6: GVA growth constrained by RSS housing targets

Table 4-10: Changes in Key Economic & Demographic Variables, 2008 to 2031, Scenario 6: GVA growth constrained by RSS housing targets, Cambridgeshire, ‘000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% East)	East
Dwellings nos.	26.7	9.4	12.5	13.4	32.4	94.3 (14.4%)	652.8
Households nos.	26.5	11.2	14.0	19.6	38.1	109.5 (13.6%)	806.3
Population nos.	57.7	17.2	21.8	21.9	64.8	183.4 (16.1%)	1,138.3
Employment nos.	62.4	10.6	9.7	12.5	34.5	129.6 (16.1%)	804.1
Employed residents nos.	24.9	13.1	7.8	13.1	29.7	88.6 (16.3%)	542.8
Workplace population nos.	52.6	10.3	9.3	11.5	33.0	116.8 (16.1%)	723.9
Dwellings annual	1.11	0.39	0.52	0.56	1.35	3.93 (14.4%)	27.2
Households annual	1.1	0.47	0.58	0.82	1.59	4.56 (13.6%)	33.6
Population annual	2.41	0.72	0.91	0.91	2.7	7.64 (16.1%)	47.4
Employment annual	2.6	0.44	0.4	0.52	1.44	5.4 (16.1%)	33.5
Employed residents annual	1.04	0.55	0.33	0.55	1.24	3.69 (16.3%)	22.6
Workplace population annual	2.19	0.43	0.39	0.48	1.37	4.87 (16.1%)	30.2

Source: Oxford Economics

- 4.41 Scenario 6 restricts GVA growth by current RSS housing targets. Consequently the dwelling targets are considered feasible, both regionally and locally, if sufficient land can be identified in locations which meet spatial policy, environmental and sustainability criteria.
- 4.42 The employment forecasts are challenging and envisage an annual increase of 33,500 jobs regionally and 5,400 in Cambridgeshire, well above current policy E1 targets. They are, however, realistic when set against the recorded growth in ABI employee jobs as recorded 2001 to 2006.
- 4.43 As with all other scenarios, the model indicates that household growth will outstrip the increase in dwellings both regionally and locally. The restriction on new dwellings and hence population growth results in an annual increase of just 22,600 employed residents regionally. The growth in the region’s workplace population is forecast to be considerably higher, at over 30,000 a year. Between 2008 and 2031, the region’s employed residents would increase by

543,000, around 181,000 less than the forecast increase in the working population, (724,000). Consequently by 2031 the East of England could be ‘in balance’ in net commuting terms. However, in Cambridgeshire net in-commuting could increase to almost 44,000, with Cambridge City once more experiencing high net in-commuting of almost 60,000.

- 4.44 Conclusion: Regionally this scenario goes further than any other to establishing ‘sustainability’, as net out-commuting is eliminated by 2031. Housing growth is in line with RSS ‘residual’ targets. However the employment growth required to help meet this goal is a challenge when set against current Plan targets. Cambridgeshire stands to contribute around 16% of the region’s job growth. If realised, by 2031 Cambridgeshire will experience significant in-commuting with a major in-flow to Cambridge City and out-commuting from East Cambridgeshire and Huntingdonshire.

Net commuting

- 4.45 Table 4-11 shows the net commuting flows from the OE model at a district, county and regional level for 2001 and 2007 and the different scenario forecasts for 2031.

Table 4-11: Net commuting flows for Cambridgeshire & districts, baseline & scenarios, 2001, 2007 and 2031, ‘000 (+ = in-commuting; - = out-commuting)

