# Strategic Housing Market Assessment South Essex

Appendices

May 2016



## Appendix 1: Stakeholder Comments and Responses

## Stakeholder Workshop 1 – March 2015

In March 2015, a stakeholder workshop was held to present attendees with an overview of the methodology to be used in the study, and the initial outputs relating to the definition of the housing market area, market signals and population and household projections. Points raised during and following the event are summarised below.

## Defining the Housing Market Area

- Noted the importance of taking the 'London effect' into account, by considering the current spatial relationship with London and the potential future implications if London cannot meet its housing needs or continues to see significant growth in employment. This could have implications for house prices, commuting patterns and migration trends, and informed the development of an additional London-based scenario by Edge Analytics
- Clarification regarding the extent to which the SHMA will develop sub-area geographies, and it was confirmed that the SHMA would not develop sub-areas but would instead focus analysis on the TGSE housing market area and its five constituent authorities, with the use of GIS mapping where appropriate to highlight spatial trends
- Several comments highlighted the importance of recognising that different parts of TGSE perform different roles within the wider geography. Noted that spatial variation between the authorities would be drawn out within the analysis based on the evidence in the report, in order to ensure that the report reflects the differences between authorities
- One attendee queried the implications of the emerging housing market area geography definition for Dunton Garden Suburb, given that this lies between housing markets. On this basis, it is likely that the settlement will meet needs from both geographies, but it is suggested that this remains a subject of continuing discussion between the relevant authorities

## Demographic Factors

- Some attendees suggested that the 2012-based household projections should be further interrogated with potential for sensitivities based on implied household formation rates and some also questioned why population projections were used when household projections are identified as the 'starting point' within the PPG. The timing of the stakeholder event only two weeks after publication of the 2012-based household projections resulted in the presentation of only a limited amount of information from this new dataset. Noted that the new dataset would form the 'starting point' in the assessment of housing need within the SHMA, and would be fully interrogated with further consideration of the underlying population inputs and the assumptions around household formation
- Recognised that the 2012-based population projections are nationally underpinned by a relatively low level of net international migration, compared to the levels which have

been seen since 2012. This was the subject of further interrogation and sensitivity modelling by Edge Analytics

- Query regarding the potential development of a pre-recession scenario, the merits of which were subsequently considered by Turley and Edge Analytics. Following detailed demographic analysis and in the context of the analysis of considering the alignment between population change and employment growth forecast, this was not considered appropriate
- Several attendees felt that it was particularly important to consider the impact of the ageing population, with the potential implications for the type of housing required established. Noted that the SHMA would break down the modelling to understand the types of households projected to grow, and the subsequent implications for the size of property required. This can assist in ensuring that future supply is matched with the projected change in the profile of households in TGSE, with the specific needs of older people also separately considered

## Affordable Housing

- Query regarding what is available as affordable need, which is considered to fall outside of the scope of the SHMA. The Councils will further consider delivery factors through assessments of viability, and the setting of targets on affordable housing delivery. The SHMA acknowledges that the delivery of affordable housing can be influenced by factors other than need, such as delivery mechanisms and the availability of finance and funding
- The potential role of intermediate housing (affordable rent, shared ownership etc) was noted, with the SHMA including information on the relationship between income and the cost of accessing different housing products, including sub-market rents at various rates

## Miscellaneous

- Recognition of the potential future impact of Government policies. The SHMA recognises that the assessment is taking place at a point in time, and that future need for housing could be shaped by Government policies. Reference is made where appropriate to emerging policies which are likely to have either direct or indirect implications for the SHMA and its assessment of housing need, and the impact of recently introduced policies will be considered where data is available. The impact of welfare reforms on affordable housing, for example, is considered, drawing upon published secondary evidence and feedback from stakeholder workshops. Furthermore, the SHMA references how the future expansion of Right to Buy could have implications for the available supply of social rented stock, which will directly impact the calculation of affordable housing needs given that this is largely based on historic data. It will, however, be the responsibility of the Councils to monitor the implementation of future Government policies, and ascertain whether this is likely to have a significant impact on the conclusions of the SHMA
- Attendees queried how backlog is considered within the SHMA. The development of variant demographic projections is intended to highlight the impact of constraints on shaping need. The historic rate of development against plan targets is also identified as a market signal within the PPG, and as such the recent rate of development and its alignment with planned targets is examined within the SHMA. Where a significant

backlog has accumulated, this can provide justification to adjust the 'starting point', either through considering longer term demographic trends or adjusting household formation rates. Within the affordable housing needs assessment, the calculation of the backlog represents a central part of the calculation, with the current backlog balanced against committed supply to establish the amount of affordable housing needed to clear the backlog. This is assumed to be cleared within the first five years of the plan period, in line with the PPG

## Stakeholder Workshop 2 – September 2015

The second workshop followed a similar format to the first workshop, with draft findings from the study presented in full and a series of targeted sessions used to obtain feedback. Comments raised in relation to different stages of the assessment are summarised below, and were taken into account in finalising the report.

## Defining the Housing Market Area

- Interest in the illustration of migration flows in the presentation, with the comparative analysis of commuting also providing valuable context. The importance of understanding the roles of regional employment nodes such as Southend Airport was highlighted
- Surprise at the comparatively tight definition of the Travel to Work Area in TGSE, as it
  was assumed that London would have a bigger impact given the comparatively strong
  train connections and the relative affordability of housing in TGSE. It was suggested that
  this could be driven by families where one person works in central London, with others
  working locally, and it was also suggested that the geographic effect of London is
  growing and is important to consider
- Transport infrastructure could affect market geographies in future, with investment in Crossrail potentially impacting north/south relationships from London. The Lower Thames Crossing could also have an effect, in providing access and time savings for a wider population, while technological advancements including high speed broadband enable people to migrate to cheaper housing locations without changing their place of employment
- The definition of the housing market area was broadly accepted across stakeholder groups, although some questioned its definition given that there was also a wider pull across a more extensive geographic area in reality. Some attendees questioned whether Brentwood could fit into the housing market area
- Suggested that it would be beneficial to more fully understand the profile of people moving from London, including age profile and types of household, and it was suggested that this is at least partially driven by affordability, resulting in lower income families migrating to TGSE
- Suggested that commuting distance, house prices and the cost of train travel could be compared to establish relationship, with identified 1 hour commuting distances from main centres or transport hubs potentially providing useful context. The cost of travel was likely to be a factor in the operational housing market area, with travel prices generally cheaper travelling towards London rather than away from London. Question

raised regarding whether people commute long distances due to a shortage of suitable homes, or whether there were additional factors shaping this trend

- House price differentials likely to be a key factor in the relationship between London and TGSE, with this likely impacting upon the supply of affordable housing and deliverability over the longer term. This could be impacted by the future supply of housing in London, with an expected skew towards higher density and private rented housing. A flat in London could have a comparable price to a larger property in TGSE, potentially attracting commuters to the area, while some felt that housing demand pressures in London were being driven by international markets
- Some felt that quality of life can be perceived as better in TGSE particularly in relation to schools and open space, for example – which can generate demand. This could, however, deter people from moving to parts of TGSE where school facilities are comparatively poor

## Demographic Factors

- Surprise that the latest 2012-based sub-national population projections expects a comparatively negative picture for international migration, with agreement that a surge in international migration a potential future driver of population growth. The impact of this is expected to vary across TGSE, with Southend attracting higher flows due to the size of the rental market
- Danger that 'London effect' is under-estimated, with the capital constrained in its growth in all directions and likely to generate out-migration due to rapid escalation in house prices. There was a general consensus that outflows from London will continue, due to an under-provision of planning for and delivery of housing. This is reflected in the latest GLA forecasts, which confirm a recent uplift in migration flows from London to TGSE
- Suggestion that the relationship between TGSE and London should be compared and benchmarked against other areas, such as Kent, while further analysis should be undertaken to understand the drivers behind historic changes in the London relationship, with the comparative affordability an important driver
- Anecdotal evidence cited which suggests that people are increasingly bucking the trend by moving from TGSE to London, due to lifestyle changes and the attraction of the 'city'
- Regarding the potential mis-estimation of the population in Southend-on-Sea, it was noted that no use has been made of voter registration data, alongside GP registrations. However, GP registration data was seen as a useful addition to the analysis
- Clarification sought on the definition of households, as there was uncertainty around how population projections are translated into households and dwellings. It was emphasised that this will need to be clearly explained in the report
- Important to recognise that historic demographic trends have been influenced by constraints such as Green Belt

## Economic Factors

- Agreement that there is likely to be a close relationship between population growth and job creation, although this is dependent upon the types of jobs created. Those on low wages, for example, are less likely to be able to afford to commute long distances
- Query regarding the variation in housing need based on different assumptions on economic participation. It was explained that different assumptions had been made to reflect uncertainty, and it was not unusual for a range of outcomes to be presented in the study. Views were sought from the workshop on the different influencing factors which would help to shape the study going forward
- Clarification sought regarding whether forecasts include job losses, with confirmation given that this represents a net position. Some felt that net employment growth could be expected to continue due to planned regeneration, and known projects at Southend Airport and Tilbury Port/London Gateway
- Suggestion that there was an increased focus on high density housing in London, in preference to sites which would traditionally be used for employment. This could push demand for logistics and/or employment uses beyond the M25, although some felt that it was difficult to attract logistics companies due to a preference towards central locations in the Midlands
- Concern around whether job creation in TGSE is realistic, with allocation of land for employment not necessarily resulting in immediate job creation. There were also concerns about skills, with a suggested need to introduce improved training
- Request for further detail on the types of jobs created, including the skills required and the subsequent effect on housing. Is housing needed to attract the jobs and workers? Specific question regarding the types of jobs created at the new port
- Expansion of airport and business park could act as a draw for specialist skills and professional skilled workers, while other employment hubs could attract migrants. Successfully supporting businesses in TGSE could impact upon the need for housing, by generating an additional demand for housing as people aspire to move to TGSE and grow families
- Agreement that people were likely to work longer in future, but suggestion that this could be more flexible, with increased part time or low skilled retail roles. Some felt that this was a significant assumption, although others felt that this could reflect the entrepreneurial spirit and dynamism of Essex and the need for people to work longer in response to pension changes and increased mortgage costs
- Suggestion that there is a disconnect between authorities' aspirations and the housing and employment growth that occurs, while some suggested that growth in jobs and employment could be constrained by the quality of existing infrastructure
- House price growth could have an economic impact, while housing development can generate range of jobs in construction industry as well as supporting technical and professional occupations, including planners and surveyors

- Observation that forecasts expect a surge in job creation before levelling off, with some questioning whether this is likely or realistic. Some suggested that a further recession could be expected over the short term
- Job growth in TGSE could be expected to be filled by a local workforce provided that there is a match between jobs and skills – but commuters from nearby areas could also be attracted. The impact of a changing commuting ratio should be considered, although caution was expressed regarding the likelihood of jobs being occupied by local workers. Relative containment of workforce suggested as a comparatively unique characteristic of the area, reflecting the coastal effect and the radius from Southend
- Variation across TGSE highlighted, with Thurrock perceived as a strong employment location and Basildon a further economic centre, although the borough does currently have high levels of unemployment which are driven by a disconnect between the types of jobs created and the skills profile of the local labour force
- View shared that it is sensible to plan for a return to pre-recession unemployment rates, as whilst it is acknowledged that there is high unemployment in some groups in Southend, this can be skewed by seasonal effects

## Market Signals

- Rental market in Southend-on-Sea identified as a key feature of the local market, which
  is predominantly made up of existing stock. There are, however, examples of new build
  rental property coming forward, and it was observed that there is nationally an increased
  entry of institutional investors to this market. Across wider TGSE, some felt that the
  private rented sector was not meeting housing needs, and it was suggested that longer
  term contracts could be required. The threat of future rent controls was identified as a
  significant risk factor for potential investors, however
- As rents increase, renting in the private rented sector becomes less affordable, with the freezing of the Local Housing Allowance and the cap on social rent making the sector less accessible to those on lower incomes. Those on lower incomes also face difficulty in obtaining a mortgage, and therefore rent even though the monthly outlay for a rent or mortgage can be similar
- Availability of land was referenced, with a view that there was more land to the east of London than in other directions. There was an observation that there are a lack of sites coming forward, however, which is driving up house prices
- The relative affordability of TGSE was acknowledged by several attendees, with many feeling that it is a key driver of housing demand in the area. Some did recognise that incomes have failed to keep pace with house prices, with a suggestion that this is driven by the types of jobs available in the area, and indeed some felt that house prices in the area were unaffordable
- Important to acknowledge the complex relationship between the earnings of residents and the earnings of people working in the area, while the future effect of factors such as university debts could also impact upon affordability

- Question regarding the impact of Right to Buy and Starter Homes on housing affordability. Short-term change in affordability was also noted, with some attendees stating that affordability improved as house prices fell following the recession. However, this may have worsened recently due to a shortage of supply and increased difficulty in obtaining mortgages
- Some felt that the area could be expected to have higher house prices, given the proximity to London, with a suggestion that further analysis of surrounding areas should be undertaken. Attendees felt that house prices are a clear indicator of the market reacting to demand that can't be satisfied
- Caution was expressed regarding dwelling numbers, and whether they were truly
  reflective of need. For example, it was questioned whether concealed housing could be
  translated into additional housing numbers, and it was felt that this should be
  determined by the severity of housing need. Aspirational housing was also felt as likely
  to form some of the forecasted housing numbers
- Query around how the final housing growth recommendation may take account of previous undersupply, although it was noted that the existing housing target was based on a relatively low growth outcome
- Important to consider whether overcrowded or concealed households are providing care for older family members, or are saving for a deposit. Does this generate a need for affordable housing or a market dwelling? Request for more specific definition of concealed families to clarify types of residents included
- Observed that the rate of development is constrained by a number of factors, including land supply, environmental constraints, build costs, inflation and land prices. Build rates can be affected by high levels of unimplemented permissions, and some suggested that planning approvals should be analysed as a market signal
- The number of unimplemented consents was raised as a major issue which is contributing to comparatively slow build out rates in TGSE, although it was explained that in many cases developers only have an option on land, with a need for land to be sold at the right price to enable development to proceed. It was suggested that developers are keen to bring sites forward, as market conditions have improved since the recession. In more popular areas, deliverability is greater, although some landowners often aspire to increase their return or renegotiate costs once planning consent is obtained
- General agreement that an adjustment in response to market signals was appropriate, although some felt that the proportionate uplift was relatively small. However, some felt that an upward adjustment was not appropriate, as it is unrealistic to expect younger households to form and enter the housing market as they have in the past
- Some held a view that peoples' expectations have increased over time, beyond the type of housing that can reasonably be afforded, due to the apparent availability of housing before the recession. Some observed that people are increasingly accepting smaller household due to its relative affordability, however, reaching a conclusion that spare

rooms aren't required, for example. People can be willing to 'sacrifice' something to purchase a home

- Suggestion that areas such as Thurrock have high alternative land values, particularly for employment uses close to the M25. This impacts upon the deliverability of housing, given that there tends to be competition with employment uses for brownfield sites, although some developers cited viability issues in Thurrock due to comparatively low house prices
- Observation that a worsening across a wider geographical area will require an improvement across this area, in response to a core underlying market problem
- Viability and a lack of market demand were cited as reasons for the comparatively low rate of development in TGSE
- Concern about a growing disparity between the promotion of home ownership through national policy and the preferences of households, with some people happy to rent provided that it is affordable to do so. People are often getting mortgages later in life, and working longer to pay it off
- Observation that the Buy to Let market is growing across TGSE, which often includes properties which were previously bought through Right to Buy. Some felt that this was driving house price growth

## Affordable Housing Need

- Potential impact of welfare reforms highlighted and discussed at length, with view that while this will reform policy, it will not suppress demand. Acknowledgement that there remains considerable uncertainty around the future impact of welfare reforms, which will reduce the amount of money available in the affordable housing sector
- Universal credit could impact upon need for affordable housing, although suggested that this could be footloose and subsequently met across a wider geography. Changes to Housing Benefit are also likely to impact upon the need for affordable housing in TGSE
- Expectation that there will be significant supply pressures in future, due to factors such as Right to Buy, and this will be sustained unless there is a fundamental change in supply. Some RPs are likely to have a concentration of newer stock due to loss of older stock through Right to Buy
- Important to consider intermediate options including low cost market housing, although some felt that this would not address acute housing need issues which can only be met through social housing. Basildon was perceived to have an oversupply of shared ownership products, for example
- Important to recognise that waiting list represents a point in time, and query was raised regarding the exclusion of those not classified in priority need. Some also felt that the waiting list could incorporate some aspiration, and others questioned whether all concealed households should be included

- Suggestion that there has been an increase in the need for temporary accommodation and homelessness requests, and this will require consideration through policy response
- Relationship with London highlighted, with some London Boroughs utilising affordable housing stock in TGSE to meet needs
- Viability of affordable housing provision a recurring issue for developers, with a need to consider viability thresholds on schemes where a significant affordability component is required. This is often a negotiable element of developments, with some feeling that this defeats the object of trying to ensure sufficient affordable housing. Developers felt that a flexible approach was required, by considering a range of different affordable products particularly on rural sites
- Concern about clearing the backlog whilst meeting newly arising need, given scale of need suggested by assessment. Noted that GLA assume that backlog is cleared over a ten year period, rather than five years, whilst it was also highlighted that it will be important to understand the breakdown of need by type of product, ie social rent, affordable rent etc
- Expectation that future development of affordable housing will be impacted by rent cap, while receipts from Right to Buy are unlikely to cover the cost of replacement. The provision of affordable housing is also impacted by other factors, including land values and development viability, while Registered Providers are also impacted by the living wage which increases core costs
- Query regarding the realism of a household spending 30% of their income on rent, although generally felt that this was appropriate
- Anticipation that private rented sector will continue to play an important role in meeting affordable housing needs, although the extent to which Starter Homes can contribute towards meeting needs was questioned due to issues with securing deposits
- Suggestion that housing renewal programmes and regeneration could reduce the availability of low cost housing
- Discussion regarding the cost of additional affordable housing, with suggestion that additional pressure could be generated for schools, hospitals and other services. Agreement that a mix of housing in terms of tenure and size is the best way forward

## Specific Housing Needs and Type of Housing

 Importance of providing specialist accommodation for older people was highlighted, given that this can potentially release housing for younger generations. Smaller accommodation was deemed most suitable for elderly people looking to downsize, given that this housing is also often cheaper to run. Concern about the supply of suitable housing for the older population currently, however, which is resulting in a reluctance from older people to downsize. Acknowledgement of various new concepts in older persons accommodation, such as Bourneville Care Village which provides integrated housing, health and social care provision

- Impact of older people on housing market observed, with older people likely to have paid off their mortgage and therefore reluctant to leave their homes. Is there an incentive to downsize, particularly if older people are continuing to work? Some examples of older people downsizing to release equity for children to buy homes. Impact of personal and social connections with 'family home' recognised
- Concern about over-reliance on residential care for older persons, although noted that Essex County Council want to promote more care homes. Suggestion that provision of residential care is driven by private sector
- Suggestion that there is an increased need for larger homes, which will grow if higher skilled jobs with higher incomes are created. This could reduce the need for affordable housing
- Increased interest in self-build and custom build housing, although it is difficult to progress through the planning system without policy support. Concern about affordability of this option
- Expectation that fewer flats will be developed in future, despite sizeable growth in this type of housing since 2001
- Concern that there is an absence of choice in the existing dwelling stock in areas where new jobs are being created, and there will be a need to accommodate demand from particular employment groups through the provision of family housing
- Important to take account of aspirational housing, including housing for higher earners. Suggested that mixed tenure provision is essential
- Households often aspire to upsize to larger properties, which are not being built, and this can limit the number of smaller homes becoming available. There are also often limitations on the number of small properties or bungalows available to enable people to downsize

## Miscellaneous

- Important to recognise that issues relating to the future supply of housing in London are impacted by the existence of the Green Belt, with some suggesting that a future review may be required to qualitatively assess areas around London. Concerns were raised around the extent to which London will accommodate its own growth, with a failure to meet needs impacting upon surrounding authorities
- Question raised around the extent to which an assessment of need can be objective, as it was suggested that housing issues are influenced by wider policy which can impact upon future levels of need
- Direct questions were raised in relation to defined 'Housing Zones', including comments questioning the realism of a 2020 completion, build out rates of 50 dwellings per annum, and the impact of a shortage of young and/or apprentice bricklayers. Discussion was held around the extent to which Housing Zones contribute towards placemaking agendas, and both current and evolving spatial strategies

- Suggestion that the accessibility or non-accessibility of settlements should be considered in distributing housing growth, with observation that the SHMA does not consider the impact of growth on the existing infrastructure, which could already be at capacity. It was noted that these factors fall outside of the scope of the SHMA
- Variance in the distribution of dwelling output figures was observed, with Thurrock having the greatest growth due to its proximity to London. It was recognised that all areas will face growth pressures in the future, however, and this is reflected in authorities planning for additional housing through respective Local Plans
- Importance of producing consistent sub-regional evidence was raised
- Developers observed that the greatest demand for housing exists in Zones 3 6 of the London Zonal Fare System
- The extent to which transport infrastructure has increased the density of housing development was observed, with a suggestion that future improvements particularly from Crossrail will impact upon this. This could attract commuters towards areas outside TGSE
- Observation that the perception of Green Belt can present a challenge to development, even if land is not designated as Green Belt
- Southend-on-Sea has a constrained local authority boundary, with suggestion that this could require housing growth to be accommodated elsewhere in TGSE

## Appendix 2: Demographic Analysis of Thames Gateway South Essex

The PPG establishes the 'starting point' for assessing housing need, citing the 2012-based household projections as an estimate of overall housing need. This reflects its trend-based nature, given that the projections show how the number of households – and the underpinning population – may change if past demographic trends continue.

However, the PPG does suggest that the 'starting point' may require adjustment, based on factors affecting local demography and household formation rates. The analysis presented within this Appendix therefore provides an overview of the 'starting point' – the 2012-based household projections – and also considers a range of alternative scenarios for each of the authorities within TGSE to test the impacts of different demographic assumptions, in line with the PPG.

The analysis in this section is principally concerned with considering the following questions in response to the application of the PPG methodology:

- Does the 2012 SNPP look reasonable in the context of historic demographic evidence including the latest Office of National Statistics population estimates?
- Does the demographic evidence suggest that historic trends have been impacted by specific local issues?
- Are recent years reflective of longer term trends, or have they been influenced by other factors, including but not limited to the onset of the recession and subsequent sustained economic downturn?
- What role does the flow of people to and from London have in shaping the above trends and how may it change in the future?

## The 'Starting Point'

The 2012 sub-national household projections (SNHP) were released in February 2015, representing a full new official dataset published by DCLG. This forms the 'starting point' for assessing housing need, as set out in the PPG.

The 2012 SNHP is underpinned by the population growth projected under the 2012 sub-national population projections (SNPP), published by ONS. The 2012 SNPP dataset was released in May 2014, and provides the latest official benchmark for the analysis of population growth, taking full account of the 2011 Census.