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County	East
Net commuting 2001	+ 29.5	- 12.3	- 5.9	- 13.3	- 5.0	- 7.1	- 196.0
Net commuting 2007	+ 31.7	- 7.9	+ 1.2	- 10.6	+ 1.0	+ 15.3	- 180.8
Baseline 2031	+ 58.1	- 11.6	+ 1.5	- 12.2	- 1.6	+ 34.2	- 124.0
Baseline low migration 2031	+ 57.2	- 11.4	+ 1.6	- 12.1	+ 1.3	+ 34.0	- 127.5
RSS residual housing 2031	+ 55.6	- 12.1	+ 1.2	- 15.3	+ 0.8	+ 30.3	- 127.5
RSS average housing 2031	+ 55.0	- 11.8	+ 1.3	- 15.0	+ 0.9	+ 30.4	- 128.5
NHPAU Lower 2031	+ 56.4	- 12.3	+ 1.0	- 15.5	+ 0.8	+ 30.4	- 123.2
NHPAU Upper 2031	+ 58.0	- 12.9	+ 0.7	- 16.1	+ 0.6	+ 30.5	- 112.5
GVA growth RES 2031	+ 59.5	- 12.1	+ 1.2	- 12.9	- 2.1	+ 33.7	- 106.6
GVA growth constrained 2031	+ 59.5	- 10.7	+ 2.7	- 12.1	+ 4.3	+ 43.7	+ 3.5

Source: Oxford Economics

- 4.46 As described in the commentaries on both the baseline and scenario forecasts, each model run gives rise to different forecasts of workplace population, (linked to employment) and to numbers of employed residents. Table 4-11 pulls these together so that the change in net commuting can be observed over the new RSS timeline.
- 4.47 It is interesting that every run results in a significant reduction in net out-commuting by 2031. This is because the forecasts of employment growth are relatively high – and higher than the targets of the current RSS when annualised. The realism of this assumption requires further testing as it appears to be based on just one data source – the ABI.

Migration

- 4.48 The OE model output provides an estimate of ‘net migration’ by district and year for baseline forecasts and scenarios. However, this is expressed in terms of net migration to/from the world outside the East of England, in that the sum of district migration flows meets the regional total. Table 4-12 provides an overview of the annual average net in-migration flows into Cambridgeshire and its districts from outside the region, broken down into the periods 2001 to 2007 and 2008 to 2031.

Table 4-12: Net in-migration, annual average for Cambridgeshire & districts, baseline & scenarios, 2001 to 2007 and 2008 to 2031, ‘000

Variable	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County (% of East)	East
Net migration 2001 to 2007	1.4	1.2	1.6	1.1	0.9	6.1 (16.9%)	36.0
Baseline 2008 to 2031	2.4	0.9	0.6	1.4	1.5	6.8 (20.3%)	33.4
Baseline low migration 2008 to 2031	2.1	0.8	0.5	1.2	1.4	6.0 (21.7%)	27.5
RSS residual housing 2008 to 2031	1.8	0.4	0.9	0.2	2.0	5.2 (19.1%)	27.5
RSS average housing 2008 to 2031	1.7	0.4	0.9	0.2	1.8	5.0 (19.3%)	25.8
NHPAU Lower 2008 to 2031	2.0	0.5	1.0	0.4	2.2	6.1 (17.5%)	35.1
NHPAU Upper 2008 to 2031	2.5	0.8	1.3	0.9	2.7	8.2 (15.3%)	53.9
GVA growth RES 2008 to 2031	2.5	1.0	0.7	1.6	1.7	7.4 (18.0%)	41.1
GVA growth constrained 2008 to 2031	1.8	0.4	0.9	0.2	1.9	5.3 (19.2%)	27.5

Source: Oxford Economics

- 4.49 Table 4-12 indicates that net in-migration into Cambridgeshire averaged 6,100 a year between 2001 and 2007. For the period 2008 to 2031, the baseline shows an average annual inflow of 6,800, reducing to 6,000 for the ‘low migration’ variant. The scenario attracting the lowest migration flow is Scenario 2: RSS with average housing development. The annual figure is 5,000. The scenario with the highest migration in-flow to the county is Scenario 4: the NHPAU’s ‘Upper end housing supply’. Annual in-migration amounts to 8,200 for Cambridgeshire as a whole.

Overview of scenarios & baseline forecasts - 2031

- 4.50 Table 4-13 provides a broad overview of the scenarios and baseline forecasts as at 2031.

Table 4-13: Scenarios & baseline forecasts for Cambridgeshire – Key Indicators & commentary, 2031

Scenario & baseline	Dwelling increase 2008-31	Employment increase 2008-31	Net commuting Cambs 2031	Net commuting region 2031	Commentary
Baseline	109,000	131,800	34,200 (net in) 58,100 for Cambridge City	124,000 (net out) large reduction on 2001	Significantly higher rates of employment and housing growth than assumed by the current East of England Plan. Very dependent on ABI employee data as input. High net in-commuting to Cambs
Baseline – low migration	100,600	125,000	34,000 (net in) 57,200 for Cambridge City	127,500 (net out) large reduction on 2001	Higher rates of employment and housing growth than assumed by the current East of England Plan. High net in-commuting to Cambs
Baseline – high household formation	132,400	Assumes baseline	Assumes baseline	Assumes baseline large reduction on 2001	Assumes baseline. Requires further work for testing purposes as household numbers in model have not been adjusted in line with increased dwellings
Scenario 1 RSS residual housing growth	94,100	118,800	30,300 (net in) 55,600 for Cambridge City	127,500 (net out) large reduction on 2001	Feasible as regards housing if sufficient land can be identified in appropriate locations. Suggests high job growth and high net in-commuting, especially to Cambridge City
Scenario 2 RSS Average housing growth	91,400	116,500	30,400 (net in) 55,000 for Cambridge City	128,500 (net out) large reduction on 2001	Feasible as regards housing if sufficient land can be identified in appropriate locations. Suggests high job growth and high net in-commuting, especially to Cambridge City
Scenario 3 NHPAU lower end range	103,500	125,900	30,400 (net in) 56,400 for Cambridge City	123,200 (net out) large reduction on 2001	House building higher than in current East of England Plan but at rate achieved 2007/08 in Cambs – may result in increased imbalances of housing & jobs within Cambridgeshire
Scenario 4 NHPAU upper end range	125,600	142,500	30,500 (net in) 58,000 for Cambridge City	112,500 (net out) very large reduction on 2001	House building significantly higher than previously achieved either regionally or in Cambs; employment figures a major challenge regionally. High net in-commuting to Cambs
Scenario 5 GVA growth at RES targets, housing unconstrained	115,800	146,700	33,700 (net in) 59,500 for Cambridge City	106,500 (net out) very large reduction on 2001	A significant uplift in both employment and housing growth as compared with current East of England Plan; increased net in-commuting to Cambs
Scenario 6 GVA growth at RES targets, housing constrained	94,300	129,600	43,700 (net in) 59,500 for Cambridge City.	3,500 (net in) very large reduction on 2001	Goes further than other scenarios to establishing 'sustainability' regionally as net out-commuting is eliminated by 2031. Employment growth is a major challenge when compared with current East of England Plan targets; very significant in-commuting to Cambs and Cambridge City

Source:

5: Economic conditions & options testing advice

- 5.1 This chapter firstly considers the impact of the current economic downturn on the delivery of housing and job creation and looks at issues of particular consequence for Cambridgeshire. Secondly, it considers if alternative time periods are required for the scenarios to be effective and proposes that some sensitivity testing of the scenarios is carried out by OE using alternative assumptions about recent employment growth.

The impact of the current economic downturn - overview

- 5.2 The OE model has been run to produce baseline and scenario forecasts in early autumn 2008, well after the ‘credit crunch’ had become a reality but before the collapse of confidence in the banking sector in October 2008. The ‘profile’ of employment growth indicated for the region for the period 2008 through to 2010 shows stagnation, with only modest growth resuming in 2011. This profile is shared by the baseline forecasts and all six scenarios. However, it is assumed that the demand for dwellings continues to grow throughout this period; in Cambridgeshire such net growth averages 4,000 to 5,000 a year between 2008 and 2012. At the regional level, net new dwellings are forecast to increase by between 25,000 and 30,000 a year over this period.
- 5.3 The NIESR⁷ report on the UK economy, published 22nd October 2008, reported that the economic downturn became a recession in the third quarter of 2008. It forecast an overall contraction of 0.9% in the UK economy in 2009, with the recession expected to last four quarters. Only very gradual growth was anticipated in 2010. However other experts have more recently predicted a deeper and longer-lasting recession. The Bank of England anticipates a 2% decline in GVA during 2009. Consumer spending is expected to fall throughout 2009 due to credit rationing and the Chief Executive of Barclays Bank anticipates that lending will remain tightly controlled throughout 2010; ILO unemployment is expected to breach 3 million in 2009, (up from 1.5 million in the summer of 2008 and close to 2 million by November). The global recession expected in 2009 will be the worst that industrialised countries have faced for more than 30 years.
- 5.4 Government figures show a steep decline in housing transactions and the Council of Mortgage Lenders (CML) reported that total mortgage advances fell to £14.6bn in November 2008, the lowest level since February 2002. This is 22% lower than in October and 51% below the level for November 2007.⁸ House prices have dropped by an estimated 10% to 15% and a further reduction of at least 15% is anticipated during 2009. Some commentators have even suggested that prices could drop by 50% from the summer 2007 peak. Early signals in October that housing market activity could be hitting a floor have proved to be wrong.