The 2012 SNHP have been derived through the application of projected household representative rates – also referred to as headship rates – to a projection of the private household population, disaggregated by age, sex and relationship status.

Household growth is converted to dwellings for each authority through the application of individual vacancy rates, which – as confirmed by a recent Inspector's decision<sup>189</sup> – should be included within the objective assessment of need to reflect how stock is used. Vacancy rates are derived from the 2011 Census and set out in full in Appendix 4. No assumption has been made regarding the re-use of vacant property within the existing stock. This falls outside of the objective assessment of need, and requires separate consideration as policy is developed.

The following table shows the projected growth in population and households across TGSE and for each constituent authority. This shows change over the projection period used in this report, which runs from 2014 to 2037.

		Change 2	Average per year			
	Population	% Change	Households	% Change	Net Migration	Dwellings
Basildon	26,766	15.0%	14,900	19.9%	351	659
Castle Point	10,327	11.6%	6,368	17.1%	702	286
Rochford	10,560	12.5%	5,934	17.3%	474	265
Southend-on- Sea	30,394	17.2%	18,528	24.1%	841	848
Thurrock	37,511	23.1%	18,586	28.8%	396	828
TGSE	115,558	16.7%	64,316	22.4%	2,764	2,886

## Figure 2.1 2012 Population and Household Projections 2014 – 2037

Source: ONS, DCLG, Edge Analytics, 2015

Across TGSE, it is evident that the 2012-based projections expect considerable growth in both population and households. The scale of population growth (16.7%) compares to a projected growth of 14.6% for England as a whole, with the 22.4% growth in households in TGSE also higher than the projected growth rate of 21.3% for England.

At a headline level, this scale of growth suggests a sustained high need for housing, with the resultant dwelling requirement approximately 2,886 dwellings per annum over the full projection period. This level of need accommodates the natural growth of the population – births minus deaths – but also assumes a strong level of annual net migration, equivalent to almost 2,800 people per annum. As considered in more detail below, this reflects the historic role of the area as an attractor of people from other parts of the UK in particular.

Looking at the individual authorities, it is apparent that there is some notable variation regarding the projected scale and rate of growth suggested by the 2012 based projections from ONS. Focusing on population growth, Thurrock is projected to see the strongest growth, with a projected increase of 23.1%. In contrast, Castle Point is expected to grow by 11.2% under this dataset, with Rochford also projected to see a comparatively low level of population growth in the context of other areas.

<sup>&</sup>lt;sup>189</sup> Borough Council of Kings Lynn and West Norfolk v Secretary of State for Communities and Local Government, ELM Park Holdings Ltd (CO/914/2015)

Focusing on the projected role of migration, however, this suggests slight variation in the key drivers of growth. Castle Point and Southend-on-Sea are both projected to see the highest levels of net in-migration, with an inflow of 702 and 841 persons per annum respectively on average. In contrast, Thurrock – despite a high population growth projection – has the second lowest level of net migration, behind only Basildon. This suggests that there are other drivers of growth – primarily natural change – and this highlights the important differences between components of population change across TGSE.

The remaining elements of this Appendix consider these factors in more detail, drawing upon the detailed demographic analysis undertaken by Edge Analytics.

## Assessing the Historic Demographic Evidence

## **Understanding Longer-Term Population Change**

Between successive Censuses, population estimation is necessary, with the ONS releasing annual estimates of population counts for each authority. These mid-year population estimates (MYEs) are derived by applying 'components of population change' (i.e. counts of births and deaths and estimates of internal and international migration) to the previous year's MYE.

Figure 2.2 shows the historical population change for the TGSE authorities as a whole between 1991 and 2014 using the latest ONS published statistics. This shows that TGSE experienced consistent population growth between 1991 and 2014, with an overall growth of 13.2% or approximately 81,240 people. There does not appear to be a significant impact both prior to or following the recession in TGSE.



## Figure 2.2 TGSE mid-year population estimates, 1991-2014

Source: Edge Analytics, 2015 (from ONS mid-year population estimates)

Focusing on change in each local authority, the charts below show how MYEs have changed in each of the local authorities since 1991.



Figure 2.3 TGSE authorities mid-year population estimates, 1991-2014

Source: Edge Analytics, 2015 (from ONS mid-year population estimates)

Over this longer-term period, the charts show that the highest population growth was recorded in Thurrock, with an increase of 26.9% – or around 34,600 people – over the period from 1991 to 2014.

By contrast, the lowest increase was seen in Castle Point, with the population growing by just 2.3% from 1991 to 2014, equivalent to 2,017 people. In the other authorities, the level of population growth over the same period of time was more closely aligned, at approximately 10%.

Basildon, Rochford and Thurrock have all seen a relatively consistent trajectory of population growth over the longer-term period shown, with this particularly true of Thurrock. It is of note that the rate of population growth in Thurrock and Basildon does not appear to have been impacted either prior to or since the recession.

Rochford saw limited population growth through the early 1990s, with the population then increasing at a comparatively high rate up to the recession. Following the onset of the recession, the authority saw its rate of population growth slow quite notably. The last year's estimate, however, shows a return to stronger levels of growth, with this considered in more detail later in the section.

Basildon, whilst also experiencing a relatively stable population growth through much of the 1990s, saw a more modest trajectory of growth up to around 2011. Since 2011, however, the authority, according to the ONS MYE datasets, has experienced a higher rate of population growth than has been seen previously in the historical period examined.

According to the ONS data, both Castle Point and Southend-on-Sea experienced a small population decrease between 1991 and 2001, which then reversed to population increase after 2001. The level of population change in Castle Point remained fairly modest; however, the population change in Southend-on-Sea was more substantial, changing from 0.5% population decline between 1991 and 2001 to an increase of 8.7% in the next ten years up to 2011. The historical demographic evidence in Southend-on-Sea is discussed further in a separate section below.

As with Rochford, there is evidence in the population estimates for Castle Point that the onset of the recession represented a change in the previous trend of growth. The latest MYEs since 2011, however, suggest a return to the previous trajectory of growth evident prior to the recession.

## **Considering the Components of Population Change**

The historic profile of population growth for each authority shown in Figure 2.3 is underpinned by the different components of change related to migration and natural change factors (births and deaths).

This section considers the historical interplay between these factors in further detail, focusing on the more recent historical period since 2001. The charts included at Figure 2.4 show how the components have changed over this period in each of the authorities.

In considering the charts, population change is shown annually as being made up of the balance between internal migration (net flow resulting from moves to and from other parts of the UK) and international migration (net impact of immigration and emigration to and from the authority) and natural change (the net effect of births minus deaths).

It is important to note that the charts also show a fourth component labelled unattributable change. Following the 2011 Census, the 2002–2010 MYEs were 'rebased' to align with the 2011 MYE, and to ensure the correct transition of the age profile of the population over the 2001–2011 decade.

ONS did not explicitly assign the identified adjustment to any of the components of change. Instead, they presented it as a stand-alone 'unattributable population change' (UPC) component, suggesting they were not able to accurately identify the source of the 2001-2011 mis-estimation. This is therefore displayed separately on each of the charts in Figure 2.4.



Figure 2.4 Components of change, mid-year population estimates, 2001-2014

It is apparent that the effect of each of the components of change on the overall population growth over this historic period varies to a significant extent between the TGSE local authorities.

In Basildon, natural change has consistently represented the main driver of the population growth. The impact of the net internal and net international migration varies over time, with the net internal migration having had increasingly positive effect since 2010/11. With the exception of 2007/08, it is important to note that this component had represented a negative factor in Basildon, with the more recent trends therefore appearing to represent a departure from a longer-term picture that was evident prior to and following the recession. International migration is not shown to represent a significant contributor to population growth in the authority, although the last year's MYE does show a comparatively strong net flow in the context of the historic picture. The population estimates in Basildon were subject to slight positive adjustment due to the under-count over the 2001-2011 decade by the ONS, but this represents a comparatively small level of correction in the context of the growth seen.

The net internal migration component maintains the largest positive impact on population change in Castle Point. In the period preceding the recession, there was variation in the annual scale of growth, with levels in 2002/03 comparatively high in the context of the following three years. The lowest level was seen in 2010/11 which did follow a general downwards trend following the recession. The last three years, however, have seen a return to the stronger levels of growth seen prior to 2008/09. In addition, since 2009/10, the net international migration component has changed from having a small negative impact to having a small positive impact on Castle Point's population. The natural change component has not historically represented a significant contributor to population change, but it has been relatively consistent in contributing to lowering the population growth in the area, with deaths exceeding births in all years from 2001-2014, except in 2005/6 and 2010/11. The UPC adjustment has a negative impact on population growth, suggesting there was an over-count of Castle Point's population between 2001 and 2011.

As with Castle Point, the key driver of population growth in Rochford has been the net internal migration component. However, after a consistently positive impact in the first part of the period (2001/02 – 2007/08) – essentially up to the recession – the level of net internal migration fluctuated considerably in the following five years. It is, however, estimated as having returned to its pre-recession level in 2013/14. In comparison, the effect of net international migration and natural change on Rochford's population was limited throughout the 2001/02-2013/14 period. Similarly, the UPC adjustment had a small positive impact, indicating a minor under-count of the population between the 2001 and 2011 Censuses.

According to the ONS MYE, the impact of individual components of change on Southend-on-Sea's population varied considerably over the 2001/02-2013/14 period. The negative effect of natural change at the beginning of the time period reversed to maintain a small but consistently positive impact from 2006/07 onwards. Net internal migration became the major driver of population growth from 2005/06 to 2010/11, with this trend pre-dating the onset of the recession. This component has formed a relatively consistent contributor to population growth over this period with some level of variability over more recent years. After a substantial reduction in 2011/12 and 2012/13, it increased again in 2013/14 to a level which was approximate to the previous highest level in 2007/08. Net international migration had a relatively modest impact on population growth in the area, fluctuating between net inflow and outflow throughout the whole of the 2001/02-2013/14 period. Southend-on-Sea's population was subject to a very substantial upward adjustment due to UPC. Demographic evidence in Southend-on-Sea is analysed in more detail in the following sub-section to consider this aspect in more detail.

Thurrock experienced similar levels of natural change over the 2001/02-2013/14 period to Basildon. Again, this is the key driver of the area's population growth. Both net internal and net international migration had varied but largely positive impact on Thurrock's population; however, to a lesser extent than natural change. In the years prior to the onset of the recession, the authority saw a slightly negative internal migration change, although there is little evidence of the recession having a significant impact on the components of growth within the authority. There was a small negative UPC adjustment applied as a way of correcting the minor overcount of population in Thurrock during the 2001-2011 decade.

## Scrutiny of Historical Demographic Evidence in Southend-on-Sea

The chart in Figure 2.4 illustrated that Southend-on-Sea's population was subject to a significant upward adjustment as a result of the 2011 Census count. The scale of this adjustment – reflected in the UPC assigned to historical population estimates – suggests that there may have been a population undercount in the 2001 Census. This is, however, difficult to verify. This has important implications when interpreting the range of scenarios presented in this report.

In an attempt to further understand the source of such an adjustment, historical demographic evidence from 1991 onwards is considered.

The original pre-2001 MYE suggested significant population increase over the 1991-2001 decade. However, following the release of the 2001 Census results, these estimates were revised downwards, to record a small population decrease over the 1991-2001 decade (Figure 2.5).





For the period 2001-2011 a small decline in Southend-on-Sea's population was estimated by the MYE to 2004, increasing thereafter (Figure 2.6).



Southend-on-Sea, post-2001 population estimates

Figure 2.6

However, revisions to the MYE that followed the release of the 2011 Census statistics resulted in a very significant upward adjustment to the population estimates, which in 2011 suggested a population level similar to the one preceding the post-2001 Census revisions to the MYE (Figure 2.7).



Figure 2.7 Southend-on-Sea, pre- and post-2011 population estimates

Extrapolating Southend-on-Sea's population estimates between 1991 and 2011 produces a picture that is reasonably consistent with the 1991-2001 trend in GP registrations in the area (Figure 2.8). This also seems to support the argument that there may have been an issue with the 2001 Census count in Southend-on-Sea. Given the difficulty in accurately verifying the source of such a significant adjustment, it is challenging to define the most appropriate use of the historic evidence in Southend-on-Sea. The implications of these uncertainties are considered in the context of the appropriateness of the 2012 SNPP, later in this Appendix.



## Figure 2.8 Southend-on-Sea, pre- and post-2011 population estimates and GP registrations

In September 2015, the ONS published a separate research report outlining an approach for providing reasonable indications of the likely causes of discrepancies, by component, between mid-year estimates for 2011, rolled forward from 2001, and Census based population estimates for 2011<sup>190</sup>. The report is accompanied by an Excel based toolkit providing an analysis for each authority identifying the scale of mis-estimation by gender and age and identified likely contributing factors. The ONS are clear to set out that the aim of the research is not to precisely quantify the contribution of any sub optimal estimation of each component to the overall discrepancy.

Looking specifically at Southend-on-Sea in the following charts, the toolkit illustrates that the ONS under-estimated the change in the population for both men and women aged 30 - 44. This also led to an under-estimation of children aged 10 - 19. For men, the analysis showed that the ONS also under-estimated those aged 50 - 59.

<sup>&</sup>lt;sup>190</sup> 'Further understanding of the causes of discrepancies between rolled forward and census based local authority midyear population estimates for 2011' ONS (17<sup>th</sup> September 2015)





Source: ONS, 2015

Figure 2.10 Southend-on-Sea, Females, 2011 – ONS Toolkit



Source; ONS, 2015

Looking first at the male population, the ONS suggests the strongest flow contributors relate to a probable discrepancy associated with migration factors, internal migration and emigration flows. For a limited number of age groups, those aged 45 - 49 (and 85+ albeit this is identified as within the 95% confidence internal) the ONS identifies that the discrepancy could be the result of rolling forward from the 2001 Census taking into account Patient Register data (a similar approach to that considered above).

For the female population again internal migration and international immigration and emigration flows are considered as potentially contributing to the scale of under-estimation. Issues

associated with rolling forward from 2001 and with the 2001 Census are identified for a limited number of groups including those aged 40-44 and 45 – 49 as well as those aged 10-14. For those aged 65-69 this factor is attributed with a potential over-estimate, however, the scale of mis-estimation for this age group is considered to be within the 95% confidence interval based on the 2011 Census.

Overall, as outlined in the analysis undertaken by Edge Analytics, there is not a single specific contributing factor to the mis-estimation of the population change between the Census years in Southend-on-Sea. It is apparent that the ONS do not consider this to be solely associated with issues associated with rolling forward from 2001 and the 2001 Census count. The under-estimation of the population resulting from migration factors is also considered an important factor.

## **Considering the 2012 Sub-National Population Projections**

The 2012 SNPP form an important benchmark and starting point for understanding housing needs. Within this sub-section, further consideration is given to the extent to which the projections represent a reasonable projection of future demographic derived need. This is considered in the context of the demographic history upon which they are based and the longer term picture.

The charts presented at Figure 2.11 benchmark the 2012 SNPP trajectory of population growth against a series of simple forward extrapolations of historic population growth, based on various historic periods. Whilst this represents a relatively crude indicator of the alignment of growth, it provides a useful initial indication of the extent to which the population growth projected under the 2012 SNPP compares to longer term trends.



Figure 2.11 Extrapolation of Historic Population Growth Trends – TGSE authorities

For Basildon, it is apparent that the 2012 SNPP aligns most closely with the 5 year trend upon which the demographic inputs are primarily based. This trend is slightly higher than the 10 and 30 year trends, which show a consistent level of growth. This suggests a comparatively strong alignment with short and longer term growth trajectories. The same is also true of Thurrock, with the chart clearly showing the 2012 SNPP aligns with a consistent picture of growth over both the short and longer-term trends. The 20 year extrapolated trend is lower for Basildon, reflecting the slowdown in growth in the early 1990s identified earlier in the section.

Source: ONS, 2015, Turley, 2015

For Rochford and Southend-on-Sea, the 2012 SNPP projection of growth aligns most strongly with the 10 year trend. In the case of Rochford, this is a slightly higher level of projected growth than the 5 year trend would suggest. This shorter-term trend is, however, more closely aligned with the longer-term 30 year trajectory. For Southend-on-Sea, by contrast, the projected growth in the 2012 SNPP falls slightly below the 5 year trend, but notably above the longer term 20 and 30 year trends.

Castle Point stands out with regards to the fact that the 2012 SNPP projection does not directly align with any of the historic trend based extrapolations. The projected growth under the 2012 SNPP sits notably above the historic trends for population growth in the authority.

The following table compares the underlying components of change in the 2012 SNPP dataset with a five year and ten year picture at a TGSE level. This adds further context when considering the alignment of the projections with historic trends.

TGSE	Histo	Projected		
Component of Change	5-year average (2007/08–2011/12)	10-year average (2002/03–2011/12)	2012-based SNPP average (2012/13–2036/37)	
Natural Change	2,644	2,125	2,282	
Net Internal Migration	1,223	1,080	2,706	
Net International Migration	359	332	-24	
Unattributable Population Change*	747	895	-	
Annual Population Change	4,963	4,410	4,964	
Annual Population Change (%)	0.75%	0.69%	0.73%	

#### Figure 2.12 TGSE, 2012-based SNPP components of change

\* UPC is only applicable to the years 2001/02 - 2010/11

Source: ONS, Edge Analytics, 2015

Overall, the analysis of the underlying components of population change shows that the average annual impact of natural change in the 2012 SNPP is relatively consistent with the five-year (2007/08-2011/12) and ten-year (2002/03-2011/12) averages.

The impact of net internal migration on the TGSE local authorities is projected to be substantially higher in the 2012-based SNPP than either of the five- and ten-year averages would suggest. It is estimated to account for 55% (+2,706 per year) of change to 2037, compared to 25% (+1,223 per year) in the last five years and 24% (+1,080 per year) in the last ten years.

In contrast, the impact of international migration is much reduced. Regarding UPC, it is important to note that ONS has not included it in its calculations of future trends that underpin the 2012-based SNPP<sup>191</sup>. Even taking account of this consideration of the UPC component, the reduction in the projected input of international migration is notable in the context of the historic

<sup>&</sup>lt;sup>191</sup> '2012-based Subnational Population Projections for England. Report on Unattributable Population Change' (ONS, 20 January 2014)

trends. This will to some degree be due to net international migration assumptions at the national level within the 2012 SNPP. In this context, it is important to note that for England, the 2012-based SNPP assumes an average annual impact of international migration at +151,552 per year over the forecast period, compared to the five- and ten-year averages of +204,288 and +213,612 per year respectively.

In the TGSE area, the 2012-based SNPP suggests the net international migration contributes towards -0.5% of population growth (-24 per year), compared to 7% (+ 359 per year) and 8% (+332 per year) in the last five and ten years.

In considering the 2012 SNPP, it is also of note that the impact of the components of change also varies between individual local authorities. This is shown in Figure 2.13.

	2012-2037 Population Change							
Area Name	Natural Change	Net Internal Migration	Net International Migration	Population Change	Population Change %			
Thurrock	30,891	6,479	3,242	40,612	25.5%			
Southend-on-Sea	12,016	24,006	-3,365	32,657	18.7%			
Basildon	20,498	7,996	315	28,809	16.3%			
Rochford	-300	11,958	-512	11,146	13.3%			
Castle Point	-6,055	17,205	-272	10,877	12.3%			
TGSE	57,050	67,643	-592	124,101	18.2%			
England	5,044,248	-160,801	3,788,801	8,672,248	16.2%			

Figure 2.13 TGSE local authorities, 2012-based SNPP components of change summary

Rochford and Castle Point are estimated to experience a net loss due to natural change over the 2012-2037 projection period, with the remaining areas suggesting considerable positive impact on population growth.

The effect of net internal migration is projected to be positive for all areas, with Southend-on-Sea and Castle Point having the highest net impact and Thurrock and Basildon the lowest.

The net impact of population growth due to international migration varies between the areas. Southend-on-Sea, Rochford and Castle Point are estimated to experience a net loss due to international migration, whereas Thurrock and Basildon are expected to see a net gain.

The following table considers the extent to which the SNPP 2012 is reflective of historical trends in each of the TGSE authorities.

# Figure 2.14 Contrasting historic trends and 2012 SNPP projections for each of the TGSE authorities

Basildon	Histo	Projected	
Component of Change	5-year average (2007/08–2011/12)	10-year average (2002/03–2011/12)	2012-based SNPP average (2012/13–2036/37)
Natural Change	925	820	820
Net Internal Migration	-4	-163	320
Net International Migration	55	117	13
Unattributable Population Change*	135	201	-
Annual Population Change	1,111	972	1,152
Annual Population Change (%)	0.65%	0.58%	0.65%

\* UPC is only applicable to the years 2001/02 - 2010/11

Castle Point	Histo	Projected	
Component of Change	5-year average (2007/08–2011/12)	10-year average (2002/03–2011/12)	2012-based SNPP average (2012/13–2036/37)
Natural Change	-73	-69	-242
Net Internal Migration	301	384	688
Net International Migration	1	-49	-11
Unattributable Population Change*	-138	-128	-
Annual Population Change	89	136	435
Annual Population Change (%)	0.10%	0.16%	0.49%

\* UPC is only applicable to the years 2001/02 - 2010/11

Rochford	Histo	Projected	
Component of Change	5-year average (2007/08–2011/12)	10-year average (2002/03–2011/12)	2012-based SNPP average (2012/13–2036/37)
Natural Change	69	54	-12
Net Internal Migration	256	436	478
Net International Migration	-16	-46	-20
Unattributable Population Change*	9	17	-
Annual Population Change	320	453	446
Annual Population Change (%)	0.39%	0.57%	0.53%

\* UPC is only applicable to the years 2001/02 - 2010/11

Southend-on-Sea	Histo	Projected	
Component of Change	5-year average (2007/08–2011/12)	10-year average (2002/03–2011/12)	2012-based SNPP average (2012/13–2036/37)
Natural Change	445	215	481
Net Internal Migration	671	375	960
Net International Migration	-18	-101	-135
Unattributable Population Change*	789	884	-
Annual Population Change	1,885	1,369	1,306
Annual Population Change (%)	1.14%	0.85%	0.75%

\* UPC is only applicable to the years 2001/02 - 2010/11

Thurrock	Histo	Projected	
Component of Change	5-year average (2007/08–2011/12)	10-year average (2002/03–2011/12)	2012-based SNPP average (2012/13–2036/37)
Natural Change	1,277	1,105	1,236
Net Internal Migration	-1	49	259
Net International Migration	337	411	130
Unattributable Population Change*	-50	-79	-
Annual Population Change	1,559	1,481	1,624
Annual Population Change (%)	1.03%	1.02%	1.02%

\* UPC is only applicable to the years 2001/02 - 2010/11

## Source: Edge Analytics, 2015

The average annual impact of natural change suggested in the 2012-based SNPP for Basildon, Southend-on-Sea and Thurrock is fairly consistent with the historical trends. In Basildon, the 2012-based SNPP average natural change impact is in line with the 10 year historical trend and not too dissimilar to the 5 year trend. In Southend-on-Sea the 2012-based SNPP suggests the average annual impact of natural change is higher than either the 5 or 10 year trend but relatively close to the former. The 2012-based SNPP assumes the level of population growth through natural change in Thurrock to be fairly consistent with both the 5 and 10 year historical trends.

In contrast, in Castle Point and Rochford the 2012-based SNPP suggests the impact of natural change is notably different to the historical trends. In Castle Point the 2012-based SNPP implies a higher negative impact of natural change than either of the historical trends. In Rochford, the 2012-based SNPP assumes a small negative impact of natural change compared with the relatively small but positive effect suggested by the 5 and 10 year trends.

In all areas, the average annual impact of internal migration is higher in the 2012-based SNPP than the historical trends would suggest. In Basildon, the 2012-based SNPP assumes a considerable positive impact of net internal migration over the 25-year period, despite the fact

that historically the area has experienced net out-migration (although this appears to have reduced in the 5 year trend). In Castle Point, Rochford and Thurrock, the 2012-based SNPP suggests a substantial positive impact of net internal migration, even though the historical trends suggest a reduction in the impact of net internal migration. In Southend-on-Sea, the increase in the positive impact of the net internal migration evident in historical 5 and 10 year trends is continued in the 2012-based SNPP.

In line with historical evidence, the 2012-based SNPP suggests a limited impact of net international migration on the authorities' population growth. In Basildon and Thurrock, the 2012-based SNPP assumes lower positive impact of net international migration than the 5 and 10 year historical trends. In Castle Point and Rochford, the 2012-based SNPP suggests a small negative impact of net international migration, sitting between the levels implied by the 5 and 10 year trends. In Southend-on-Sea, the 2012-based SNPP assumes higher negative impact of net international migration then either of the historical trends.

Looking at the cumulative impact of the components of change (including the UPC in the historical trends) on the percentage annual population change shows that the overall population growth in Thurrock and Basildon suggested in the 2012-based SNPP is similar to the 5 and 10 year historical trends. In Rochford, the 2012-based SNPP assumes annual population change more closely aligned with the 10 year historical trend, which is higher than the 5 year trend. In Castle Point, the 2012-based SNPP implies notably higher annual population growth than both of the historical trends would suggest. In Southend-on-Sea, the 2012-based SNPP assumes annual population growth lower than in the historical trends, but not too dissimilar to the 10 year trend. However, when UPC is discounted from the historical trends, the annual population growth assumed in the 2012-based SNPP is significantly higher than that which was recorded historically for Southend-on-Sea, for both 5 and particularly 10 year trends. This needs to be considered in the context of the analysis of factors affecting UPC in Southend-on-Sea, as considered by Edge Analytics and identified in the ONS toolkit.

Historic and projected components of change are illustrated in the following charts.



Figure 2.15 Historic and Projected Components of Change – 2012 SNPP



Source: ONS, 2015

Focusing specifically on migration, Figure 2.16 provides a summary of the different migration assumptions underpinning the 2012 SNPP dataset – expanding on the analysis presented above – showing projected internal and international migration flows to and from each of the TGSE authorities, compared to historical trends which are also provided for context.



Figure 2.16 Historic and Projected Migration Flows – 2012 SNPP

Source: ONS, 2015

For all authorities, it is notable that the 2012 SNPP projects an increase in both internal in and out migration flows over the projection periods.

In Basildon and Thurrock, the two flows essentially balance each other out, reflecting the historic picture relatively closely. In Thurrock in particular, the number of both inward and outward internal migrants is expected to surpass levels seen earlier in the past decade.

Internal in-migration flows in the 2012 SNPP in Castle Point show a projected strong growth which exceeds that seen historically in the borough, both before and after the recession. The net impact of this is relatively significant, and evidently represents a departure from the historic trends, with the out-migration flow projected to remain relatively stable.

A similar position is seen in Southend-on-Sea, with the projections showing a continuation of an increasing growth of internal in-migrants as seen over recent years. The projections suggest that levels of in and out flows of internal migrants will exceed those seen historically, albeit unlike Castle Point the trends are more aligned meaning the net impact is less significant.

Rochford's projections appear to be relatively aligned with the historic position. With regards to the in-flows, the projections show a recovery to levels which were seen prior to the recession. Outflows are projected to increase, albeit not to a significantly higher level than that seen historically.

The charts shown in Figure 2.16 do not include the latest ONS MYE, which were considered earlier in the section. These provide a useful check to consider the extent to which the ONS estimation of population growth has varied from the projections over the two years since their base date.

The following table compares the 2012 SNPP projected population growth – including components of change – for the TGSE area compared to the 2013 and 2014 MYE datasets.

	2012 SNPP <sup>192</sup>	MYE
2012 MYE	682,932	682,932
Natural Change	2,300	2,430
Net Internal Migration	1,500	2,195
Net International Migration	100	88
Other Change	0	-155
2013 MYE	686,800	687,490
Natural Change	2,600	2,658
Net Internal Migration	1,800	3,914
Net International Migration	100	1,316
Other Change	0	27

## Figure 2.17 TGSE 2012 SNPP and Mid-Year Population Estimates

Source: ONS, 2015

<sup>&</sup>lt;sup>192</sup> Rounded figures presented

It is apparent that the latest ONS 2014 MYE suggest that the population of TGSE has grown to a greater extent than projected in the 2012 SNPP. Indeed, the 2014 MYE is almost 4,000 higher over the two year period of the projections.

Examining the components, it is evident that the most significant contributing factor is a higher estimated level of net internal migration into the area, with this consistent over both years but in particular between 2013 and 2014. This is important in the context of the analysis of the changing relationship with London and the return – in three out of the five authorities (Basildon, Southend-on-Sea and Thurrock) – to levels of movements of people from Greater London seen prior to the recession. These flows are considerably higher than those seen in 2011/12 at the base date of the 2012-based SNPP.

The difference between the ONS MYE and the 2012-based projection is also driven by a higher net international migration flow, particularly in the last year. Indeed, in England as a whole, international migration over these two years has been notably higher than that projected within the 2012 SNPP. While the projections expected a total net inflow of around 302,900 international migrants between 2012 and 2014, ONS estimate that the actual flow has been around 418,000 migrants. This is likely to have an impact on this component across the country, including TGSE.

These factors form an important context for considering the extent to which the 2012 SNPP may potentially serve to underestimate projected growth in the area, particularly in the context of the relationship with Greater London. This is considered further in the development of variant projections of population growth later in this appendix.

Projected and estimated population change between 2012 and 2014 in each authority is summarised in the following table, in a comparable format to that shown in Figure 2.18.

	Basildon		Castle Point Rochford		Southend-on-Sea		Thurrock			
	2012 SNPP	MYE	2012 SNPP	MYE	2012 SNPP	MYE	2012 SNPP	MYE	2012 SNPP	MYE
2012 MYE	176,474	176,474	88,218	88,218	83,869	83,869	174,838	174,838	159,533	159,533
Natural Change	900	933	-200	-161	0	-36	400	481	1,200	1,213
Net Internal Migration	0	916	400	493	200	259	800	565	100	-38
Net International Migration	100	49	100	11	0	2	-200	-99	100	125
Other Change	_	-10	_	9	_	-183	_	13	_	16
2013 MYE	177,400	178,362	88,400	88,570	84,100	83,911	175,900	175,798	161,000	160,849
Natural Change	900	940	-100	-123	0	86	500	543	1,300	1,212
Net Internal Migration	100	834	500	350	200	697	800	1,300	200	733
Net International Migration	100	364	100	112	0	77	-200	295	100	468
Other Change	_	21	_	-2	_	5	_	-5	_	8
2014 MYE	178,500	180,521	88,800	88,907	84,500	84,776	177,100	177,931	162,600	163,270

## Figure 2.18 TGSE individual authorities 2012 SNPP and Mid-Year Population Estimates

Source: ONS, 2015
All of the authorities have a higher estimated population in 2014 than the 2012 SNPP suggested. This is particularly true of Basildon, which makes up approximately half of the difference across the TGSE area (2,021 persons). Southend-on-Sea and Thurrock also see comparatively large differences of 831 and 670 persons respectively. Castle Point and Rochford show a much closer alignment.

It is evident that the higher estimated growth in people relating to internal migration is particularly clear in Basildon over both of the years, with Rochford and Thurrock also showing a divergence in the last year of data. The opposite position is evidenced in Castle Point where the estimates suggest a lower level of growth associated with this component.

The international migration component is more varied with regards to its impacts across the authorities. This could be linked to the impact of UPC, although this cannot be definitively stated. Only Thurrock and Castle Point saw their population overestimated by the ONS between Censuses, and this was only to a relatively small extent. Also, given that the notably sharp increase in net international migration is generally only evident in 2013/14 – rather than both years presented – it is challenging to understand whether the higher levels of international migration in 2013/14 are a result of the ONS' previous mis-estimation or simply the result of a year when notably high numbers of international migrants came to England.

# Alternative Demographic Projections of Need

There is no single definitive view on the likely level of growth expected in the TGSE area. A mix of economic, demographic and national/local policy issues ultimately determines the speed and scale of change. For local planning purposes, it is necessary to evaluate a range of growth alternatives to establish the most 'appropriate' basis for determining future housing provision.

Edge Analytics has used POPGROUP technology to develop a range of trend growth scenarios for the TGSE area.

In line with the PPG, the most recent population and household projection models have been considered. A total of six trend-based scenarios have been developed and benchmarked against the ONS 2012-based SNPP (**SNPP-2012**).

Each scenario has been evaluated using the latest 2012-based household headship rates from DCLG (**HH-12**) and an alternative set of headship rates that 'return' the headship rates for males and females aged 20-39 (for Basildon – males and females aged 20-34) to their 2001 level between 2014 and 2024, following the official trend thereafter (**HH-12 R**). This provides a 'range' of household and dwelling growth options for consideration. All scenarios have been produced with a 2014 base year and a horizon of 2037.

In the following sections, the alternative trend-based scenarios are described and the broad assumptions specified. For further detail on the data inputs and assumptions, refer to Appendix 4.

#### **Past Growth Variant Projections**

A five year historical period is a typical time-frame from which migration 'trend' assumptions are derived (this is consistent with the ONS official methodology). However, given the unprecedented economic change that has occurred since 2008, it is important to give due consideration to an extended historical time period for assumption derivation. In addition, it has

been important to consider the alternative trend scenario formulated by the GLA as a direct contrast to the **SNPP-2012** outcome.

Three alternative trend scenarios have been developed, based upon the latest demographic evidence:

- **PG-5yr**: Internal and international migration assumptions are based on the last 5 years of historical evidence (2009/10 to 2013/14).
- **PG-10yr**: internal and international migration assumptions are based on the last 10 years of historical evidence (2004/05 to 2013/14).
- **Natural Change**: internal and international migration flows are set to zero.

The trend scenarios listed above assume that the 'unattributable population component' (UPC) for the 2001–2011 historical period is associated with the mis-estimation of international migration. Given the uncertainty associated with the UPC amendment, for the 2001–2011 historical period a sensitivity test on its importance in determining future growth assumptions is appropriate. Two further trend scenarios have been developed that exclude the UPC from the international migration assumptions:

- **PG-5Yr-X**: Internal and international migration assumptions are based on the last 5 years of historical evidence (2009/10 to 2013/14), excluding UPC.
- **PG-10Yr-X**: internal and international migration assumptions are based on the last 10 years of historical evidence (2004/05 to 2013/14), excluding UPC.

A sixth trend scenario, **SNPP-2012-LDN**, considers the growth impact of the migration uplift suggested by the GLA 2013 **Central** scenario, over-and-above what is implied by the 2012-based SNPP. The rationale and explanation of the methodology used to develop this scenario is set out in a separate sub-section below.

# Impact of changing migration patterns in London – Alternative Scenario

#### Historical Relationship with London

The analysis of HMA geographies in the SHMA has highlighted that Greater London plays a significant influencing role on the housing market in TGSE, and also impacts the demographic dynamics of each local authority. In particular, London provides a source of new migrants that drive population growth outside of the Greater London boundary.

The historical migration relationship between the London Boroughs and the TGSE local authorities is presented in Figure 2.19.



Figure 2.19 Internal migration flows between London and the TGSE area

In-migration from Greater London to TGSE has been consistently higher than the corresponding out-migration to Greater London from these areas. Between 2001/02–2013/14, inflow and outflow averaged 9,983 and 4,253 respectively, with this resulting in an average net impact of 5,730 per annum.

However, in the last five years (2009/10–2013/14), the net migration balance has reduced from its thirteen-year average of 5,730 to a five-year average of approximately 4,900. With the out-migration from the TGSE local authorities to Greater London remaining fairly stable, the reduction in the average net migration growth has been due to the fall in migration levels (in-migration) from Greater London. This suggests that fewer people moved to TGSE from Greater London.

Since 2007/08, there has been a considerable volatility in the London migration effect. The flow of people from London to TGSE fell significantly after 2007/08, with this likely to represent an impact of the onset of recession. Since 2011, however, in-migration has progressively increased to reach a similar level to the pre-2008/09 values, with an associated uplift in the net migration growth in the TGSE local authorities. This means that the picture in 2013/14 shows a strong alignment with that seen prior to the recession, but notably different to that seen in 2011/12 (the base date for the 2012 SNPP/ SNHP datasets).

The graphs below show the individual internal migration flow relationships between London and each of the TGSE authorities, drawing upon migration data published under the Patient Register Data Service (PRDS) by ONS.



Figure 2.20 Internal migration flows between London and Basildon

Figure 2.21 Internal migration flows between London and Castle Point



Figure 2.22 Internal migration flows between London and Rochford





Figure 2.23 Internal migration flows between London and Southend-on-Sea

Figure 2.24 Internal migration flows between London and Thurrock



All five TGSE local authorities have experienced in-migration from London Boroughs which is consistently higher than the respective out-migration to London Boroughs over the 2001/02-2013/14 period. In line with to the TGSE as a whole, there has been significant variation in inmigration to the individual local authorities, with the out-migration remaining relatively stable over time.

Thurrock experienced the highest net inflow of migrants from Greater London in that period, with an average annual inflow of 2,183 migrants. The lowest net inflow was estimated in Rochford, with an average of 522 migrants per year over the 2001/02-2013/14 period.

Basildon, Thurrock and Southend-on-Sea show a historic relationship which aligns with the TGSE picture described previously. Whilst the inflow of people from London fell notably from 2007/08, the rate of flow had returned to levels seen prior to the recession by 2013/14.

In contrast, Castle Point and Rochford – whilst also seeing a notable reduction in the scale of people moving from London into these authorities after 2007-08 – have not seen levels recover back to those seen prior to the recession with in-flows remaining consistently low even in the more recent years of data.

#### Developing a variant scenario to recognise migration changes associated with London

The GLA projections provide an alternative perspective on population change in the London Boroughs. However, they provide only partial evidence on how the lower population growth in London would manifest itself as higher in-migration to areas outside London and to the TGSE local authorities, in particular.

Following collaborative discussions with the GLA, Edge Analytics has been provided with additional model output to enable an assessment of the effect of higher out-migration flows from London. The GLA has provided detailed information on the internal migration flows that underpin its **Central** scenario. This scenario assumes that the out-migration rates from London would increase by 5% after 2017 and in-migration rates would reduce by 3%.

Within the GLA model, internal migration flows are modelled using age- and sex-specific migration probabilities. For the migration exchange between London Boroughs and areas outside London, the model adopts a three-zone system: South East, East and Rest-of-UK. It does not explicitly model the flows between each London Borough and each individual local authority outside of Greater London.

For the **Central** scenario, the net migration profile for Greater London suggests a step-change in 2018 in the net population gain that is experienced by all non-London English local authority areas; rising from +58,000 annual net gain in 2017 to over +78,000 net gain the following year. The higher net migration continues on an upward trend but rising more slowly to 2030, flattening thereafter.



#### Figure 2.25 Net Migration with Greater London – GLA Central Scenario

For the South East and East macro regions, the step-change is replicated, albeit on a smaller scale. Net migration to the South East rises from approximately +36,000 in 2017, to +44,000 in 2018, an uplift of +8,000. Net migration to the East rises from approximately +27,000 in 2017, to +32,000 in 2018, an uplift of +5,000. The trend in net migration after 2018 appears to be flatter in the East than the South East, an important consideration for the analysis presented here, with all TGSE areas falling within the East region.

Whilst the GLA scenarios suggest higher net out-migration from London Boroughs compared to recent trends, the latest 2012-based SNPP from ONS suggest something similar with regard to overall net in-migration to the TGSE local authorities. To evaluate the likely extent of the GLA's

**Central** scenario net migration assumptions upon those implied by the 2012-based SNPP, a process of data matching and estimation has been required.

The datasets that have been used to complete the estimation and matching, include the following:

- Historical migration flows (2006/7-2012/13) to/from London to each local authority district drawn from the Patient Register Database System (PRDS).
- Historical migration components of change from the ONS mid-year population estimates.
- GLA 2013 round Central scenario, migration flows from London to macro regions.
- 2012-based SNPP projection, migration components of change.

The steps that have been taken to align the migration information from the GLA **Central** and **SNPP-2012** scenarios are as follows:

- Using historical PRDS in-migration and out-migration data, the GLA macro region migration flows have been disaggregated to local authority area totals.
- Using the same historical PRDS information, the proportion of each local authority's 2012-based SNPP in-migration and out-migration that is associated with Greater London has been derived.
- Comparing the GLA **Central** and the 2012-based SNPP estimates of in-migration and out-migration from/to Greater London, provides a ratio with which the **SNPP-2012** assumptions can be altered to match those implied by the GLA **Central** alternative.
- Within the estimation procedure, control totals have been provided by the macro-region migration statistics of the GLA's **Central** scenario and by the Greater London net migration totals suggested by the 2012-based SNPP.
- The net migration assumptions from the GLA and 2012-based SNPP are consistent in 2013 for each local authority area, deviating thereafter.
- All estimation has taken account of the age-sex profiles associated with the respective migration statistics.

The results of the estimation process for the South East and East macro areas are summarised below. Whilst the GLA **Central** scenario models a step-change in the net migration effect with Greater London, the 2012-based SNPP suggests a gradual increase over the forecast period. The 2012-based SNPP assumptions on net migration gain from Greater London are estimated to reach and then exceed the GLA **Central** assumption, at a later point in the forecast period for the South East than the East.





Figure 2.27 Net Migration with Greater London, East – GLA Central scenario and SNPP-2012



For the TGSE local authority areas, which are located within the East region, the GLA **Central** scenario would suggest higher growth than **SNPP-2012** if a 15-year forecast horizon was considered. However, there would be less of a difference over a 25-year forecast period as the 2012-based SNPP migration assumptions continue to rise, whilst the GLA **Central** migration assumptions remain at a relatively constant level.

The comparison of migration assumptions from the GLA **Central** and the 2012-based SNPP has been used to formulate this additional **SNPP-2012-LDN** scenario which considers the growth impact of the migration uplift suggested by the GLA **Central** scenarios, over-and-above what is implied by the 2012-based SNPP.

Since this analysis was conducted as part of the Phase 7 EPOA project, GLA has released an updated 2014 round of projections, with the detailed outputs made available at the end of July 2015.

GLA produced two trend-based scenarios which are alternatives to the **Central** scenario used in the Edge Analytics analysis:

- Short-term scenario which uses migration history mid-2009 to mid-2013
- **Long-term** scenario which uses migration history from mid-2001 to mid-2013.

The chart below compares the average annual growth through natural change and net migration implied by these new scenarios with the assumptions underpinning the 2013 round **Central** scenario and the 2012-based SNPP.



Figure 2.28 Annual growth assumption – GLA scenarios vs SNPP-2012

The new **Long-term** scenario produces a very similar net migration impact to the 2013 round **Central** alternative. This suggests it would have limited impact on the **SNPP-2012-LDN** outcomes if used instead of the **Central** scenario.

Two additional scenarios that vary the **SNPP-2012** international migration assumptions to follow the high and low international migration variants from ONS have also been considered. However, given the relatively low impact these variant international migration assumptions had on the scenario outcomes, the two scenarios have been excluded from the analysis presented in this report.

# Scenario Outcomes

For each of the TGSE local authorities, the demographic projection outcomes are summarised in the form of a chart and an accompanying tables of statistics.

The chart illustrates the 2001-2037 trajectory of population change resulting from each scenario.

The tables summarise the change in population and household numbers that result from each scenario for the period 2014-2037. The first table considers the household and dwelling growth outcomes that would result from the application of the 2012-based household formation assumptions (HH-12) and the second presents the outcomes resulting from the application of

the modified set of the 2012-based household formation assumptions that for the younger age groups return the headship rates to their 2001 values (HH-12 R).

In each table, the scenarios are ranked according to the estimated level of population change over the forecast period. Each table illustrates the average annual net migration associated with the population change, plus the expected average annual dwelling growth.

#### Basildon

The **SNPP-2012** scenario records a 15.0% growth in Basildon's population to 2037 and an estimated dwelling requirement of 659 per year, assuming that household formation rates follow the trend in the 2012-based household model.

The migration uplift associated with the GLA's **Central** scenario (**SNPP-2012-LDN**) suggests higher population growth at 15.6% to 2037, with an associated annual dwelling requirement of 721 per year.

The **PG-10yr** scenario suggests population growth that is lower than the **SNPP-2012** at 14.5% whereas the **PG-5yr** scenario records the highest population growth at 15.9%. The resulting dwelling growth estimates are 693 and 731 per year respectively.

The 'X' scenarios suggest the lowest rate of population growth of the PG scenarios as they exclude the UPC adjustment that was allocated to the population to account for undercount between the 2001 and 2011 Censuses.

The **Natural Change** scenario, excluding the impact of migration in its forecast, suggests population growth of 8.4% to 2037, with an associated annual dwelling requirement of 538 per year.

The application of the alternative headship rates assumptions (HH-12 R) results in a higher average annual dwelling requirement ranging from 581 to 774 per year.



Figure 2.29 Basildon Demographic Projections, Population Growth, 2001 – 2037

Figure 2.30	Basildon	Demographic	Projections	Outcomes	(HH-12), 20	14 – 2037
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	Change 2014 - 2037				Average per year	
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-5yr	28,671	15.9%	16,519	21.9%	361	731
SNPP-2012-LDN	28,125	15.6%	16,300	21.6%	410	721
PG-5yr-X	27,748	15.4%	15,623	20.7%	331	691
SNPP-2012	26,766	15.0%	14,900	19.9%	351	659
PG-10yr	26,155	14.5%	15,672	20.7%	283	693
PG-10yr-X	23,594	13.1%	14,095	18.7%	193	624
Natural Change	15,077	8.4%	12,155	16.1%	0	538

Figure 2.31	Basildon Demo	araphic Pro	jections Outcomes	(HH-12 R),	2014 - 2037
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	Change 2014 - 2037				Average per year	
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-5yr	28,671	15.9%	17,495	23.2%	361	774
SNPP-2012-LDN	28,125	15.6%	17,245	22.8%	410	763
PG-5yr-X	27,748	15.4%	16,602	22.0%	331	735
SNPP-2012	26,766	15.0%	15,840	21.2%	351	701
PG-10yr	26,155	14.5%	16,643	22.0%	283	736
PG-10yr-X	23,594	13.1%	15,072	19.9%	193	667
Natural Change	15,077	8.4%	13,140	17.4%	0	581

## Castle Point

The **SNPP-2012** scenario records an 11.6% growth in Castle Point's population to 2037 and an estimated dwelling requirement of 286 per year, assuming that household formation rates follow the trend in the 2012-based household model (**HH-12**).