⁷ National Institute of Economic & Social Research

⁸ The Guardian newspaper, 20th December 2008

- 5.5 It is possible that the sharp increase in unemployment could further destroy confidence in the housing market and the reduction in Bank Rate has not yet fed through to widely-available cheaper mortgage interest rates. Credit remains extremely difficult to obtain without a large deposit. The CML expects repossessions to increase from an estimated 45,000 this year to 75,000 in 2009 and the numbers of households in arrears to double, reaching 500,000. There is no consensus on just how long the housing market will be depressed; views of 'experts' range from one to several years.
- 5.6 There are many examples nationally, regionally and locally of builders stopping work on new housing schemes and even 'moth-balling' uncompleted properties. It is considered that the 'buy to let' market, which accounted for 10% of new mortgages nationally in 2007, is particularly affected. The prices of flats have slumped more than of other property types.
- 5.7 The recession and depressed housing market suggest that the assumptions of the OE model are optimistic for the period 2008 to 2011, especially with regard to employment levels and dwelling provision. Numbers of jobs are now expected to decline, with unemployment returning to or even exceeding the levels of the early 1990s.

The impact on Cambridgeshire

- 5.8 The Cambridgeshire economy may prove to be relatively resilient to the economic recession but it will not escape. It is unlikely that public sector employment will be significantly reduced over the short-term and some publicly-funded capital infrastructure schemes may be brought forward to stimulate economic growth. Similarly, publicly-funded bodies, such as the universities and Research Councils, are also expected to retain current levels of spending.
- 5.9 However, with consumer spending declining there will be an impact on retailing, leisure services, catering and manufacturing. A decline in global trade will impact on freight transport as well as retailing and wholesaling. The downturn in the housing market has already had a major impact on the construction industry; the reduction in housing transactions will also have a negative impact on a wide range of businesses including estate agents, solicitors, removals companies, building materials sales and installations, suppliers of electrical goods and house furnishings. Retailers have closed and more closures are expected in 2009.
- 5.10 A national downturn in manufacturing could impact particularly on South Cambridgeshire, Huntingdonshire and Fenland where this sector is strong. Any companies supplying capital goods to manufacturing will be particularly badly hit as sharp falls in orders have already been announced.
- 5.11 The decline in land values and house prices has important implications for the provision of affordable housing. Around 70% of new affordable housing is currently provided through S106 agreements. The financial viability of sites is affected, including the infrastructure and affordable housing which can be realistically provided. There will be increasing demands for higher rates of Social Housing Grant and investment from the Housing & Communities Agency (HCA) to support affordable housing and to pump-prime necessary infrastructure. Any reduction in the affordable housing supply will impact on the total house building programme.

- 5.12 Further work is required on modelling the financial viability of planned housing developments in Cambridgeshire which include affordable homes. This would help improve understanding of the long-term impact of reduced land values and property prices on potential developer contributions to infrastructure and affordable housing.