The migration uplift associated with the GLA's **Central** scenario (**SNPP-2012-LDN**) suggests slightly higher population growth at 11.8% to 2037, with an associated annual dwelling requirement of 296 per year. This scenario records the highest growth outcome of all scenarios.

The **PG-10yr** and **PG-5yr** scenarios suggest population growth rates that are lower than the **SNPP-2012**, reflecting longer-term net migration assumptions in the **SNPP-2012** that are higher than recent historical levels.

The '**X**' scenarios imply higher rates of population growth than the equivalent scenarios that include UPC in the historical data; a reflection of the adjustment that was allocated to the population to account for an overcount between the 2001 and 2011 Censuses.

The **Natural Change** scenario, excluding the impact of migration in its forecast, suggests population decline of 3.8% to 2037, with an annual dwelling requirement of just 27 per year.

The application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement ranging from 56 to 326 per year.



Figure 2.32 Castle Point Demographic Projections, Population Growth, 2001 – 2037

Figure 2.33	Castle Point Demographic Project	tions Outcomes (HH-12),	, 2014 – 2037
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	Change 2014 - 2037				Average per year	
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
SNPP-2012-LDN	10,493	11.8%	6,574	17.8%	709	296
SNPP-2012	10,327	11.6%	6,368	17.1%	702	286
PG-10yr-X	8,784	9.9%	5,762	15.6%	626	259
PG-10yr	7,597	8.5%	5,731	15.5%	560	258
PG-5yr-X	6,926	7.8%	4,893	13.2%	535	220
PG-5yr	6,033	6.8%	4,871	13.2%	490	219
Natural Change	-3,364	-3.8%	609	1.6%	0	27

Figure 2.34	Castle Point Demographic	Projections Outcomes	(HH-12 R), 2014 – 2037
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	Change 2014 - 2037				Average per year	
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
SNPP-2012-LDN	10,493	11.8%	7,241	19.6%	709	326
SNPP-2012	10,327	11.6%	7,031	19.0%	702	316
PG-10yr-X	8,784	9.9%	6,441	17.4%	626	290
PG-10yr	7,597	8.5%	6,372	17.3%	560	286
PG-5yr-X	6,926	7.8%	5,558	15.0%	535	250
PG-5yr	6,033	6.8%	5,509	14.9%	490	248
Natural Change	-3,364	-3.8%	1,249	3.4%	0	56

## Rochford

The **SNPP-2012** scenario records a 12.5% growth in Rochford's population to 2037 and an estimated dwelling requirement of 265 per year, assuming that household formation rates follow the trend in the 2012-based household model.

The migration uplift associated with the GLA's **Central** scenario (**SNPP-2012-LDN**) suggests slightly higher population growth at 12.9% to 2037, with an associated annual dwelling requirement of 284 per year.

The **PG-10yr** scenarios suggest population growth rates that are higher than the **PG-5yr** alternatives, reflecting the low levels of migration experienced in the latest years of the historical period.

The 'X' scenarios imply lower rates of population growth than the equivalent scenarios that include UPC in the historical data; a reflection of the adjustment that was allocated to the population to account for an undercount between the 2001 and 2011 Censuses.

The **Natural Change** scenario, excluding the impact of migration in its forecast, suggests population decline of 0.2% to 2037, with an annual dwelling requirement of 93 per year.

The application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 125 to 332 per year.



Figure 2.35 Rochford Demographic Projections, Population Growth, 2001 – 2037

Figure 2.36	Rochford Demographic Projections Outcomes	(HH-12),	, 2014 – 203	37
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	Change 2014 - 2037				Average per year	
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-10yr	11,293	13.3%	6,761	19.7%	500	302
SNPP-2012-LDN	10,895	12.9%	6,359	18.5%	489	284
PG-10yr-X	10,786	12.7%	6,114	17.8%	479	273
SNPP-2012	10,560	12.5%	5,934	17.3%	474	265
PG-5yr	8,381	9.9%	5,158	15.0%	376	230
PG-5yr-X	8,157	9.6%	4,803	14.0%	365	214
Natural Change	-132	-0.2%	2,093	6.1%	0	93

# Figure 2.37 Rochford Demographic Projections Outcomes (HH-12 R), 2014 – 2037

	Change 2014 - 2037				Average per year	
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-10yr	11,293	13.3%	7,451	21.8%	500	332
SNPP-2012-LDN	10,895	12.9%	6,990	20.4%	489	312
PG-10yr-X	10,786	12.7%	6,824	19.9%	479	304
SNPP-2012	10,560	12.5%	6,566	19.1%	474	293
PG-5yr	8,381	9.9%	5,800	16.9%	376	259
PG-5yr-X	8,157	9.6%	5,461	15.9%	365	244
Natural Change	-132	-0.2%	2,809	8.2%	0	125

### Southend-on-Sea

The **SNPP-2012** scenario records a 17.2% growth in Southend-on-Sea's population to 2037 and an estimated dwelling requirement of 848 per year, assuming that household formation rates follow the trend in the 2012-based household model.

The migration uplift associated with the GLA's **Central** scenario (**SNPP-2012-LDN**) suggests slightly higher population growth at 17.8% to 2037, with an associated annual dwelling requirement of 895 per year.

The **PG-10yr** and **PG-5yr** scenarios suggest population growth rates that are higher than the **SNPP-2012**, reflecting the effect of the historical UPC adjustment upon the calibrated future migration assumptions. **PG-10yr** records the highest growth outcome of all scenarios.

The 'X' scenarios imply lower rates of population growth than the equivalent scenarios that include UPC in the historical data; a reflection of the large adjustment that was allocated to the population to account for discrepancies in the mid-year population estimates and the 2001 and 2011 Census counts.

The **Natural Change** scenario, excluding the impact of migration in its forecast, suggests population growth of 4.8% to 2037, with an annual dwelling requirement of 385 per year.

The application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 438 to 1,058 per year.



Figure 2.38 Southend-on-Sea Demographic Projections, Population Growth, 2001 – 2037

Figure 2.39	Southend-on-Sea	<b>Demographic Projection</b>	ons Outcomes (HH-1)	2), 2014 – 2037
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	Change 2014 - 2037				Average per year	
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-10yr	36,463	20.5%	21,828	28.4%	1044	999
PG-5yr	33,718	19.0%	20,140	26.2%	993	922
SNPP-2012-LDN	31,638	17.8%	19,562	25.4%	895	895
SNPP-2012	30,394	17.2%	18,528	24.1%	841	848
PG-5yr-X	27,304	15.3%	16,824	21.9%	755	770
PG-10yr-X	25,010	14.1%	16,265	21.2%	631	744
Natural Change	8,567	4.8%	8,413	10.9%	0	385

Figure 2.40 Southend-on-Sea Demographic Projections Outcomes (HH-12 R), 2014 – 2037

	Change 2014 - 2037				Average per year	
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-10yr	36,463	20.5%	23,115	30.1%	1,044	1,058
PG-5yr	33,718	19.0%	21,372	27.8%	993	978
SNPP-2012-LDN	31,638	17.8%	20,816	27.1%	895	953
SNPP-2012	30,394	17.2%	19,769	25.8%	841	905
PG-5yr-X	27,304	15.3%	18,032	23.4%	755	825
PG-10yr-X	25,010	14.1%	17,496	22.7%	631	801
Natural Change	8,567	4.8%	9,569	12.4%	0	438

## Thurrock

The **SNPP-2012** scenario records a 23.1% growth in Thurrock's population to 2037 and an estimated dwelling requirement of 828 per year, assuming that household formation rates follow the trend in the 2012-based household model.

The migration uplift associated with the GLA's **Central** scenario (**SNPP-2012-LDN**) suggests higher population growth at 23.9% to 2037, with an associated annual dwelling requirement of 874 per year. This scenario records the highest growth outcome of all scenarios.

The **PG-10yr** scenarios suggest population growth rates that are higher than the **PG-5yr** alternatives, reflecting the lower levels of migration experienced in the latest years of the historical period.

The 'X' scenarios imply slightly higher rates of population growth than the equivalent scenarios that include UPC in the historical data; a reflection of the adjustment that was allocated to the population to account for an overcount between the 2001 and 2011 Censuses.

The **Natural Change** scenario, excluding the impact of migration in its forecast, suggests population growth of 13.1% to 2037, with an annual dwelling requirement of 629 per year.

The application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 677 to 919 per year.



Figure 2.41 Thurrock Demographic Projections, Population Growth, 2001 – 2037

Figure 2.42	Thurrock Demographic Projections Outcomes (HH-12), 2014 – 203
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	Change 2014 - 2037				Average per year	
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
SNPP-2012-LDN	38,943	23.9%	19,624	30.4%	459	874
SNPP-2012	37,511	23.1%	18,586	28.8%	396	828
PG-10yr-X	31,776	19.5%	15,953	24.7%	110	710
PG-5yr-X	31,197	19.1%	15,521	24.1%	130	691
PG-10yr	30,930	18.9%	15,296	23.7%	41	681
PG-5yr	30,841	18.9%	15,173	23.5%	93	676
Natural Change	21,408	13.1%	14,123	21.9%	0	629

	Change 2014 - 2037				Average per year	
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
SNPP-2012-LDN	38,943	23.9%	20,635	32.1%	459	919
SNPP-2012	37,511	23.1%	19,594	30.5%	396	873
PG-10yr-X	31,776	19.5%	16,987	26.4%	110	757
PG-5yr-X	31,197	19.1%	16,514	25.7%	130	735
PG-10yr	30,930	18.9%	16,351	25.4%	41	728
PG-5yr	30,841	18.9%	16,172	25.1%	93	720
Natural Change	21,408	13.1%	15,192	23.6%	0	677

# TGSE

Modelling outputs for TGSE as a whole are presented below.



Figure 2.44 TGSE Demographic Projections, Population Growth, 2001 – 2037

Figure 2.45	TGSE Demograph	hic Projections	Outcomes	(HH-12), 2014	- 2037
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	Change 2014 - 2037				Average per year	
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
SNPP-2012-LDN	120,094	17.3%	68,418	23.7%	2,961	3,070
SNPP-2012	115,558	16.7%	64,317	22.4%	2,764	2,886
PG-10yr	112,437	16.2%	65,289	22.6%	2,428	2,933
PG-5yr	107,644	15.5%	61,861	21.5%	2,312	2,777
PG-5yr-X	101,331	14.6%	57,664	20.0%	2,116	2,587
PG-10yr-X	99,950	14.4%	58,188	20.2%	2,039	2,610
Natural Change	41,556	6.0%	37,393	13.0%	0	1,673

	Change 2014 - 2037				Average per year	
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
SNPP-2012-LDN	120,094	17.3%	72,925	25.3%	2,961	3,272
SNPP-2012	115,558	16.7%	68,800	23.9%	2,764	3,087
PG-10yr	112,437	16.2%	69,933	24.3%	2,428	3,141
PG-5yr	107,644	15.5%	66,347	23.0%	2,312	2,979
PG-5yr-X	101,331	14.6%	62,167	21.6%	2,116	2,789
PG-10yr-X	99,950	14.4%	62,820	21.8%	2,039	2,818
Natural Change	41,556	6.0%	41,959	14.6%	0	1,877

# Figure 2.46 TGSE Demographic Projections Outcomes (HH-12 R), 2014 – 2037

# Implications of the Demographic Evidence

This Appendix has presented the 2012-based household and population projections, analysing this dataset within the context of historic trends. This allows an understanding of the extent to which the projections reflect historic evidence – highlighting any instances where they have been influenced by specific local issues – and the extent to which London has shaped trends has also been considered.

This section draws together this analysis, for both TGSE as a whole and each local authority.

# TGSE

The analysis of the historical demographic evidence in TGSE shows that there has been a relative consistency in the impact of natural change on population growth in each of the areas over the last five (2009/10-2013/14) and ten (2004/05-2013/14) years. There has been much more variation between areas in the impact of net internal migration when comparing the last five and ten years of historical evidence. Historically, international migration has had a relatively small impact upon population growth in the TGSE area.

Population estimates were subject to relatively modest revisions following the release of the 2011 Census results in all TGSE local authorities, except Southend-on-Sea. In this area, the ONS has identified a major upward adjustment through UPC. This has important implications when interpreting the range of scenarios presented in this report. The treatment of UPC in Southend-on-Sea inflates the effect of international migration.

The rate of population growth in the TGSE area over the last five and ten years is relatively similar to that projected in the SNPP-2012. This hides considerable differences in the underlying components of change, especially internal migration. The 2012-based SNPP assumptions on internal migration are significantly higher than the last five and ten year averages would suggest. In contrast, international migration is a very small component of the 2012-based SNPP growth projection.

Looking at the historical demographic influence of TGSE's proximity to London shows a consistently high net inflow from Greater London to the TGSE local authorities, with the out-migration to London remaining relatively stable and the in-migration to London fluctuating over

time. Most significantly, the TGSE in-migration from London fell from 2007/08 but has recovered in the latest years of evidence.

In the TGSE areas, the GLA projection suggests out-migration assumptions that are consistently higher than those suggested by the 2012-based SNPP, with the exception of Castle Point, which more closely follows the 'East' region trend.

# Local Authority Summaries

Whilst it is important to understand trends across TGSE as a whole – given that this is the housing market area across which needs are assessed in this study – such an approach can hide considerable differences between individual local authorities. The analysis below therefore summarises key points emerging from the analysis for each authority in TGSE.

### Basildon

- Basildon has seen a relatively consistent trajectory of population growth since the late 1990s, with natural change a key driver of growth with births exceeding deaths although the impact of internal and international migration varies over time.
- Internal migration has generally had a negative impact upon population change in Basildon, although more recent trends since 2010 – in consistently showing a net inflow of migrants to the borough – suggest a departure from this longer term trend.
   International migration is not a significant contributor of population growth in Basildon, but the 2013/14 data suggests a comparatively strong net inflow compared to previous evidence.
- The MYE for Basildon were subject to a slight positive adjustment due to the undercount between Census years, but this represents a comparatively small level of correction in the context of the growth seen.
- The historic relationship between Basildon and Greater London closely reflects the TGSE profile as a whole, with the inflow of people from London falling notably from 2007/08 at the onset of the recession before recovering to pre-recession levels by 2013/14.
- The **SNPP-2012** aligns most closely with an extrapolation of a (pre 2012) five year population trend, slightly exceeding the longer term 10 year and 30 year trends.
- Natural change is projected to play a significant role in driving population growth, with this closely aligning with the historic trend. The projected level of net in-migration surpasses both five and ten year historic trends, however, although the projected scale of net international migration is slightly underestimated within this historic context.
- The population of Basildon in 2014 was around 2,000 higher than projected under the **SNPP-2012**, primarily due to higher levels of internal migration than expected.
- Based on the alternative scenarios modelled by Edge Analytics, a 5 year Past Growth trend (PG-5yr) would exceed the level of population growth projected under the SNPP-2012, with a 10 year trend (PG-10yr) suggesting a slightly lower level of growth. The SNPP-London scenario (SNPP-2012-LDN) uplifts the level of population growth from the 2012 SNPP, but continues to fall slightly below the 5 year trend.

Whilst the **SNPP-2012** growth outcome aligns quite closely with pre 2012 historical population change, the latest demographic evidence suggests accelerated growth in Basildon. For this reason the demographic starting point for analysis should be based on the **SNPP-2012** with consideration also given to the <u>range</u> of outcomes suggested by the **SNPP-2012-LDN** and **PG-5yr** scenarios reflecting the implications of more recent levels of strong growth.

## Castle Point

- Castle Point has seen the smallest population growth of the TGSE authorities, with a sustained population decline through the 1990s before a subsequent increase up to the recession, which slowed population growth in the borough. Since 2011, however, there has been a return to the pre-recession growth trajectory.
- Net internal migration is the main driver of population growth in Castle Point, while natural change with deaths outnumbering births has been a negative contributor to population change.
- There was an over-count of the population between 2001 and 2011, resulting in a negative UPC adjustment in Castle Point.
- The flow of migration from London to Castle Point fell following the recession, and has not recovered to pre-recession levels.
- The **SNPP-2012** does not appear to align with any extrapolation of (pre 2012) population growth trends, with the projected growth exceeding historic trends in the borough.
- The scale of growth projected under the **SNPP-2012** is underpinned by a high inflow of internal migrants, with an assumed inflow that is around double that seen annually over the past five and ten years. This is projected to offset the negative impact of natural change, with deaths expected to outnumber births to a greater extent than seen over the past five or ten years.
- There is notable alignment between the **SNPP-2012** and recently mid-year population estimates, suggesting that population growth over the past two years is in line with that projected for Castle Point.
- Based on the modelling undertaken by Edge Analytics, continuation of a 10 year past growth trend (PG-10yr) would exceed a 5 year trend (PG-5yr), although both of these trajectories are surpassed by the SNPP-2012 and the uplift suggested by the London migration effect (SNPP-2012-LDN).
- Whilst the **SNPP-2012** does present substantial departure from historical trends in growth through internal migration, it provides the most appropriate demographic starting point for analysis. This also recognises the potential identified impact of London migration upon growth in the area.

#### Rochford

• Rochford has seen sustained population growth since the mid-1990s, although the growth did slow slightly following the onset of the recession. This has been driven to a

significant degree by high levels of net internal migration, although this has fluctuated over the past five years before returning to pre-recession levels in 2013/14. Natural change and net international migration have had only a limited impact on population change in the district historically.

- The population was slightly undercounted between 2001 and 2011, resulting in a small positive UPC adjustment.
- The flow of migration from London to Rochford fell following the recession, and has not recovered to pre-recession levels.
- The **SNPP-2012** aligns most closely with an extrapolation of population growth over the past ten years.
- The population of Rochford in mid-2014 is relatively close to that projected by the **SNPP-2012**, although levels of migration in 2013/14 were notably higher than expected.
- Based on the demographic modelling undertaken by Edge Analytics, the **SNPP-2012** sits between a five year (**PG-5yr**) and ten year past growth (**PG-10yr**) trend.
- Given the distinctive shift in Rochford's migration profile following the recession and its subsequent recovery, it is appropriate to consider a range of demographic outcomes. The SNPP-2012 scenario represents an appropriate starting point for considering demographic needs but in the context of the historic evidence consideration should also be given to the PG-10yr scenario in considering demographic needs. This range of outcomes encompasses the effect of a higher London growth effect.

#### Southend-on-Sea

- Southend-on-Sea saw a small population decline between 1991 and 2001, before reverting to population growth from 2001. According to the ONS, this reflected a number of different drivers, with births beginning to outnumber deaths early in this period and net internal migration playing an increasingly important role in driving population growth.
- The population of Southend-on-Sea was subject to a very substantial upward UPC adjustment between 2001 and 2011, implying a potential undercount at the 2001 Census that is, however, difficult to verify.
- While the inflow of migrants from Greater London to Southend-on-Sea fell during the recession, this has recovered to pre-recession levels over more recent years.
- The **SNPP-2012** aligns most closely with an extrapolation of population growth over the (pre 2012) past ten years. Both the longer term 20 and 30 year trends, however, are notably exceeded by the **SNPP-2012**, with this projection underpinned by high levels of net internal migration and a continued positive natural change in the population. The latter is in line with historical trends over the past five and ten years, although the scale of net internal migration assumed exceeds these historical trends.
- The population of Southend-on-Sea in mid-2014 is slightly higher than projected under the **SNPP-2012**, with this largely attributable to higher than expected levels of internal

migration in 2013/14 and a net inflow of international migrants, rather than the projected net outflow.

With the UPC adjustment of such significance in Southend-on-Sea, the most appropriate use of the historical evidence is more difficult to define. Whilst a large proportion of the UPC adjustment may be due to Census count issues, an element is likely also to be associated with international migration. For this reason the **PG-10yr** and **PG-5yr** scenarios are likely to be an over-estimate of growth based upon uncertain historical evidence. It would seem reasonable that the **SNPP-2012** provides the most appropriate demographic starting point for this analysis.

### Thurrock

- Thurrock has seen sustained population growth since 1991, with the greatest proportionate growth of the TGSE authorities over this time. Over the past decade, this has been driven by natural change – with births exceeding deaths – while net internal and international migration has had varied but largely positive impacts on Thurrock's population.
- There was a small negative UPC adjustment applied to correct the minor over-count of population in Thurrock between 2001 and 2011.
- The net outflow from Thurrock to London has remained relatively steady, with the net inflow though falling following the recession increasing to surpass pre-recession levels in recent years.
- The scale of population growth implied by the **SNPP-2012** is relatively closely aligned with historic trends in Thurrock, with this underpinned to a significant degree by natural change. A net inflow of internal and international migrants is also projected, with the former assumed to exceed the levels seen historically over the past five and ten years. A slight fall in international migration is projected, however.
- The population of Thurrock in mid-2014 was higher than expected under **SNPP-2012**, largely due to higher than expected levels of both internal and international migration in 2013/14.
- The alternative PG-5yr and PG-10yr scenarios suggest a lower rate of population growth than the SNPP-2012. Natural change is a key driver of growth in each of these scenarios but the SNPP-2012 assumes a more substantial impact of migration over the forecast period. Given the likelihood of higher net in-migration in the future, the SNPP-2012 would appear to provide the most appropriate demographic starting point for analysis. This also recognises that the London effect suggests even higher migration impacts may be reflected in the future to the area.

# Appendix 3: Considering the Economic Evidence

# Introduction

Economic forecasts are one consideration in producing an informed assessment of housing need. They are important in estimating the number of homes required in an area to enable the economy's potential to be achieved.

The National Planning Policy Framework (NPPF) states that:

'To help achieve economic growth, local planning authorities should plan proactively to meet the development needs of business and support an economy fit for the 21st century'.

In informing the application of this in terms of housing, the Planning Practice Guidance (PPG) states that:

'Plan makers should make an assessment of the likely change in job numbers based on past trends and/or economic forecasts as appropriate and also having regard to the growth of the working age population in the housing market area'.

This Appendix considers the two up-to-date economic forecasts available for consideration in the Thames Gateway South Essex SHMA: Experian and East of England Forecasting Model (EEFM) produced by Oxford Economics.

Given the nature of forecasts, no two are the same. Different forecast producers use different assumptions and these can have important implications for housing need. This Appendix considers both the employment (jobs) outputs of the forecasts as well as the approaches taken to key assumptions relating to the modelling of labour force change. In order to understand the implications for housing need estimates, the Appendix includes analysis undertaken by Edge Analytics using the POPGROUP model. This has involved the modelling of variant employment-led projections using input labour force assumptions routinely applied by Edge Analytics in its modelling.

As part of this study, Experian was commissioned to prepare bespoke modelling outputs using its regional model. The outputs of this modelling, presented within this Appendix, provide further evidence as to the important relationship between forecast job growth and demographic inputs in the forecasts.

# **Overview of the Economic Forecast Models**

# Experian

Experian's UK Regional Planning Service produces economic forecasts for local authority areas as well as at regional and national level. These include forecast change in production (GDP and GVA); labour market (workplace and workforce jobs, economic activity) and demographics (population size by age group).

Historic population data is based on ONS mid-year estimates. For all variables other than jobs at the local level, the latest year of historic data is 2014. For local jobs data this is 2013. The most recent forecasts (June 2015) run to 2035.

Job growth estimates are arrived at through a dual approach:

- A top-down application of national and regional trends by sector, reflecting the sector profile locally; and
- A bottom-up approach informed by the available labour force incorporating economic activity rates and commuting ratios.

Recognising this methodological approach to the Experian model, Experian have provided bespoke modelling outputs to inform the TGSE SHMA.

In estimating jobs growth, Experian apply an iterative process in balancing top-down sector based performance (jobs demand) and bottom-up labour supply. Where there is an insufficient growth in the local labour force to fill this jobs demand – as a result of population change, economic activity rates, employment rates and reasonable change in in-commuting – the number of projected workforce jobs are constrained. In order to assess the impact of this constraint, Experian ran a version of their model which did not apply any such population constraint to the scale of job demand forecast.

In the case of the TGSE forecasts, this modelling revealed the difference between jobs demand and workforce jobs is greatest in 2015 where unfilled jobs reach 110 positions (i.e. the jobs forecasts are reduced by 110 as a result). For the remainder of the period, unfilled positions hover at around 40-50 jobs, indicating only a limited constraint on jobs growth by availability of labour supply. Experian's workforce jobs forecasts are therefore largely reflective of the full economic growth potential of the area.



Figure 3.1 Jobs Demand Versus Workforce Jobs, 2013-2031 (000s)

Source: Experian 2015

In addition to assessing the extent to which the jobs demand estimate was potentially constrained by input population estimates, a further scenario was run to assess the impact on the model of assuming a higher level of population growth.

As presented in Appendix 2 of the SHMA, Edge Analytics has developed a series of variant demographic projections. One of these scenarios assesses the extent to which population growth will vary based on the application of different migration assumptions relating to London (SNPP 2012-LDN, or SNPP London). For each of the authorities, this scenario suggested a higher level of population growth than implied through the 2012 SNPP which Experian consistently use in their baseline modelling.

Edge Analytics supplied the demographic data from this SNPP 2012-LDN scenario to Experian. Experian have subsequently run their economic forecast models with this higher population input. The results of this exercise are summarised below.

In terms of the overall population profile under this scenario, the population aged between 16 and 64 years is greater in each of the 5 local authorities than under the Experian baseline projections. The population aged 16+ is younger in each of the authorities. The population aged 65 and over is less in all authorities, bar Basildon where it is projected to be greater.

The difference in the size of the labour force between the baseline and scenario is made up of both the change in population and the change in activity rates (amongst both the existing population and the new population). The majority of extra residents enter the labour market with the remainder being economically inactive. This leads the model to adjust economic activity rates, based on the reaction between supply and demand of labour<sup>193</sup>.

The scenario projects only marginal increases in workforce jobs for each local authority. These increases are due to additional population requiring additional services such as retail, education and health and social care. The largest difference with the baseline projections is in Basildon, where an additional 170 jobs are projected as a result of services required by an additional 1,800 residents.

	Baseline	Scenario	Difference
Basildon	105.89	106.06	0.17
Castle Point	26.51	26.52	0.01
Rochford	30.27	30.29	0.02
Southend	87.59	87.70	0.10
Thurrock	83.80	83.89	0.09

# Table 3.1 Workforce Jobs in 2035 Under Baseline and Alternative Scenario (000s)

Source: Experian, 2015

<sup>&</sup>lt;sup>193</sup> There is an initial assumption made on participation rates across age bands over the forecast. From then on, Experian do not make direct assumptions about economic activity for each age band, rather the model responds to demand and supply of labour. 'Residents change their decision about whether to participate in the labour market in each period as they react to the tightening or loosening of the labour market. Therefore, differences in participation rates between the scenario and baseline are not due to different assumptions made on participation rates but because of how different population projections create different levels of demand and supply in the labour market'.

Commuting is assumed to change only marginally. The largest change is projected for Basildon which is forecast an additional 80 people commuting in to the borough for employment in 2035 in the alternative scenario compared to the baseline.

Unemployment and the unemployment rate is projected to rise in each location due to a greater increase in population than workforce jobs.

It is apparent from the additional modelling prepared by Experian that the forecasts used to consider the need for housing in this SHMA are not constrained to any significant degree by population inputs to the model. It is equally apparent that Experian's model enables variation in labour-force behaviour assumptions to respond to differing levels of population growth, with these not representing 'fixed' modelling assumptions.

### EEFM

EEFM is produced by Oxford Economics and was developed in 2007 to *'project economic, demographic and housing trends in a consistent fashion'* for local authorities in the East of England. It has since been rolled out to include coverage of additional local authorities outside of the former East of England region<sup>194</sup>.

The model relies heavily on published data as well as past modelling experience and local knowledge. As well as a baseline scenario, various additional scenarios are published. The 2014 EEFM is currently only available as a baseline scenario. Previous iterations have included 'lost decade & beyond', 'high migration' and 'variant occupancy' scenarios.

The latest year of historical data for population is 2013 and for employment is 2012. The forecasts run to 2031.

The forecasts are based on past observed trends and therefore reflect previous infrastructure and policy environments. Equally, in looking forward they are 'policy-off' and are therefore unconstrained by any future planning constraints which may prevent levels of demand being satisfied.

The concentration of each sector locally compared to regionally (its Location Quotient) and how this has changed over time is used as the basis to forecast how the sector may perform in the future. A number of labour market and demographic factors are used to apply to the sector forecast and estimate jobs and employment.

In effect the general approach taken by Experian and EEFM is broadly the same: combining top-down sector forecasts and local labour market data and assumptions. The detail in application varies with alternative labour-force behaviour adjustments an important consideration.

# Forecast Job Growth (Workforce Jobs)

Workforce jobs are the jobs available in a local area, including both employee jobs and selfemployed jobs. The SHMA considers housing need over the period from 2014 to 2037, and therefore it is important to understand forecast change in employment over this period. The modelling prepared by Edge Analytics is based to 2014, given that this is the latest known

<sup>&</sup>lt;sup>194</sup> Note: the 2014 Technical Report to accompany the 2014 forecast published in January 2015 is not yet available. The interpretation of the EEFM approach is based on the 2013 Technical Report.

population data available from ONS, and this therefore represents the starting point for the labour force demand approach to estimating housing need.

This requires an extrapolation of forecasts as follows:

- As Experian forecasts run only to 2035, the 2034/35 absolute level of job creation is assumed to be sustained to the end of the projection period in 2037; and
- EEFM forecasts run to 2031, and therefore the 2030/31 job creation is assumed to be sustained throughout the remainder of the projection period to 2037.

Forecast change in workforce jobs in TGSE over the period from 2014 to 2037 is presented in the following chart. It is important to note that the forecasting houses' respective analysis of historic data results in different starting points for the number of jobs in TGSE in 2014.



Figure 3.2 TGSE Workforce Jobs, 2014 – 2037

Source: Experian 2015; Oxford Economics 2014

Table 3.2 compares the two forecasts by district, presenting overall change, proportionate overall change and compound average annual change per annum. It is apparent that Experian's forecast suggests a higher overall level of proportionate growth in all districts in TGSE, except for Thurrock where EEFM forecast greater change.

	District	2014	2037	Total Change	% Change	% Change per annum
Experian	Basildon	93,653	107,074	13,420	14%	0.6%
	Castle Point	24,172	26,746	2,575	11%	0.4%
	Rochford	27,426	30,543	3,117	11%	0.5%
	Southend-on-Sea	74,799	88,843	14,044	19%	0.8%
	Thurrock	67,877	85,383	17,506	26%	1.0%
	TGSE	287,926	338,589	50,662	18%	0.7%
EEFM	Basildon	96,727	106,900	10,173	11%	0.4%
	Castle Point	29,415	29,608	193	1%	0.0%
	Rochford	29,371	31,284	1,913	7%	0.3%
	Southend-on-Sea	80,565	87,863	7,298	9%	0.4%
	Thurrock	70,830	93,965	23,135	33%	1.2%
	TGSE	306,909	349,620	42,711	14%	0.6%

### Table 3.2 Change in Workforce Jobs by District, 2014-2037 (000s)

Source: EEFM 2014; Experian 2015

# **Double jobbing**

The modelling and analysis presented above relates to 'workforce jobs'. This is a count of the total number of jobs in each authority, with no translation into full-time equivalent (FTE) or consideration of the extent to which people have more than one job. Often referred to as 'double jobbing', the latter refers to instances where individuals hold more than one job.

Within their forecasts, both Experian and EEFM provide estimates of workplace-based employment, which represents a people-based figure of the number of people working in an area. This inherently applies an assumption regarding the number of people taking more than one job, and both forecasts assume that an increased proportion of jobs will be taken by people with more than one job.

In understanding change over the forecast period, it is therefore important to understand forecast change in both total jobs and total workplace-based employment. This is presented in the following table, showing that both forecasting models inherently assume that change in workforce jobs can be supported through a smaller absolute level of growth in workforce.

		Change in Workforce Jobs 2014-2037	Change in Workplace- based Employment 2014-2037
Experian	Basildon	13,420	10,874
	Castle Point	2,575	1,601
	Rochford	3,117	2,141
	Southend-on-Sea	14,044	12,962
	Thurrock	17,506	15,558
	TGSE	50,662	43,136
EEFM	Basildon	10,173	9,466
	Castle Point	193	214
	Rochford	1,913	1,885
	Southend-on-Sea	7,298	7,224
	Thurrock	23,135	22,089
	TGSE	42,711	40,878

#### Table 3.3 Change in Workforce Jobs and Workplace-based Employment 2014-2037

Source: EEFM 2014; Experian 2015

The forecasts considered in this Appendix present outputs related to both workforce / total jobs as well as employed people counts. The latter essentially removes the double jobbing element, with the constraint in the model being employed people irrespective of whether they have more than one job<sup>195</sup>.

# Labour Market Participation

Modelling the relationship between population, the working age population, and the labour force involves the application of assumptions regarding:

- The extent to which people are active in the employment market (economic activity and unemployment); and
- Commuting relationships with different areas.

Each of the economic forecasting houses applies their own assumptions to these elements in deriving the outputs of their modelling. Approaches differ, however, and it is evident that

<sup>&</sup>lt;sup>195</sup> The EEFM technical report (2013) defines total workplace employment (jobs) as: 'the total number of employee jobs and self-employed jobs in an area. These can be taken by residents or commuters from outside. Note that this includes all full-and part-time jobs, so if someone has two part-time jobs, they are counted twice.' The technical report defines total workplace employment (people) as: 'the total number of people in employment in an area, including both residents and commuters. A person who has more than one job is only counted once, so total workplace employed people is smaller than total workplace employment'. The technical report identifies the rationale for deriving this figure: Because a model aiming to simulate housing demand needs to focus on people, we have to convert the total number of jobs in an area into numbers of employed people'. The note also confirms that: 'Individuals are assumed to hold only one full-time job each. Part-time jobs are assumed to account for 0.75 of a full-time job, and self-employed people are assume to account for 0.93 of a self-employed job.'

different assumptions can have significant implications. The following section compares the input assumptions of the two forecasting models. In the case of Experian, this uses additional information provided for the context of this SHMA, while published data is summarised for the EEFM.

# Input Assumptions

## Population

As identified earlier in this appendix, the economic forecasting models developed by Oxford Economics and Experian contain assumptions on how the population will change over the forecasting period. Experian align with the official 2012-based sub-national population projections (SNPP) published by ONS, whereas the Oxford Economics model generates its own forecast of population growth at a national level. Whilst birth and death rates are taken from the ONS projections, migration is driven by Oxford Economics' own assumptions around the impact of the economy. Local levels of migration therefore vary, on the basis of the comparative need for labour.

The following table summarises the level of population growth implied over the forecast period to 2037 within each forecast, alongside the growth projected under the official 2012-based SNPP. This highlights the scale of difference between the EEFM and Experian models with regards to population, particularly in Castle Point and Southend-on-Sea. There is a much closer alignment between the Experian forecast and the SNPP 2012 projection noting that the Experian model uses this projection as an input to its forecasting as noted earlier in the section.

	EEFM	Experian	SNPP 2012
Basildon	30,133	26,770	26,766
Castle Point	1,530	10,274	10,327
Rochford	10,139	10,533	10,560
Southend-on-Sea	18,925	30,520	30,394
Thurrock	36,735	37,462	37,511
TGSE	97,461	115,559	115,558

# Table 3.12 Forecast Population Growth 2014 – 2037

Source: Oxford Economics, Experian, ONS

#### Economic Activity Rates

It is well documented that the population of the UK is ageing. This is being experienced differently across different parts of the country, with Scotland anticipated to be the first part of the UK to see a decline in the working age population from 2022 followed by the North East<sup>196</sup>.

As the population ages, this will have an impact on the size and make-up of the labour force. Changes to State Pension Ages will potentially have an impact on the proportion of older

<sup>&</sup>lt;sup>196</sup> Experian Economics' Spring 2015 Seminar, 14<sup>th</sup> May 2015

residents in the workforce, those aged over 65, continuing to be classified as economically active. The Office for Budget Responsibility<sup>197</sup> (OBR) expects that:

'Employment rates for men aged 60 to 64 years will continue rising over time, although slightly more gradually than in the recent past, and ending the period below the level seen in the 1970s. Employment rates for women of the same age are projected to pick up more significantly over the next five years, as the SPA [State Pension Age] is equalised. And SPA changes are also projected to raise the shares of both men and women working into their late sixties. We do not assume that this pace of change continues into later life'.



Figure 3.3 Employment Rates for 60 to 74 Year Olds

Source: Fiscal Sustainability Report, Office for Budget Responsibility, July 2014

Note: Prior to 1983, the Labour Force Survey does not contain an annual series for these indicators, so only available years are shown. OBR's medium-term forecast is produced top-down, not bottom-up, so the dotted lines for that period are a simple linear interpolation.

The rate of change in the employment rate forecast for older people by OBR is presented in the following table.

	Male	Female
60 - 64	17.0%	71.0%
65 – 69	39.0%	93.0%
70 – 74	20.0%	83.0%

#### Table 3.13 OBR Age-Specific Employment Rate Forecasts 2011 – 2031

#### Source: OBR, 2014

Despite increases in employment rates amongst residents in the 60-74 year bracket, the following chart illustrates that the scale of population growth in these age groups will mean that

<sup>&</sup>lt;sup>197</sup> Fiscal Sustainability Report, Office for Budget Responsibility, July 2014

overall employment rates for the 16-74 age-range are projected to decline. A greater number of residents will be needed to fill the same number of jobs.



Figure 3.4 Employment Rate Projections, 16+ Population

Source: Fiscal Sustainability Report, Office for Budget Responsibility, July 2014

Forecasting companies make various assumptions about the economic activity of residents aged over 65. For example, Experian's economic activity rates for the over 65 population are informed by:

- **Pension reform** raising the state pension age will mean that more people stay working for longer. In particular there will be a notable jump in the number of economically active women aged 60-64.
- **Retirement reform** the eradication of statutory retirement age will encourage individuals to remain in employment for longer.
- **Behavioural change** there will be more women working in older age groups as they will be in cohorts who have always worked.

Importantly, Experian's 'overall participation rate is based on a ratio of the total labour force to the entire adult population (not only the working age population)'.

The following chart illustrates the effect of assumptions made by Experian with regards to the economic activity of residents over 65 years on the overall participation rate. The baseline shows their projected participation rate; the flat line shows the effect of holding all participation rates of those over 65 years flat; and the pension only line '*holds all rates flat but allows for increases in participation rates only as a result of changing SPA*'. Experian's assumptions around participation rates of those aged over 65 clearly have a large impact on overall participation rates, with rates being around 4% higher by the end of the projection period with these assumptions than without them.



Figure 3.5 UK Participation Rates for those aged 16+

Source: Experian, 2015

As the economic activity expectations of this group increases so does the size of the group due to population ageing, leading to a potentially significant increase in labour force under the baseline projection. This is illustrated in the following charts based on data directly supplied by Experian.

Basildon, Southend, Rochford and Thurrock are forecast notable proportionate change in their economic activity rates. In the case of Rochford, this leads to a significant proportion of residents aged over 65 years being projected to be economically active (37.8% in 2031). This would suggest that fewer homes are required per job to provide the necessary level of labour. The reliance on labour force growth amongst older age groups must be treated with caution in estimates of housing need, as referenced subsequently in relation to Planning Advisory Service (PAS) guidance.


Figure 3.6 Basildon – Economic Activity and Labour Force, Over 65s, 2004-2031 (Experian)

Source: Experian 2015





Source: Experian 2015



Figure 3.8 Rochford – Economic Activity and Labour Force, Over 65s, 2004-2031 (Experian)

Source: Experian 2015





Source: Experian 2015



Figure 3.10 Thurrock – Economic Activity and Labour Force, Over 65s, 2004-2031 (Experian)

## Source: Experian 2015

In the context of the above, it is important to recognise that residents aged over 65 are more likely to work part time hours and therefore this is unlikely to be directly translated into a like for like increase in jobs filled.

EEFM does not produce data for economic activity and the 2013 Technical Report does not comment on this variable. Demographic variables include the working age population (16-64 years) and the older population (65 year plus). Total workplace employment (i.e. people in jobs) is based on Census and BRES data while residence employment (i.e. local people in jobs) is based on the Census commuting matrix.

Though EEFM output does not directly provide economic activity rates, these can, to a degree, be inferred from other indicators. For example, the chart below illustrates that the employment rate of TGSE is forecast to increase by around 4.5 percentage points from 2013 to 2031.





# Source: EEFM 2014

While EEFM data does not allow us to see the exact assumptions made with regards to economic activity rates by age group, Edge Analytics has extracted out the rates using the data available. This is illustrated in the following table. The overall economic activity rates show that Castle Point is forecast the largest percentage point increase in economic activity from 2011-2031 (6.27 percentage points). This compares to a much lower rate of increase in Rochford (2.57). These changes allude to some assumptions made within EEFM's modelling around increases in economic activity among the older age groups within the 16-74 age bracket.

Area	Economic	Change (2011_2031)		
Aica	2011	2014	2031	(pp)
Basildon	69.4%	72.8%	73.4%	4.03
Castle Point	66.5%	<mark>66.7%</mark>	72.8%	6.27
Rochford	<mark>69</mark> .1%	69.4%	71.7%	2.57
Southend-on-Sea	69.0%	69.6%	72.2%	3.12
Thurrock	71.6%	71.9%	75.3%	3.71

 Table 3.14
 Economic Activity Rates, 16-74 years of age

Source: EEFM, 2014, Edge Analytics, April 2015

A significant increase in economic activity rates of those aged over 65 must be treated with caution. Planning Advisory Service (PAS) guidance<sup>198</sup> highlights that:

'A number of housing assessments have been criticised by Inspectors for their assumptions about economic activity rates. The issue relates especially in relation to older people, where some studies expect the increases in state pension age to produce much increased activity rates over the next 15-20 years. This reduces the population growth, and hence household growth, that is required to support a given number of new jobs. But unrealistic figures put the emerging plan at risk. Not only could the housing assessment be unsound in itself, but also could be inconsistent with proposals for employment land, which are also based on expected future employment'.

This is also highlighted by the Inspectors of the Cheshire East Local Plan and Stratford-on-Avon Local Plan:

'CEC's assumptions about future employment envisage increased economic activity rates for older people, related to the deferral of state pension age. Although there is some evidence that employment rates in this age group may increase, the assumptions used in the estimates are somewhat over-optimistic, again depressing the need for new houses for new, and younger, employees',199.

It is also stated that:

Given this significant contraction in what I shall call the conventional economically active population, those aged 16-64, it is difficult to understand the justification for the projected increase in the working population, or labour force supply. It appears to rely on an ageing workforce and whilst I recognise the increase in state pension age the employment yield from these age groups might be low due to lifestyle choice and other factors<sup>200</sup>,

## Unemployment

Unemployment rates also affect the level of homes required to meet jobs growth. Both Experian and EEFM project unemployment rates to fall across all authorities in TGSE from 2013 to 2031.

As with other indicators, Experian and EEFM apply different methods of calculating unemployment and so the absolute figures in the table below cannot be directly compared. The percent change should be used for any comparison. Experian uses the International Labour Organisation (ILO) unemployment rate which captures any person not in employment who would like to work. EEFM uses claimant count unemployment rate which is lower than ILO unemployment, capturing only those who are registered for Job Seekers Allowance.

Under Experian projections, the unemployment rate in 2031 is forecast to be slightly higher than the pre-recession average in each authority.

<sup>&</sup>lt;sup>198</sup> Objectively Assessed Need and Housing Targets: Technical Advice Note, Planning Advice Service, June 2014 <sup>199</sup> Cheshire East Council, Examination of the Cheshire East Local Plan Strategy, Inspector's Interim Views on the Legal Compliance and Soundness of the Submitted Local Plan Strategy, Stephen J Pratt, November 2014

Inspectors' Interim Conclusions on the Stratford-on-Avon Core Strategy, Pete Drew, March 2015

Authority (Pre- recession average	Experian	2021	PP	%	EEFM	2021	PP	%
Basildon (4.5%)	8.2%	4.9%	-3.3	-40%	3.9%	2.4%	-1.48	-39%
Castle Point (3.5%)	6.8%	4.6%	-2.25	-33%	2.6%	1.9%	-0.71	-27%
Rochford (3.4%)	4.9%	3.3%	-1.60	-33%	2.0%	1.4%	-0.56	-28%
Southend- on-Sea (5.5%)	7.6%	6.5%	-1.04	-14%	4.1%	2.9%	-1.19	-29%
Thurrock (4.4%)	7.3%	5.6%	-1.63	-22%	3.8%	2.3%	-1.56	-41%

## Table 3.7 Unemployment Rate, 2013-2031

Source: Experian 2015; EEFM 2014

## Commuting

Commuting assumptions are important and can have a significant effect on housing targets. However, they must be realistic to ensure housing targets will support the economic growth potential of an area. These assumptions are also important in Duty to Co-operate terms.

The PPG states that:

'Where the supply of working age population that is economically active (labour force supply) is less than the projected job growth, this could result in unsustainable commuting patterns (depending on public transport accessibility or other sustainable options such as walking or cycling) and could reduce the resilience of local businesses. In such circumstances, plan makers will need to consider how the location of new housing or infrastructure development could help address these problems.'