Options testing advice

- 5.13 It is our view that the future rate of growth in Cambridgeshire will be determined primarily by the prospects for employment growth rather than housing supply. All baseline forecasts and scenarios present an optimistic picture of employment growth, with the increase in the workplace population outstripping the growth in numbers of employed residents. To this extent there is, consequently, a degree of flexibility in the forecasts as regards the achievement of higher housing targets (as compared with the current RSS). If the model's basic assumptions are robust, Cambridgeshire could experience lower rates of employment growth yet still maintain a high rate of new house building and a sustainable balance between future workplace population and numbers of employed residents.
- 5.14 However, as discussed in Chapters 3 and 4, there is uncertainty about the robustness of the model's employment forecasts, especially with respect to Cambridgeshire. Conflicting evidence exists with respect to levels of job growth experienced in the period 2001 to 2007. If the actual growth in the workplace population over this period is accurately estimated by the APS then it could prove more difficult to maintain high rates of house-building in future, (without generating net out-commuting). This is because growth in the labour supply could outstrip the local growth in employment.
- 5.15 We would advise that OE is requested to revise the assumptions in all the Scenario and Baseline model runs for Cambridgeshire and the region to reflect APS-based workplace population (and related employment) growth 2004 to 2007. This would provide a valuable sensitivity test.
- 5.16 Because of the uncertainty over such basic model inputs as employment levels it is not possible to provide an authoritative view as to the time line over which different scenarios might be realised. It is our view that the scenarios which most closely align with the current RSS housing and employment targets are most realistic – Scenarios 1, 2, 6 and 3. In these instances the 2031 targets may be delayed but only by the duration of the current recession. The higher the forecast 2031 employment and housing numbers, the more difficult the challenge - and the longer the time span for achievement.
- 5.17 Scenario 4 requires an additional 125,600 new homes to be built in Cambridgeshire between 2008 and 2031, 37%, or 34,200, more than the RSS 'residual' Scenario 2, (91,400). If the local economy, however, is only able to support a continuation of current RSS new build rates it would take 33 years to reach the Scenario 4 target figure – 2041. The new dwelling target assumed by Scenario 5, (115,800 additional homes between 2008 and 2031), would take 30 years to reach at RSS 'residual' build rates.

Annex A: Cambridgeshire County Council's forecasts

A.1 The following table summarises the key forecasts for population, labour supply, households and dwellings for the period 2001 to 2031. In order to enable comparison with the Baseline forecasts and scenarios produced by Oxford Economics, the data is split 2001 to 2007 and 2008 to 2031, providing both total growth and average annual growth.

Table A-1: Forecasts of key demographic & housing indicators for Cambridgeshire & Districts, 2001-2007, 2008-2031, '000

Key indicators	Cambridge City	East Cambs	Fenland	Hunts	South Cambs	Cambs County
Population 2001-2007 (annual average)	5.3 (0.88)	7.0 (1.17)	7.6 (1.27)	4.8 (0.8)	9.9 (1.65)	34.8 (5.8)
Population 2008 – 2031 (annual average)	42.4 (1.77)	8.9 (0.37)	15.9 (0.66)	9.5 (0.4)	58.6 (2.44)	135 (5.63)
Labour supply 2001-2007 (annual average)	3.4 (0.57)	4 (0.67)	4.2 (0.7)	3.4 (0.57)	5.3 (0.88)	20.2 (3.37)
Labour supply 2008-2031 (annual average)	17.5 (0.73)	0 (0.0)	3.7 (0.15)	-2.1 (-0.09)	22.3 (0.93)	41.5 (1.73)
Households 2001-2007 (annual average)	1.5 (0.25)	3.6 (0.6)	3.6 (0.6)	4.3 (0.72)	5.6 (0.93)	18.6 (3.1)
Households 2008-2031 (annual average)	20.4 (0.85)	8.2 (0.34)	11.4 (0.48)	13.4 (0.56)	31.4 (1.31)	84.8 (3.53)
Dwellings 2001-2007 (annual average)	3.0 (0.5)	3.9 (0.65)	4.1 (0.68)	3.6 (0.6)	4.7 (0.78)	19.3 (3.22)
Dwellings 2008-2031 (annual average)	19.7 (0.82)	9.0 (0.38)	12.0 (0.5)	13.1 (0.55)	33.1 (1.38)	86.9 (3.62)

Source: Cambridgeshire County Council Research Group

A.2 It should be noted that the labour supply forecasts are derived from ONS national forecasts of age/sex specific economic activity rates, calibrated to local areas using 2001 Census information. The rates assume no changes after 2016 and consequently are unlikely to take full account of the changes in the national State pension age for women or trends for people to work past the State pensionable age. The labour supply forecasts post 2016 should be considered as a floor and could increase to the average annual growth estimated for the period 2001 to 2007, (3,370, rather than 1,730).

A.3 The County Council's forecasts basically continue RSS build rates through to 2031. However, they assume that by 2021 Cambridge City will be basically 'built-out' and nil net migration is assumed thereafter. The migration that might otherwise have been expected in Cambridge has been allocated, instead, to South Cambridgeshire post 2021.