Likewise, the PAS guidance notes that:

'Another risky approach is to plan for recalling commuters, so the ratio of workplace jobs to resident workers – and hence to population and number of dwellings – is assumed to rise over the plan period. Like increasing activity rates, this assumption means that more jobs can be accommodated for a given number of dwellings, or a given number of jobs needs fewer dwellings. But for the shift in commuting ratio to be believable there would have to be supporting evidence, to show what economic factors or policy action will bring it about. In general such evidence is not provided and the assumption of reduced commuting relies on pure aspiration. In any case strategies of recalling commuters should not be adopted unilaterally...This needs joint working across labour market areas'.

In forecasting, commuting is an important variable, as summarised below:

- To respond to an increase in jobs, Experian make assumptions about the degree to which commuting patterns can be expected to adapt. If an area competes with the labour market of another, more economically competitive, area then reducing net out-commuting may be unrealistic. For example, TGSE has a strong commuting connection with London. If the number of jobs available in TGSE increases it will not automatically mean that commuting trends will alter, particularly if the type and location of jobs are not synonymous with the expectations and behaviours of commuters. Edge Analytics has identified that the following commuting rates are used within the Experian model with these suggesting that TGSE proportionally exports a greater proportion of labour-force:
  - Basildon 0.94 in 2014 rising to 0.99 in 2035 (+0.05 change)
  - Castle Point 1.69 in 2014 rising to 1.81 in 2035 (+0.12)
  - Rochford 1.45 in 2014 rising to 1.55 in 2035 (+0.10)
  - Southend-on-Sea 0.90 in 2014 rising to 0.95 in 2035 (+0.05)
  - Thurrock 1.14 in 2014 rising to 1.19 in 2035 (+0.05)
- In EEFM modelling, net-commuting is *'the residual between an area's residence-based and workplace-based estimates of numbers of people in employment'* and can occasionally lead to manual adjustments if they are not in line with past trends. Residence employment is based on the Census commuting matrix and is assumed to be constant. However, adjustments are made where required to match projected jobs growth. For example in EEFM 2014, Edge Analytics has identified that the following commuting ratios are used<sup>201</sup>:
  - Basildon 0.99 in 2014 rising to 1.00 in 2031 (+0.01 change)
  - Castle Point 1.41 in 2014 rising to 1.49 in 2031 (+0.08)
  - Rochford 1.43 in 2014 rising to 1.46 in 2031 (+0.03)
  - Southend-on-Sea 1.07 in 2014 rising to 1.08 in 2031 (+0.01)
  - Thurrock 1.22 in 2014 falling to 1.16 in 2031 (-0.06)

Note: A commuting ratio of more than one suggests that the resident population in employment is larger than the number of jobs available (net out-commuting). A decline in the figure implies claw back of employees and a reduction in net out-commuting.

# **POPGROUP Employment-led Modelling Outputs**

In order to consider further the implications of the application of variant modelling input labour force assumptions on the implied population and household growth projections, Edge Analytics

<sup>&</sup>lt;sup>201</sup> Source: EEFM, 2014, cited in Greater Essex Demographic Forecasts 2013-2037, Phase 7 Main Report, Edge Analytics, April 2015

has taken the economic forecast modelling inputs and integrated them within the POPGROUP model alongside the forecast job growth outputs<sup>202</sup>.

Edge Analytics has run a number of variant versions of these employment-led projections. Initially the modelling has sought to assess the extent to which the migration of people of working age is impacted by forecast job growth through the application of a series of labour force assumptions within the POPGROUP model.

## Enabling a comparison with the Economic Forecasting houses labour-force adjustments

In order to compare and contrast the impact of the labour-force adjustments applied to the demographic projections in the POPGROUP model with those used in the two forecasting house models Edge Analytics has also sought to integrate the forecasting houses labour-force assumptions in the POPGROUP model. Whilst the outputs of this modelling do not result in a direct alignment to the input / output population growth recorded in each of the forecasting houses models there is a comparatively strong alignment which indicates that at a broad level it is possible to appraise the impact of the differing labour-force assumptions in the forecast models and POPGROUP.

It is important to note in the context of the analysis preceding the presentation of this modelling that there is variance in these assumptions between the forecasting models. There are therefore a number of areas where the scale of adjustment is noted to be significant, including, for example, economic activity rates of older persons in the labour force. Detailed information regarding the assumptions used in the modelling is included in Appendix 4. However, the analysis below presents a summary of the comparable POPGROUP modelled assumptions used for the scenario forecasts.

## Variant Labour force Assumptions used within the POPGROUP modelling

The following table compares the different approaches used to apply adjustments to economic activity rates by Edge Analytics within the POPGROUP model and the two forecasting models.

 $<sup>^{\</sup>rm 202}$  'Workforce jobs' rather than 'jobs demand' has been modelled at this stage

	Economic Activity Rates Assumptions
Edge Analytics standard assumption (no suffix label on scenarios presented)	2011 Census economic activity rates for people aged 16 – 74 by 5-year age group and sex are used. Rates for males and females aged 60 – 69 are modified from 2011 to 2020 to account for changes to State Pension Age
OBR ('OBRadj')	Using the 2014 Fiscal Sustainability Report produced by the OBR, an alternative set of economic activity rates has been derived where the 2011 Census economic activity rates for the older age groups have been modified from 2011 to 2031 in line with the increases in the employment rate, as forecast by OBR
Experian ('EXP')	Economic activity rates are provided from the Experian model for people aged 16 – 64 and 65+, changing over the forecast period as forecast by Experian
EEFM ('EEFM')	Economic activity rates are provided for people aged 16 – 74, changing over the forecast period as suggested by the EEFM

## Table 3.8 Economic Activity Rate Assumptions used in the POPGROUP modelling

Source: Edge Analytics, 2015

The following charts consider the input assumptions used in the modelling in more detail.

With regards to economic activity rates, the standard set of assumptions in the Edge Analytics model suggest that despite applying increases to economic activity rates in older ages, the aggregate level of economic activity in the Edge Analytics assumptions decreases over the forecast period. This is shown in the following chart which is based upon the outputs of the POPGROUP model calculated using the 2012 SNPP scenario for each authority.



Figure 3.12 Edge Analytics POPGROUP Aggregate Economic Activity Rates

It is difficult to directly compare this against the outputs of the forecasting models in this output. However, charts presented in the earlier section present the forecasting houses' assumption on economic activity / employment rates, noting that these can vary depending on the population group (age) used. In headline terms the Edge Analytics modelling assumptions which show a general decline in activity rates contrasts with the upward trend shown in both the Experian (Figures 3.6 - 3.10) and the EEFM model (Table 3.14).

A comparable analysis of unemployment rates is shown in Figure 3.13. It should be noted that EEFM uses the JSA definition of unemployment and therefore is not directly comparable to the data used by Edge Analytics and Experian. Instead the general trends should be assessed.

Source: Edge Analytics, 2015



Figure 3.13 Comparable Unemployment Rate Assumptions used in the POPGROUP modelling

Source: Edge Analytics, 2015

The key consideration in the analysis of the unemployment rate assumptions is the change in the unemployment rates over the forecast period. The Experian model in particular projects a notable reduction in unemployment at the beginning of the forecast period, particularly the first two years. The model then assumes a level of variation going forward with a slight upward trend suggested in a number of authorities. By contrast, and noting as set out above that the EEFM uses a different dataset to represent unemployment, the EEFM whilst also suggesting an improvement in rates, albeit more modest, initially then suggests differing trends by authority with some forecast to increase and some decrease.

Edge Analytics assumes unemployment rates reducing at a more moderate rate until 2020, albeit to a slightly lower level in a number of cases, keeping them fixed thereafter. It is important to recognise that the adjustments to unemployment do need to be considered in the context of the rates of change assumed in economic activity considered already in this section.

Figure 3.14 provides a comparison of commuting rate assumptions used in the modelled scenarios.



Figure 3.14 Comparable Commuting Assumptions used in the POPGROUP modelling



It is noted that again there is variation with regard to the commuting assumptions. The largest differences are found in Southend-on-Sea where the Experian forecast assumes a net incommute into the area throughout the whole of the forecast period, whereas the other two sets of assumptions maintain the ratio above 1.00 suggesting continuing out-commuting out of the area. Considerable differences are also noted in Castle Point where all sets of assumptions imply net out-commute out of the area but the level of this out-commute varies considerably, with the Experian forecast suggesting the highest out-commute and the EEFM, in contrast, the lowest.

# **Employment-led Scenarios**

The following employment-led scenarios have therefore been modelled within POPGROUP by Edge Analytics. The breadth of these forecasts are intended to represent the uncertainties associated with balancing job growth, labour-force behaviour and thereby population growth:

- **EEFM Jobs**: demographic change is linked to the growth in total employment from the 2014 Baseline EEFM model; Edge Analytics assumptions on economic activity, unemployment and commuting are used
- **EEFM Jobs OBRadj**: demographic change is linked to the growth in total employment from the 2014 Baseline EEFM model; OBR-derived assumptions on economic activity are used, with Edge Analytics assumptions on unemployment and commuting
- **EEFM Employed People**: demographic change is linked to the growth in the number of workplace employed people from the 2014 Baseline EEFM model; Edge Analytics assumptions on economic activity, unemployment and commuting are used
- **EEFM Employed People OBRadj**: demographic change is linked to the growth in the number of workplace employed people from the 2014 Baseline EEFM model; OBR-derived assumptions on economic activity are used, with Edge Analytics' assumptions on unemployment and commuting
- **EEFM Employed People EEFM**: demographic change is linked to the growth in the number of workplace employed people from the 2014 Baseline EEFM model; EEFM-derived assumptions on economic activity, unemployment and commuting are used. It is noted that this scenario is not given significant weight in the analysis as the level of data available from the EEFM model presents challenges in accurately integrating assumptions into POPGROUP. The purpose of the scenario is to illustrate the potential differences in assumptions used in the EEFM and POPGROUP and their implications for population and household growth.
- **Exp Jobs**: demographic change is linked to the growth in the 'workforce jobs' from the Experian forecast; Edge Analytics assumptions on economic activity, unemployment and commuting are used
- **Exp Jobs OBRadj**: demographic change is linked to the growth in the 'workforce jobs' from the Experian forecast; OBR-derived assumptions on economic activity are used, with Edge Analytics assumptions on unemployment and commuting

- **Exp WorkEmp**: demographic change is linked to the growth in the 'workplace based employment' from the Experian forecast; Edge Analytics assumptions on economic activity, unemployment and commuting are used
- **Exp WorkEmp OBRadj**: demographic change is linked to the growth in the 'workplace based employment' from the Experian forecast; OBR-derived assumptions on economic activity are used, with Edge Analytics assumptions on unemployment and commuting
- Exp WorkEmp EXP: demographic change is linked to the growth in the 'workplace based employment' from the Experian forecast; Experian-derived assumptions on economic activity, unemployment and commuting are used. As with the EEFM Employed People EEFM scenario weight is not given to this scenario. The comparative availability of data from Experian, noting that this drew on data directly sourced from Experian for this project, does mean that this scenario is considered more robust in illustrating the impacts in POPGROUP than the comparative scenario using the EEFM assumptions.

To ensure consistency with demographic scenarios, growth forecasts for the final year of each of the economic forecasts (i.e. 2031 for the EEFM model and 2035 for the Experian forecast) are continued to 2037.

## **Modelling Outputs**

The following tables compare in full the outputs of the employment led modelling using the three different sets of assumptions for the TGSE as a whole and then each of the authorities across the TGSE.

## TGSE

For the TGSE HMA overall, the **Exp Jobs** and **Exp WorkEmp** scenarios record the highest population growth outcomes of all scenarios at 24.2% and 21.6% respectively, with the corresponding average annual dwelling requirements of 3,863 and 3,530 per year, assuming that household formation rates follow the trend in the 2012-based household model. This reflects the higher jobs growth assumed in the Experian forecast compared to the EEFM model.

The application of the alternative assumptions on economic activity rates, commuting and unemployment derived from the respective economic forecasts lowers the need for in-migration required to meet the jobs growth targets. In turn, this lowers the expected population growth over the forecast period.

In terms of the implied dwelling growth, the application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 2,912 to 4,081 per year.





# Table 3.9 TGSE Employment-led Scenarios, Outcomes, 2014 – 2037

	Change 2014 - 2037				Average per year		
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	168,260	24.2%	86,082	29.9%	4,760	3,863	2,203
Exp WorkEmp	149,987	21.6%	78,643	27.3%	4,102	3,530	1,875
EEFM Jobs	148,803	21.4%	78,038	27.1%	3,911	3,496	1,857
Exp Jobs OBRadj	147,272	21.2%	77,681	26.9%	3,971	3,486	2,203
EEFM Employed People	144,795	20.8%	76,475	26.5%	3,765	3,427	1,777
Exp WorkEmp OBRadj	129,345	18.6%	70,371	24.4%	3,325	3,159	1,875
EEFM Jobs OBRadj	128,116	18.4%	69,748	24.2%	3,133	3,124	1,857
EEFM Employed People OBRadj	124,165	17.9%	68,206	23.7%	2,989	3,056	1,777
Exp WorkEmp - EXP	117,792	16.9%	65,991	22.9%	2,812	2,961	1,875
EEFM Employed People - EEFM	104,615	15.0%	60,592	21.0%	2,305	2,714	1,777

	Change 2014 - 2037				Average per year		
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	168,260	24.2%	90,950	31.6%	4,760	4,081	2,203
Exp WorkEmp	149,987	21.6%	83,402	29.0%	4,102	3,744	1,875
EEFM Jobs	148,803	21.4%	82,673	28.7%	3,911	3,704	1,857
Exp Jobs OBRadj	147,272	21.2%	82,424	28.6%	3,971	3,699	2,203
EEFM Employed People	144,795	20.8%	81,091	28.2%	3,765	3,634	1,777
Exp WorkEmp OBRadj	129,345	18.6%	75,008	26.0%	3,325	3,367	1,875
EEFM Jobs OBRadj	128,116	18.4%	74,263	25.8%	3,133	3,327	1,857
EEFM Employed People OBRadj	124,165	17.9%	72,702	25.2%	2,989	3,257	1,777
Exp WorkEmp - EXP	117,792	16.9%	70,517	24.5%	2,812	3,164	1,875
EEFM Employed People - EEFM	104,615	15.0%	65,001	22.6%	2,305	2,912	1,777

## Basildon

The **Exp Jobs** and **Exp WorkEmp** scenarios record the highest population growth outcomes of all scenarios at 21.5% and 18.7% respectively, with the corresponding average annual dwelling requirements of 886 and 794 per year, assuming that household formation rates follow the trend in the 2012-based household model. This reflects the higher jobs growth assumed in the Experian forecast compared to the EEFM model.

The application of the alternative assumptions on economic activity rates, commuting and unemployment derived from the respective economic forecasts, lowers the need for in-migration required to meet the jobs growth targets which in turn lowers the expected population growth over the forecast period.

In terms of the implied dwelling growth, the application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 701 to 931 per year.





	Change 2014 - 2037				Average per year		
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	38,841	21.5%	20,020	26.5%	787	886	583
Exp Jobs OBRadj	33,823	18.7%	17,977	23.8%	600	795	583
Exp WorkEmp	33,783	18.7%	17,938	23.7%	601	794	473
EEFM Jobs	32,526	18.0%	17,489	23.1%	532	774	442
EEFM Employed People	31,108	17.2%	16,910	22.4%	480	748	412
Exp WorkEmp OBRadj	28,846	16.0%	15,927	21.1%	418	705	473
EEFM Employed People - EEFM	28,745	15.9%	15,939	21.1%	393	705	412
EEFM Jobs OBRadj	27,584	15.3%	15,475	20.5%	349	685	442
Exp WorkEmp - EXP	27,272	15.1%	15,320	20.3%	347	678	473
EEFM Employed People OBRadj	26,189	14.5%	14,905	19.7%	297	659	412

	Change 2014 - 2037				Average per year		
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	38,841	21.5%	21,030	27.8%	787	931	583
Exp Jobs OBRadj	33,823	18.7%	18,964	25.1%	600	839	583
Exp WorkEmp	33,783	18.7%	18,922	25.0%	601	837	473
EEFM Jobs	32,526	18.0%	18,459	24.4%	532	817	442
EEFM Employed People	31,108	17.2%	17,873	23.7%	480	791	412
Exp WorkEmp OBRadj	28,846	16.0%	16,887	22.4%	418	747	473
EEFM Employed People - EEFM	28,745	15.9%	16,891	22.4%	393	747	412
EEFM Jobs OBRadj	27,584	15.3%	16,423	21.7%	349	727	442
Exp WorkEmp - EXP	27,272	15.1%	16,269	21.5%	347	720	473
EEFM Employed People OBRadj	26,189	14.5%	15,845	21.0%	297	701	412

## Castle Point

The **Exp Jobs** and **Exp WorkEmp** scenarios record the highest population growth outcomes of all scenarios at 20.8% and 17.2% respectively, with the corresponding average annual dwelling requirements of 438 and 378 per year, assuming that household formation rates follow the trend in the 2012-based household model. This reflects the considerably higher jobs growth assumed in the Experian forecast compared to the EEFM model.

The application of the alternative assumptions on economic activity rates, commuting and unemployment derived from the respective economic forecasts, lowers the need for in-migration required to meet the jobs growth targets which in turn lowers the expected population growth over the forecast period.

In terms of the implied dwelling growth, the application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 265 to 470 per year.



Figure 3.17 Castle Point Employment-led Scenarios, Population Growth, 2001 – 2037

Table 3.11	Castle Point Employment-led Scenarios,	Outcomes	2014 – 2037
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	Change 2014 - 2037				Average per year		
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	18,515	20.8%	9,735	26.3%	1,017	438	112
Exp Jobs OBRadj	15,536	17.5%	8,563	23.1%	898	385	112
Exp WorkEmp	15,249	17.2%	8,413	22.7%	890	378	70
Exp WorkEmp OBRadj	12,340	13.9%	7,266	19.6%	774	327	70
EEFM Employed People	10,854	12.2%	6,810	18.4%	702	306	9
EEFM Jobs	10,777	12.1%	6,776	18.3%	699	305	8
Exp WorkEmp - EXP	10,650	12.0%	6,645	18.0%	703	299	70
EEFM Employed People OBRadj	8,004	9.0%	5,681	15.4%	589	255	9
EEFM Jobs OBRadj	7,930	8.9%	5,647	15.3%	586	254	8
EEFM Employed People - EEFM	6,997	7.9%	5,263	14.2%	550	237	9

	Change 2014 - 2037				Average per year		
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	18,515	20.8%	10,462	28.3%	1,017	470	112
Exp Jobs OBRadj	15,536	17.5%	9,268	25.1%	898	417	112
Exp WorkEmp	15,249	17.2%	9,118	24.7%	890	410	70
Exp WorkEmp OBRadj	12,340	13.9%	7,950	21.5%	774	357	70
EEFM Employed People	10,854	12.2%	7,469	20.2%	702	336	9
EEFM Jobs	10,777	12.1%	7,434	20.1%	699	334	8
Exp WorkEmp - EXP	10,650	12.0%	7,314	19.8%	703	329	70
EEFM Employed People OBRadj	8,004	9.0%	6,319	17.1%	589	284	9
EEFM Jobs OBRadj	7,930	8.9%	6,286	17.0%	586	283	8
EEFM Employed People - EEFM	6,997	7.9%	5,893	16.0%	550	265	9

## Rochford

The **Exp Jobs** and **Exp WorkEmp** scenarios record the highest population growth outcomes of all scenarios at 22.3% and 18.8% respectively, with the corresponding average annual dwelling requirements of 414 and 362 per year, assuming that household formation rates follow the trend in the 2012-based household model. This reflects the higher jobs growth assumed in the Experian forecast compared to the EEFM model.

The application of the alternative assumptions on economic activity rates, commuting and unemployment derived from the respective economic forecasts, lowers the need for in-migration required to meet the jobs growth targets which in turn lowers the expected population growth over the forecast period.

In terms of the implied dwelling growth, the application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 298 to 438 per year.



Figure 3.18 Rochford Employment-led Scenarios, Population Growth, 2001 – 2037

Table 3.12	Rochford Employment-led Scenarios, Outcomes, 2014 – 2037					
	Change 2014 - 2037	Average per year				

	Change Zerri Zeer				r tiolago por year			
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs	
Exp Jobs	18,888	22.3%	9,281	27.1%	796	414	136	
Exp Jobs OBRadj	15,995	18.9%	8,165	23.8%	683	364	136	
Exp WorkEmp	15,914	18.8%	8,108	23.6%	684	362	93	
EEFM Jobs	15,417	18.2%	7,996	23.3%	652	357	83	
EEFM Employed People	15,337	18.1%	7,967	23.2%	648	355	82	
Exp WorkEmp OBRadj	13,084	15.4%	7,014	20.4%	573	313	93	
EEFM Jobs OBRadj	12,573	14.8%	6,896	20.1%	541	308	83	
EEFM Employed People OBRadj	12,494	14.7%	6,867	20.0%	538	306	82	
EEFM Employed People - EEFM	12,370	14.6%	6,806	19.8%	535	304	82	
Exp WorkEmp - EXP	10,895	12.9%	6,205	18.1%	483	277	93	

	Change 2014 - 2037				Average per year			
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs	
Exp Jobs	18,888	22.3%	9,987	29.2%	796	446	136	
Exp Jobs OBRadj	15,995	18.9%	8,847	25.8%	683	395	136	
Exp WorkEmp	15,914	18.8%	8,790	25.7%	684	392	93	
EEFM Jobs	15,417	18.2%	8,658	25.3%	652	386	83	
EEFM Employed People	15,337	18.1%	8,628	25.2%	648	385	82	
Exp WorkEmp OBRadj	13,084	15.4%	7,674	22.4%	573	342	93	
EEFM Jobs OBRadj	12,573	14.8%	7,536	22.0%	541	336	83	
EEFM Employed People OBRadj	12,494	14.7%	7,506	21.9%	538	335	82	
EEFM Employed People - EEFM	12,370	14.6%	7,442	21.7%	535	332	82	
Exp WorkEmp - EXP	10,895	12.9%	6,840	20.0%	483	305	93	

## Southend-on-Sea

The **Exp Jobs** and **Exp WorkEmp** scenarios record the highest population growth outcomes of all scenarios at 24.8% and 23.4% respectively, with the corresponding average annual dwelling requirements of 1,120 and 1,070 per year, assuming that household formation rates follow the trend in the 2012-based household model. This reflects the considerably higher jobs growth assumed in the Experian forecast compared to the EEFM model.

The application of the alternative assumptions on economic activity rates, commuting and unemployment derived from the respective economic forecasts, lowers the need for in-migration required to meet the jobs growth targets which in turn lowers the expected population growth over the forecast period.

In terms of the implied dwelling growth, the application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 716 to 1,183 per year.



Figure 3.19 Southend-on-Sea Employment-led Scenarios, Population Growth, 2001 – 2037

Table 3.13	Southend-on-Sea	Employment-led	Scenarios,	Outcomes,	2014 - 2037
			,	,	

	Change 2014 - 2037				Average per year		
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Exp Jobs	44,180	24.8%	24,477	31.8%	1,381	1,120	611
Exp WorkEmp	41,688	23.4%	23,380	30.4%	1,296	1,070	564
Exp Jobs OBRadj	38,437	21.6%	22,056	28.7%	1,166	1,009	611
Exp WorkEmp OBRadj	36,000	20.2%	20,982	27.3%	1,083	960	564
Exp WorkEmp - EXP	30,980	17.4%	18,953	24.7%	871	867	564
EEFM Jobs	29,090	16.3%	18,163	23.6%	797	831	317
EEFM Employed People	28,922	16.3%	18,092	23.5%	790	828	314
EEFM Jobs OBRadj	23,589	13.3%	15,834	20.6%	591	725	317
EEFM Employed People OBRadj	23,423	13.2%	15,764	20.5%	584	721	314
EEFM Employed People - EEFM	20,392	11.5%	14,475	18.8%	470	662	314

	Change 2014 - 2037				Average per year			
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs	
Exp Jobs	44,180	24.8%	25,843	33.6%	1,381	1,183	611	
Exp WorkEmp	41,688	23.4%	24,731	32.2%	1,296	1,132	564	
Exp Jobs OBRadj	38,437	21.6%	23,381	30.4%	1,166	1,070	611	
Exp WorkEmp OBRadj	36,000	20.2%	22,291	29.0%	1,083	1,020	564	
Exp WorkEmp - EXP	30,980	17.4%	20,208	26.3%	871	925	564	
EEFM Jobs	29,090	16.3%	19,401	25.2%	797	888	317	
EEFM Employed People	28,922	16.3%	19,329	25.1%	790	885	314	
EEFM Jobs OBRadj	23,589	13.3%	17,032	22.1%	591	779	317	
EEFM Employed People OBRadj	23,423	13.2%	16,961	22.1%	584	776	314	
EEFM Employed People - EEFM	20,392	11.5%	15,648	20.3%	470	716	314	

## Thurrock

Unlike the other areas, in Thurrock the EEFM forecast assumes higher jobs growth than the Experian forecast. As a result, the **EEFM Jobs** and **EEFM Employed People** scenarios record the highest population growth outcomes of all scenarios at 37.4% and 35.9% respectively, with the corresponding average annual dwelling requirements of 1,230 and 1,189 per year, assuming that household formation rates follow the trend in the 2012-based household model.

The application of the alternative assumptions on economic activity rates, commuting and unemployment derived from the respective economic forecasts, lowers the need for in-migration required to meet the jobs growth targets which in turn lowers the expected population growth over the forecast period. This is particularly evident in the **EEFM Employed People – EEFM** scenario.

In terms of the implied dwelling growth, the application of the alternative headship rates assumptions (**HH-12 R**) results in a higher average annual dwelling requirement for all scenarios ranging from 852 to 1,279 per year.



Figure 3.20 Thurrock Employment-led Scenarios, Population Growth, 2001 – 2037

## Table 3.13 Thurrock Employment-led Scenarios, Outcomes, 2014 – 2037

	Change 2014 - 2037				Average per year			
Scenario (HH-12)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs	
EEFM Jobs	60,992	37.4%	27,615	42.8%	1,231	1,230	1,006	
EEFM Employed People	58,573	35.9%	26,697	41.4%	1,144	1,189	960	
EEFM Jobs OBRadj	56,440	34.6%	25,896	40.1%	1,067	1,153	1,006	
EEFM Employed People OBRadj	54,054	33.1%	24,990	38.7%	982	1,113	960	
Exp Jobs	47,835	29.3%	22,569	35.0%	780	1,005	761	
Exp Jobs OBRadj	43,481	26.6%	20,919	32.4%	623	932	761	
Exp WorkEmp	43,353	26.6%	20,804	32.2%	632	927	676	
Exp WorkEmp OBRadj	39,075	23.9%	19,182	29.7%	478	854	676	
Exp WorkEmp - EXP	37,996	23.3%	18,869	29.2%	408	840	676	
EEFM Employed People - EEFM	36,111	22.1%	18,110	28.1%	358	807	960	

	Change 2014 - 2037				Average per year		
Scenario (HH-12 R)	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
EEFM Jobs	60,992	37.4%	28,720	44.6%	1,231	1,279	1,006
EEFM Employed People	58,573	35.9%	27,792	43.2%	1,144	1,238	960
EEFM Jobs OBRadj	56,440	34.6%	26,987	41.9%	1,067	1,202	1,006
EEFM Employed People OBRadj	54,054	33.1%	26,071	40.5%	982	1,161	960
Exp Jobs	47,835	29.3%	23,628	36.7%	780	1,052	761
Exp Jobs OBRadj	43,481	26.6%	21,964	34.1%	623	978	761
Exp WorkEmp	43,353	26.6%	21,842	33.9%	632	973	676
Exp WorkEmp OBRadj	39,075	23.9%	20,205	31.4%	478	900	676
Exp WorkEmp - EXP	37,996	23.3%	19,886	30.9%	408	886	676
EEFM Employed People - EEFM	36,111	22.1%	19,127	29.7%	358	852	960

# **Summary and Implications**

Collectively, the forecasts presented in this Appendix provide a relatively consistent indication of the scale of job growth in TGSE as a whole, although it is understood that this will continue to be assessed through separate economic evidence which is in the process of being commissioned by TGSE authorities.

Considering the growth in labour force required to support this forecast job growth is, however, complex, given that this is sensitive to the assumptions made about economic participation. While Edge Analytics typically make conservative assumptions about changes to economic activity – linked to changes in state pension ages – both Experian and EEFM include their own assumptions about the capacity of existing residents to support job growth. It is beneficial, therefore, to consider the assumptions in the economic activity rates amongst older people – appear to represent significant departures from historic evidence. This effectively implies that forecast levels of job growth can be supported by a lower level of population growth, by making greater use of the existing labour force and reducing the need for in-migration of working age persons.

Given this significant variation – and the inherent uncertainty in predicting how economic activity rates will change in future – it is beneficial to consider assumptions by EEFM and Experian alongside a variant set of assumptions applied by Edge Analytics. This enables a transparent set of assumptions to be assessed within the modelling to understand its implications. Two variant sets of economic activity rates have been used in the modelling. The first sensitivity applies an adjustment primarily associated with the impact of changes to state pension ages, while the second draws upon the OBR's assessment of the likely changing rates of older cohorts in the workforce over the projection period. Neither approach is suggested as being preferential, with all modelling outputs considered in this study.

The extent to which the models assume an increasing proportion of people undertaking more than one job has also been highlighted in the consideration of input and output data in the models. This aspect has also been considered in the POPGROUP modelling outputs using both the forecasts own assumptions and a variant sensitivity which does not seek to make any assumption around double-jobbing going forward.

Commuting also represents an area of uncertainty noting that the forecasting houses take differing views on how this may change. In the modelling of variant scenarios for transparency the assumption is that rates remain fixed. This reflects the PAS guidance on this issue and again allows a level of transparency in the modelling outputs used in POPGROUP. It is important to recognise in alignment with the PPG that the balance of jobs and population growth / housing need must be considered at the HMA level recognising the significant travel to work relationships between the authorities in this geography.

# Appendix 4: Edge Analytics Modelling Assumptions

# **POPGROUP Methodology**

Evidence is often challenged on the basis of the appropriateness of the methodology that has been employed to develop growth forecasts. The use of a recognised forecasting product which incorporates an industry-standard methodology (a cohort component model) removes this obstacle and enables a focus on assumptions and output, rather than methods.

Demographic forecasts have been developed using the POPGROUP suite of products. POPGROUP is a family of demographic models that enables forecasts to be derived for population, households and the labour force, for areas and social groups. The main POPGROUP model is a cohort component model, which enables the development of population forecasts based on births, deaths and migration inputs and assumptions.

The Derived Forecast (DF) model sits alongside the population model, providing a headship rate model for household projections and an economic activity rate model for labour force projections.

The latest development in the POPGROUP suite of demographic models is POPGROUP v.4, which was released in January 2014. A number of changes have been made to the POPGROUP model to improve its operation and to ensure greater consistency with ONS forecasting methods. The most significant methodological change relates to the handling of internal migration in the POPGROUP forecasting model. The level of internal in-migration to an area is now calculated as a rate of migration relative to a defined 'reference population' (by default the UK population), rather than as a rate of migration relative to the population of the area itself (as in the previous version of POPGROUP model, POPGROUP v3.1). This approach ensures a closer alignment with the 'multi-regional' approach to modelling migration that is used by ONS.

For further information on POPGROUP, please refer to the Edge Analytics website: http://edgeanalytics.co.uk/popgroup.









# **Data Inputs and Assumptions**

Edge Analytics has developed a suite of demographic scenarios for the five Local Authority Districts comprising the TGSE area using POPGROUP v.4 and the Derived Forecast model. The POPGROUP suite of demographic models draws data from a number of sources, building an historical picture of population, households, fertility, mortality and migration on which to base its scenario forecasts. Using historical data evidence for 2001–2014, in conjunction with information from ONS sub-national population projections (SNPPs) and DCLG household projections, a series of assumptions have been derived which drive the scenario forecasts.

The following scenarios have been produced:

- SNPP-2012
- SNPP-2012-LDN
- Natural Change
- PG-5yr
- PG-5yr-X
- PG-10yr
- PG-10yr-X
- EEFM Employed People
- EEFM Employed People EEFM
- EEFM Employed People OBRadj
- EEFM Jobs
- EEFM Jobs OBRadj
- Exp Jobs
- Exp Jobs OBRadj
- Exp WorkEmp
- Exp WorkEmp EXP
- Exp WorkEmp OBRadj

A narrative on the data inputs and assumptions underpinning the scenarios is presented in the following sections.

## **Population, Births & Deaths**

## Population

In each scenario, historical population statistics are provided by the mid-year population estimates (MYEs) for 2001–2014, with all data recorded by single-year of age and sex. These data include the revised MYEs for 2002–2010, which were released by the ONS in May 2013. The revised MYEs provide consistency in the measurement of the components of change (i.e. births, deaths, internal migration and international migration) between the 2001 and 2011 Censuses.

In the **SNPP-2012** scenario, future population counts are provided by single-year of age and sex from 2012 (i.e. not including the 2013-based MYE), to ensure consistency with the trajectory of the ONS 2012-based SNPP.

# **Births & Fertility**

In each scenario, historical mid-year to mid-year counts of births by sex from 2001/02 to 2013/14 have been sourced from the ONS revised MYEs.

In the **SNPP-2012** and **SNPP-2012-LDN** scenarios, future counts of births are specified to ensure consistency with the official projections.

In the other scenarios, a 'local' (i.e. area-specific) age-specific fertility rate (ASFR) schedule, which measures the expected fertility rates by age in 2013/14, is included in the POPGROUP model assumptions. This is derived from the ONS 2012-based SNPP.

Long-term assumptions on changes in age-specific fertility rates are taken from the ONS 2012based SNPP.

In combination with the 'population-at-risk' (i.e. all women between the ages of 15–49), the area-specific ASFR and future fertility rate assumptions provide the basis for the calculation of births in each year of the forecast period.

## **Deaths & Mortality**

In each scenario, historical mid-year to mid-year counts of deaths by age and sex from 2001/02 to 2013/14 have been sourced from the ONS revised MYEs.

In the **SNPP-2012** and **SNPP-2012-LDN** scenarios, future counts of deaths are specified to ensure consistency with the official projections.

In the other scenarios, a 'local' (i.e. area-specific) age-specific mortality rate (ASMR) schedule, which measures the expected mortality rates by age and sex in 2013/14 is included in the POPGROUP model assumptions. This is derived from the ONS 2012-based SNPP.

Long-term assumptions on changes in age-specific mortality rates are taken from the ONS 2012-based SNPP.

In combination with the 'population-at-risk' (i.e. the total population), the area-specific ASMR and future mortality rate assumptions provide the basis for the calculation of deaths in each year of the forecast period.

# Migration

## **Internal Migration**

In all scenarios, historical mid-year to mid-year estimates of in- and out-migration by five year age group and sex from 2001/02 to 2013/14 have been sourced from the 'components of population change' files that underpin the ONS MYEs. These internal migration flows are estimated using data from the Patient Register (PR), the National Health Service Central Register (NHSCR) and Higher Education Statistics Agency (HESA).

In the **SNPP-2012** scenario, future counts of internal migrants are specified, to ensure consistency with the official projections.

In the **SNPP-2012-LDN** scenario, future counts of internal migrants are specified that include migration uplift suggested by the GLA 2013 round **Central** scenario added to the official projections.

In the **Natural Change** scenario, internal in- and out-migration flows are set to zero for each year in the forecast period (i.e. no in- or out-migration occurs).

In the alternative trend scenarios, future internal migration flows are based on the area-specific historical migration data. In the **PG-5yr** and **PG-5yr-X** scenarios, a five year internal migration history is used (2009/10 to 2013/14). In the **PG10yr** and **PG-10yr-X** scenarios, a ten year history is used (2004/05 to 2013/14).

In the alternative trend scenarios (i.e. **PG-5yr**, **PG-5yr-X**, **PG-10yr** and **PG-10yr-X**), the relevant historical time period is used to derive the age-specific migration rate (ASMigR) schedules, which are then used to determine the future number of in- and out-migrants. In the case of internal in-migration, the ASMigR schedules are applied to an external 'reference' population (i.e. the population 'at-risk' of migrating into the area). This is different to the other components (i.e. births, deaths, internal out-migration and international migration), where the schedule of rates is applied to the area-specific population (i.e. the population 'at-risk' of migrating out of the area). The reference population used in the development of the scenarios presented in this report is the UK population.

The jobs-led scenarios (i.e. **EEFM Employed People**, **EEFM Employed People – EEFM**, **EEFM Jobs**, **Exp Jobs**, **Exp WorkEmp** and **Exp WorkEmp – EXP**) calculate their own internal migration assumptions to ensure an appropriate balance between the population and the targeted increase in the number of jobs that is defined in each year of the forecast period. A higher level of net internal migration will occur if there is insufficient population and resident labour force to meet the forecast number of jobs. In the jobs-led scenarios, the profile of internal migrants is defined by an ASMigR schedule, derived from the ONS 2012-based SNPP.

## **International Migration**

Historical mid-year to mid-year counts of immigration and emigration by 5-year age group and sex from 2001/02 to 2013/14 have been sourced from the 'components of population change' files that underpin the ONS MYEs. Any 'adjustments' made to the MYEs to account for asylum cases are included in the international migration balance.

Implied within the international migration component of change in all scenarios is an 'unattributable population change' (UPC) figure, which ONS identified within its latest mid-year estimate revisions. The POPGROUP model has assigned the UPC to international migration as it is the component with the greatest uncertainty associated with its estimation. In the '**X**' scenarios, the UPC adjustment is not included in the international migration assumptions.

In all scenarios, future international migration assumptions are defined as 'counts' of migration. In the **SNPP-2012** and **SNPP-2012-LDN** scenarios, the international in- and out-migration counts are drawn directly from the ONS 2012-based SNPP.

In the **Natural Change** scenario, the future migration counts set the in- and out-migration flows to zero for each year in the forecast period (i.e. no in- or out-migration occurs).

In the alternative trend scenarios, the international in- and out-migration counts are derived from the area-specific historical migration data. In the **PG-5yr** and **PG-5yr-X** scenarios, a five year international migration history is used (2009/10 to 2013/14). In the **PG-10yr** and **PG-10yr-X** scenarios, a ten year history is used (2004/05 to 2013/14).

In all scenarios, an ASMigR schedule of rates is derived from either a five year or ten year migration history and is used to distribute future counts by single year of age.

In the jobs-led scenarios, international migration counts are taken from the ONS 2012-based SNPP (i.e. counts are consistent with the **SNPP-2012** scenario). An ASMigR schedule of rates from the ONS 2012-based SNPP is used to distribute future counts by single year of age.

# **Households & Dwellings**

The 2011 Census defines a household as:

"one person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area."

In POPGROUP, a dwelling is defined as a unit of accommodation which can either be occupied by one household or vacant.

The household and dwelling implications of the population growth trajectory have been evaluated through the application of headship rate statistics, communal population statistics and a dwelling vacancy rate. These data assumptions have been sourced from the 2001 and 2011 Censuses and the 2012-based household projection model from the DCLG.

## **Household Headship Rates**

A household headship rate (also known as household representative rate) is the "probability of anyone in a particular demographic group being classified as being a household representative".

The household headship rates used in the POPGROUP modelling have been taken from the DCLG 2012-based household projections. The DCLG household projections are derived through the application of projected headship rates to a projection of the private household population. The methodology used by DCLG in its household projection models consists of two distinct stages:

- Stage One produces the national and local authority projections for the total number of households by sex, age-group and relationship-status group over the projection period. All Stage One output and assumptions for the 2012-based household projection model have been released by DCLG.
- Stage Two provides the detailed 'household-type' projection by age-group, controlled to the previous Stage One totals. Stage Two assumptions and output for the 2012-based model have yet to be released by DCLG.

In POPGROUP, the 2012-based headship rates are defined by age, sex and relationship status. These rates therefore determine the likelihood of person of a particular age-group, sex and

relationship status being head of a household in a particular year, given the age-sex structure of the population.

## **Communal Population Statistics**

Household projections in POPGROUP exclude the population 'not-in-households' (i.e. the communal/institutional population). These data are drawn from the DCLG 2012-based household projections, which use statistics from the 2011 Census. Examples of communal establishments include prisons, residential care homes and student halls of residence.

For ages 0–74, the number of people in each age group not-in-households is fixed throughout the forecast period. For ages 75–85+, the proportion of the population not-in-households is recorded. Therefore, the population not-in-households for ages 75–85+ varies across the forecast period depending on the size of the population.

## Vacancy Rate

The relationship between households and dwellings is modelled using a 'vacancy rate', sourced from the 2011 Census. The vacancy rate is calculated using statistics on households (occupied, second homes and vacant) and dwellings (shared and unshared).

Vacancy rates that have been applied for each of the TGSE areas are presented in the table below. The vacancy rates have been fixed throughout the forecast period. Using this vacancy rates, the 'dwelling requirement' of each household growth trajectory has been evaluated.

## Table 4.1 Vacancy Rates (Source: 2011 Census)

Area	Vacancy Rate
Basildon	1.7%
Castle Point	3.3%
Rochford	2.6%
Southend-on-Sea	5.0%
Thurrock	2.4%

# Labour Force & Jobs

Apart from in the **jobs-led** scenarios, the labour force and jobs implications of the population growth trajectory are evaluated through the application of three key data items: economic activity rates, an unemployment rate and a commuting ratio.

## **Economic Activity Rates**

## Edge Analytics Economic Activity Rates Assumptions

The level of labour force participation is recorded in the economic activity rates. Economic activity rates by five year age group (ages 16-74) and sex have been derived from 2001 and 2011 Census statistics. The 2011 Census statistics include an open-ended 65+ age categorisation, so economic activity rates for the 65–69 and 70–74 age groups have been estimated using a combination of Census 2011 tables, disaggregated using evidence from the 2001 Census.

Rates of economic activity in all five TGSE areas increased for women in all age groups between the 2001 and 2011 Censuses and in the older age groups for men

In all scenarios, Edge Analytics has made changes to the age-sex specific economic activity rates to take account of changes to the State Pension Age (SPA) and to accommodate potential changes in economic participation which might result from an ageing but healthier population in the older labour force age-groups.

The SPA for women is increasing from 60 to 65 by 2018, bringing it in line with that for men. Between December 2018 and April 2020, the SPA for both men and women will then rise to 66. Under current legislation, the SPA will be increased to 67 between 2034 and 2036 and 68 between 2044 and 2046. It has been proposed that the rise in the SPA to 67 is brought forward to 2026–2028<sup>203</sup>.

ONS published its last set of economic activity rate forecasts from a 2006 base<sup>204</sup>. These incorporated an increase in SPA for women to 65 by 2020 but this has since been altered to an accelerated transition by 2018 plus a further extension to 66 by 2020. Over the 2011–2020 period, the ONS forecasts suggested that male economic activity rates would rise by 5.6% and 11.9% in the 60-64 and 65-69 age groups respectively. Corresponding female rates would rise by 33.4% and 16.3%

Figure 4.3 ONS Labour Force Projection 2006 – Economic Activity Rates 2011-2020 (source: ONS)



% Change 2011 - 2020									
Age Sex	16-24	25-34	35-44	45-59	60-64	65-69	70-74		
Males	-3.1%	-0.8%	-0.7%	0.3%	5.6%	11.9%	-5.6%		
Females	-1.2%	1.8%	0.4%	3.9%	33.4%	16.3%	0.0%		

<sup>&</sup>lt;sup>203</sup> https://www.gov.uk/changes-state-pension

<sup>&</sup>lt;sup>204</sup> ONS January 2006, Projections of the UK labour force, 2006 to 2020 http://www.ons.gov.uk/ons/rel/lms/labour-market-trends--discontinued-/volume-114--no--1/projections-of-the-uk-labour-force--2006-to-2020.pdf

To take account of planned changes to the SPA, the following modifications have been made to the Edge Analytics economic activity rates:

- Women aged 60–64: 40% increase from 2011 to 2020.
- Women aged 65–69: 20% increase from 2011 to 2020.
- Men aged 60–64: 5% increase from 2011 to 2020.
- Men aged 65–69: 10% increase from 2011 to 2020

Note that the rates for women in the 60–64 age and 65–69 age-groups are higher than the original ONS figures, accounting for the accelerated pace of change in the SPA. No changes have been applied to other age-groups. In addition, no changes have been applied to economic activity rates beyond 2020. This is an appropriately prudent approach given the uncertainty associated with forecasting future rates of economic participation.

Given the accelerated pace of change in the female SPA and the clear trends for increased female labour force participation across all age-groups in the last decade, these 2011–2020 rate increases would appear to be relatively conservative assumptions.

# Figure 4.4 Edge Analytics economic activity rate profiles for Basildon 2011 and 2020 comparison



# Figure 4.5 Edge Analytics economic activity rate profiles for Castle Point 2011 and 2020 comparison



Figure 4.6 Edge Analytics economic activity rate profiles for Rochford 2011 and 2020 comparison



Figure 4.7 Edge Analytics economic activity rate profiles for Southend-end-Sea 2011 and 2020 comparison


# Figure 4.8 Edge Analytics economic activity rate profiles for Thurrock 2011 and 2020 comparison



#### **OBR Economic Activity Rates Assumptions**

As an alternative to Edge Analytics' assumptions on economic activity rates, adjustments to economic activity rates amongst older age cohorts (60 - 74) to align with forecasts by the Office for Budgetary Responsibility (OBR), as detailed in Appendix 3. The following adjustments have been applied over the period from 2011 to 2031 in scenarios labelled **OBR** or **OBRadj**.

	Male	Female
60 – 64	17.0%	71.0%
65 – 69	39.0%	93.0%
70 – 74	20.0%	83.0%

#### Table 4.2 OBR Age-Specific Employment Rate Forecasts 2011 – 2031

Source: OBR, 2014

#### EEFM-derived Economic Activity Rates Assumptions

As a further alternative to the Edge Analytics assumptions on economic activity rates and the OBR adjustments, in the **EEFM Employed People - EEFM** scenarios, economic activity rates have been derived directly from the EEFM. This was done in an attempt to achieve better alignment between the EEFM and the POPGROUP model in order to illustrate the implications of the different labour-force adjustments compared to those input in POPGROUP. These EEFM rates record the change in economic activity in the 16–74 year-old population that are implied by EEFM's jobs growth forecasts.

The degree to which the underlying economic activity rates change over the EEFM forecast period is illustrated below.

Aroa	Economic	Economic Activity Rate (16–74)				
Alea	2011	2014	2031	(2011–2031) (pp)		
Basildon	69.4%	72.8%	73.4%	4.03		
Castle Point	66.5%	66.7%	72.8%	6.27		
Rochford	69.1%	69.4%	71.7%	2.57		
Southend-on-Sea	69.0%	69.6%	72.2%	3.12		
Thurrock	71.6%	71.9%	75.3%	3.71		

#### Table 4.3 EEFM-derived economic activity rates

#### Experian-derived Economic Activity Rates Assumptions

As an alternative to the Edge Analytics assumptions on economic activity rates, in the **Exp WorkEmp – EXP** scenario, economic activity rates have been derived directly from the Experian forecast output. This was done in an attempt to achieve better alignment between the Experian and the POPGROUP models in order to illustrate the implications of the different labour-force adjustments compared to those input in POPGROUP. These Experian-derived rates record the change in economic activity in the 16–64 and 65+ year-old population that are implied by Experian jobs growth forecasts.

The degree to which the underlying economic activity rates change over the Experian forecast period is illustrated below.



## Figure 4.9 Experian-derived economic activity rates



## **Commuting Ratio**

The commuting ratio, together with the unemployment rate, controls the balance between the number of workers living in a district (i.e. the resident labour force) and the number of jobs available in the district.

A commuting ratio greater than 1.00 indicates that the size of the resident workforce exceeds the number of jobs available in the district, resulting in a net out-commute. A commuting ratio less than 1.00 indicates that the number of jobs in the district exceeds the size of the labour force, resulting in a net in-commute.

#### Edge Analytics Commuting Ratio

Edge Analytics has derived commuting ratios from the 2011 Census 'Travel to Work' statistics published by ONS in July 2014. Tables below show the 2011 Census commuting ratios for each of the TGSE areas and compare them against the 2001 Census values. The 2011 Census commuting ratios have been fixed throughout the forecast period.

#### Table 4.4 Basildon 2001 and 2011 Census Commuting Ratio Comparison

<b>Commuting Ratio</b>	a/b	1.01	1.00
Jobs	b	76,703	82,827
Workers	а	77,771	83,006
Basildon		2001 Census	2011 Census

Note: 2001 data from Census Table *T101 – UK Travel Flows* ; 2011 data from Census Table *WU02UK - Location of usual residence and place of work by age* .

#### Table 4.5 Castle Point 2001 and 2011 Census Commuting Ratio Comparison

Castle Point		2001 Census	2011 Census
Workers	а	41,045	41,443
Jobs	b	21,633	25,391
Commuting Ratio	a/b	1.90	1.63

Note: 2001 data from Census Table *T101 – UK Travel Flows*; 2011 data from Census Table *WU02UK - Location of usual residence and place of work by age*.

#### Table 4.6 Rochford 2001 and 2011 Census Commuting Ratio Comparison

Rochford		2001 Census	2011 Census
Workers	а	37,749	40,662
Jobs	b	22,905	26,665
Commuting Ratio	a/b	1.65	1.52

Note: 2001 data from Census Table *T101 – UK Travel Flows*; 2011 data from Census Table *WU02UK - Location of usual residence and place of work by age*.

#### Table 4.7 Southend-on-Sea 2001 and 2011 Census Commuting Ratio Comparison

Southend-on-Sea		2001 Census	2011 Census
Workers	а	70,099	81,339
Jobs	b	63,209	72,096
Commuting Ratio	a/b	1.11	1.13

Note: 2001 data from Census Table *T101 – UK Travel Flows*; 2011 data from Census Table *WU02UK - Location of usual residence and place of work by age*.

Commuting Ratio	a/b	1.21	1.21
Jobs	b	57,320	64,211
Workers	а	69,448	77,420
Thurrock		2001 Census	2011 Census

#### Table 4.8 Thurrock 2001 and 2011 Census Commuting Ratio Comparison

Note: 2001 data from Census Table *T101 – UK Travel Flows*; 2011 data from Census Table *WU02UK - Location of usual residence and place of work by age*.

#### EEFM-derived Commuting Ratios

As an alternative to the Edge Analytics assumptions on commuting, in the **EEFM Employed People - EEFM** scenario, commuting ratios have been derived directly from the EEFM. In 2011, the EEFM derived commuting ratio is directly comparable with the 2011 Census commuting ratio for each of the TGSE areas. However, in subsequent years, the commuting ratio varies to accommodate anticipated jobs growth. The degree to which the underlying commuting ratios change over the EEFM forecast period is illustrated below.

#### Table 4.9 EEFM-derived Commuting Ratios

A.r.o.o.	Cor	Commuting Ratios				
Alea	2011	2014	2031	(2011–2031)		
Basildon	1.00	0.99	1.00	0.00		
Castle Point	1.63	1.41	1.49	-0.14		
Rochford	1.53	1.43	1.46	-0.06		
Southend-on-Sea	1.13	1.07	1.08	-0.05		
Thurrock	1.21	1.22	1.16	-0.05		

## Experian-derived Commuting Ratios

As an alternative to the Edge Analytics assumptions on commuting, in the **Exp WorkEmp – EXP** scenario, commuting ratios have been derived directly from the Experian forecast output. The degree to which the underlying commuting ratios change over the Experian forecast period is illustrated below.

Aroo Nomo	Co	mmuting Ra	Change	
Alea Name	2011	2014	2035	(2011–2035)
Basildon	0.99	0.94	0.99	0.00
Castle Point	1.66	1.69	1.81	0.15
Rochford	1.49	1.45	1.55	0.06
Southend-on-Sea	0.95	0.90	0.95	0.00
Thurrock	1.15	1.14	1.19	0.04

## Table 4.10 Experian-derived Commuting Ratios

#### **Unemployment Rate**

The unemployment rate, together with the commuting ratio, controls the balance between the size of the labour force and the number of jobs available within an area.

#### Edge Analytics Unemployment Rates

In all scenarios, historical unemployment rates are the ONS modelled unemployment rates. They have been defined until 2014. From 2014, the unemployment rates reduce to a prerecession (2004-2007) average by 2020 and remains fixed thereafter.

#### Table 4.11 ONS modelled unemployment rates

	Unemployment Rate								Av. Pre-			
Alea Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	(2004-2007)
Basildon	4.3%	4.7%	4.9%	4.2%	5.3%	7.7%	8.0%	7.7%	7.8%	8.1%	6.3%	4.5%
Castle Point	3.1%	3.4%	4.0%	3.6%	4.3%	6.9%	6.8%	7.0%	7.3%	6.1%	5.5%	3.5%
Rochford	3.0%	3.2%	3.6%	3.7%	3.8%	5.3%	4.6%	5.1%	5.4%	5.1%	4.4%	3.4%
Southend-on-Sea	5.2%	5.1%	5.8%	5.7%	5.8%	7.4%	7.5%	8.3%	7.7%	7.2%	7.5%	5.5%
Thurrock	3.9%	4.5%	5.0%	4.3%	5.8%	7.8%	8.2%	9.2%	8.3%	7.3%	6.6%	4.4%

#### EEFM-derived Unemployment Rates

As an alternative to the Edge Analytics assumptions on unemployment, in the **EEFM Employed People - EEFM** scenario, unemployment rates have been derived directly from the EEFM. The degree to which the underlying unemployment rates change over the EEFM forecast period is illustrated below.

#### Table 4.12 EEFM-derived Unemployment Rates

Area	Uner	mployment F	Change (2011_2031)	
Area	2011	2014	2031	(pp)
Basildon	4.9%	3.4%	2.7%	-2.17
Castle Point	3.6%	2.2%	2.1%	-1.52
Rochford	2.6%	1.5%	1.6%	-1.02
Southend-on-Sea	5.8%	3.8%	3.4%	-2.40
Thurrock	5.2%	3.5%	2.6%	-2.66

#### Experian-derived Unemployment Rates

As an alternative to the Edge Analytics assumptions on unemployment, in the **Exp WorkEmp – EXP** scenario, unemployment rates have been derived directly from the Experian forecast output. The degree to which the underlying unemployment rates change over the Experian forecast period is illustrated below.

Aroo Nomo	Uner	Change		
Area Name	2011	2014	2035	(2011–2035) (pp)
Basildon	7.5%	6.2%	5.1%	-2.38
Castle Point	7.0%	5.0%	4.8%	-2.20
Rochford	5.1%	4.3%	3.4%	-1.64
Southend-on-Sea	8.4%	7.3%	6.8%	-1.58
Thurrock	8.8%	6.5%	6.0%	-2.88

## Table 4.13 Experian-derived Unemployment Rates

# **Appendix 5: Headship Rates by Age Band**

The 2012-based sub-national household projections (SNHP) convert the projected population into households through the application of household representative rates, or headship rates. These rates show the propensity of an individual to be a household representative.

The following charts show 2012 headship rates for different five year age bands in each local authority, with the vertical axis showing the likelihood of an individual being a household representative and the horizontal axis showing how this is projected to change over the period to 2037. Historic data is also shown, alongside national headship rates.



#### Basildon and England: DCLG 2012-based Headship Rates



#### Castle Point and England: DCLG 2012-based Headship Rates



#### Rochford and England: DCLG 2012-based Headship Rates



#### Southend-on-Sea and England: DCLG 2012-based Headship Rates



#### Thurrock and England: DCLG 2012-based Headship Rates

# Appendix 6: Needs for Different Types of Housing – Authority Tables

# **Current Housing Trends**

As stated in section 7, it is important to understand the key housing trends and characteristics of different groups, including families, younger people and the older population.

## Age Profile

The current tenure split of households, based on the age of HRP, within each of the TGSE authorities is set out in the following tables.

#### Figure 6.1 Tenure by Age of HRP in Basildon 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented or living rent free
16 to 34	3.5%	39.1%	30.8%	26.6%
35 to 49	8.3%	59.0%	20.2%	12.6%
50 to 64	34.1%	41.4%	18.2%	6.4%
65 and over	65.5%	8.5%	22.1%	3.9%
All ages	28.9%	38.0%	22.0%	11.1%

Source: Census 2011

## Figure 6.2 Tenure by Age of HRP in Castle Point 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented or living rent free
16 to 34	4.9%	50.6%	6.3%	38.3%
35 to 49	9.8%	68.4%	6.0%	15.9%
50 to 64	43.2%	45.4%	4.5%	7.0%
65 and over	80.4%	9.3%	5.3%	5.0%
All ages	43.1%	39.8%	5.3%	11.8%

Fiaure 6.3	Tenure by Age of HRP in Rochford 2	2011
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	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented or living rent free
16 to 34	4.5%	54.2%	9.1%	32.2%
35 to 49	10.1%	72.2%	6.1%	11.6%
50 to 64	43.9%	44.7%	5.8%	5.6%
65 and over	78.3%	7.8%	10.1%	3.8%
All ages	41.5%	41.6%	7.6%	9.3%

Source: Census 2011

## Figure 6.4 Tenure by Age of HRP in Southend-on-Sea 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented or living rent free
16 to 34	3.4%	33.6%	11.7%	51.3%
35 to 49	8.4%	54.3%	11.1%	26.2%
50 to 64	33.4%	40.3%	11.2%	15.1%
65 and over	69.5%	9.0%	12.2%	9.4%
All ages	30.7%	34.8%	11.5%	22.9%

Source: Census 2011

# Figure 6.5 Tenure by Age of HRP in Thurrock 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented or living rent free
16 to 34	2.7%	42.4%	19.4%	35.4%
35 to 49	7.2%	61.3%	15.9%	15.6%
50 to 64	33.8%	41.8%	17.0%	7.4%
65 and over	64.2%	7.9%	23.3%	4.7%
All ages	25.5%	41.2%	18.4%	14.9%

## Household Types

The following tables show the size of property occupied by different household typologies within each of the TGSE authorities.

	Bedrooms				
Household Composition	1	2	3	4	5+
One person	31%	32%	30%	7%	1%
One family all aged 65+	6%	26%	46%	19%	2%
Married/same-sex civil partnership couple with no children	5%	22%	45%	24%	3%
Married/same-sex civil partnership couple with dependent children	1%	12%	48%	32%	7%
Married/same-sex civil partnership couple with non- dependent children	0%	11%	50%	34%	6%
Cohabiting couple with no children	18%	38%	33%	10%	1%
Cohabiting couple with dependent children	4%	29%	50%	15%	3%
Cohabiting couple with non-dependent children	1%	16%	59%	22%	2%
Lone parent with dependent children	5%	32%	49%	12%	2%
Lone parent with non-dependent children	3%	27%	54%	14%	2%
Other household types	4%	22%	46%	21%	7%
All categories	12%	25%	42%	18%	3%

Figure 6.6 Number of Bedrooms by Household Type in Basildon 2011

# Figure 6.7 Number of Bedrooms by Household Type in Castle Point 2011

	Bedrooms				
Household Composition	1	2	3	4	5+
One person	24%	41%	28%	6%	1%
One family all aged 65+	8%	39%	39%	14%	1%
Married/same-sex civil partnership couple with no children	5%	26%	43%	22%	3%
Married/same-sex civil partnership couple with dependent children	1%	9%	48%	37%	6%
Married/same-sex civil partnership couple with non- dependent children	1%	11%	50%	33%	6%
Cohabiting couple with no children	15%	38%	35%	11%	1%
Cohabiting couple with dependent children	3%	22%	51%	20%	4%
Cohabiting couple with non-dependent children	3%	22%	46%	27%	2%
Lone parent with dependent children	5%	29%	49%	14%	2%
Lone parent with non-dependent children	3%	30%	50%	15%	2%
Other household types	3%	19%	40%	28%	10%
All categories	9%	28%	40%	19%	3%

## Figure 6.8 Number of Bedrooms by Household Type in Rochford 2011

	Bedrooms				
Household Composition	1	2	3	4	5+
One person	24%	38%	30%	7%	1%
One family all aged 65+	6%	34%	42%	17%	2%
Married/same-sex civil partnership couple with no children	4%	24%	44%	25%	4%
Married/same-sex civil partnership couple with dependent children	0%	8%	46%	37%	8%
Married/same-sex civil partnership couple with non- dependent children	1%	11%	49%	33%	6%
Cohabiting couple with no children	13%	37%	38%	11%	1%
Cohabiting couple with dependent children	3%	26%	48%	20%	4%
Cohabiting couple with non-dependent children	3%	19%	48%	26%	4%
Lone parent with dependent children	4%	32%	45%	16%	3%
Lone parent with non-dependent children	2%	31%	49%	15%	2%
Other household types	3%	19%	40%	26%	12%
All categories	8%	26%	41%	21%	4%

# Figure 6.9 Number of Bedrooms by Household Type in Southend-on-Sea 2011

	Bedrooms				
Household Composition	1	2	3	4	5+
One person	38%	34%	22%	5%	1%
One family all aged 65+	9%	35%	39%	15%	2%
Married/same-sex civil partnership couple with no children	9%	28%	42%	18%	4%
Married/same-sex civil partnership couple with dependent children	2%	14%	49%	27%	8%
Married/same-sex civil partnership couple with non- dependent children	1%	14%	51%	28%	6%
Cohabiting couple with no children	26%	40%	27%	6%	1%
Cohabiting couple with dependent children	6%	32%	46%	14%	3%
Cohabiting couple with non-dependent children	3%	25%	51%	17%	4%
Lone parent with dependent children	6%	40%	41%	11%	2%
Lone parent with non-dependent children	5%	35%	46%	12%	2%
Other household types	8%	29%	37%	17%	8%
All categories	17%	30%	36%	13%	4%

## Figure 6.10 Number of Bedrooms by Household Type in Thurrock 2011

	Bedrooms				
Household Composition	1	2	3	4	5+
One person	31%	21%	23%	2%	1%
One family all aged 65+	6%	16%	39%	6%	1%
Married/same-sex civil partnership couple with no children	7%	23%	50%	11%	2%
Married/same-sex civil partnership couple with dependent children	2%	16%	60%	21%	5%
Married/same-sex civil partnership couple with non- dependent children	1%	11%	76%	21%	4%
Cohabiting couple with no children	19%	31%	27%	3%	1%
Cohabiting couple with dependent children	4%	32%	55%	10%	2%
Cohabiting couple with non-dependent children	1%	20%	76%	12%	2%
Lone parent with dependent children	5%	34%	47%	7%	1%
Lone parent with non-dependent children	3%	19%	48%	8%	1%
Other household types	6%	21%	43%	14%	5%
All categories	12%	22%	41%	9%	2%

Source: Census 2011

The following tables show the tenure of property occupied by different household typologies within each of the TGSE authorities.

	Owned outright	Owned with mortgage, loan or shared ownership	Social rented	Private rented	Living rent free
One person	34%	22%	30%	11%	2%
One family all aged 65+	78%	8%	12%	1%	1%
Married/same-sex civil partnership couple with no children	41%	44%	9%	5%	0%
Married/same-sex civil partnership couple with dependent children	9%	72%	12%	7%	0%
Married/same-sex civil partnership couple with non- dependent children	38%	48%	12%	2%	0%
Cohabiting couple with no children	12%	55%	13%	20%	1%
Cohabiting couple with dependent children	3%	47%	33%	16%	0%
Cohabiting couple with non-dependent children	20%	48%	26%	5%	1%
Lone parent with dependent children	5%	25%	47%	23%	1%
Lone parent with non-dependent children	32%	30%	31%	7%	0%
Other household types	21%	41%	19%	18%	1%
All categories	29%	38%	22%	10%	1%

# Figure 6.11 Tenure by Household Type in Basildon 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented	Living rent free
One person	56%	20%	9%	12%	2%
One family all aged 65+	87%	8%	2%	2%	1%
Married/same-sex civil partnership couple with no children	52%	41%	2%	4%	0%
Married/same-sex civil partnership couple with dependent children	10%	80%	3%	7%	0%
Married/same-sex civil partnership couple with non- dependent children	44%	50%	3%	2%	0%
Cohabiting couple with no children	20%	58%	2%	20%	1%
Cohabiting couple with dependent children	6%	60%	6%	27%	1%
Cohabiting couple with non-dependent children	20%	64%	8%	7%	1%
Lone parent with dependent children	7%	35%	13%	44%	1%
Lone parent with non-dependent children	49%	32%	8%	10%	1%
Other household types	29%	49%	5%	15%	1%
All categories	43%	40%	5%	11%	1%

# Figure 6.12 Tenure by Household Type in Castle Point 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented	Living rent free
One person	55%	20%	14%	9%	2%
One family all aged 65+	86%	7%	5%	1%	1%
Married/same-sex civil partnership couple with no children	50%	43%	3%	4%	0%
Married/same-sex civil partnership couple with dependent children	11%	80%	3%	6%	0%
Married/same-sex civil partnership couple with non- dependent children	46%	48%	3%	2%	0%
Cohabiting couple with no children	18%	57%	4%	20%	1%
Cohabiting couple with dependent children	6%	60%	11%	21%	1%
Cohabiting couple with non-dependent children	22%	59%	9%	9%	0%
Lone parent with dependent children	8%	37%	22%	32%	1%
Lone parent with non-dependent children	51%	30%	12%	6%	0%
Other household types	30%	49%	7%	13%	1%
All categories	41%	42%	8%	8%	1%

# Figure 6.13 Tenure by Household Type in Rochford 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented	Living rent free
One person	38%	21%	17%	24%	1%
One family all aged 65+	81%	9%	5%	4%	1%
Married/same-sex civil partnership couple with no children	41%	43%	5%	11%	1%
Married/same-sex civil partnership couple with dependent children	9%	69%	7%	15%	0%
Married/same-sex civil partnership couple with non- dependent children	41%	46%	7%	6%	0%
Cohabiting couple with no children	12%	47%	5%	35%	1%
Cohabiting couple with dependent children	5%	46%	13%	36%	0%
Cohabiting couple with non-dependent children	25%	47%	13%	14%	0%
Lone parent with dependent children	6%	24%	23%	47%	1%
Lone parent with non-dependent children	36%	29%	18%	17%	1%
Other household types	19%	34%	8%	37%	1%
All categories	31%	35%	12%	22%	1%

# Figure 6.14 Tenure by Household Type in Southend-on-Sea 2011

	Owned outright	Owned with mortgage, Ioan or shared ownership	Social rented	Private rented	Living rent free
One person	32%	26%	26%	13%	2%
One family all aged 65+	79%	6%	13%	2%	1%
Married/same-sex civil partnership couple with no children	39%	44%	9%	7%	0%
Married/same-sex civil partnership couple with dependent children	7%	72%	10%	10%	0%
Married/same-sex civil partnership couple with non- dependent children	38%	48%	11%	3%	0%
Cohabiting couple with no children	10%	54%	9%	27%	1%
Cohabiting couple with dependent children	3%	52%	24%	20%	0%
Cohabiting couple with non-dependent children	17%	49%	26%	7%	1%
Lone parent with dependent children	5%	24%	38%	32%	1%
Lone parent with non-dependent children	33%	31%	26%	9%	1%
Other household types	17%	41%	14%	27%	1%
All categories	25%	41%	18%	14%	1%

# Figure 6.15 Tenure by Household Type in Thurrock 2011

# Appendix 7: Affordable Housing Need by Size of Property

In section 6, Figure 6.14 considers the size of affordable housing needed across TGSE. This assessment is replicated in this appendix for each local authority, based on data provided by the Councils with secondary data where necessary.

Figures presented may not sum due to rounding, but provide an indicative estimate of the scale of need for different sizes of affordable housing.

		1 bed	2 beds	3 beds	4+ beds	Total			
Stag	Stage 1 – Current Housing Need								
1.1	Existing affordable housing tenants in need	171	198	35	22	426			
1.2	Other groups on Housing Register	296	172	15	11	494			
1.3	Total current housing need (gross) (1.1 + 1.2)	467	370	50	33	920			
Stag	ge 2 – Affordable Housing Supply								
2.1	Affordable dwellings occupied by households in need	171	198	35	22	426			
2.2	Surplus stock	6	1	0	0	7			
2.3	Committed supply of new affordable housing	56	99	50	15	220			
2.4	Units to be taken out of management	69	70	96	13	247			
2.5	Total affordable housing stock available (2.1 + 2.2 + 2.3 – 2.4)	164	229	-11	-24	406			
Stage 3 – Historically Accumulated 'Backlog' Need (net annual)									
3.1	Shortfall in affordable housing to meet current 'backlog' need (1.5 – 2.5 / 5)	61	28	12	2	103			
	%	59%	27%	12%	2%	_			

		1 bed	2 beds	3 beds	4+ beds	Total			
Stag	je 4 – Future Housing Need (annual)								
4.2	Number of newly forming households unable to rent in the open market	182	158	199	33	571			
4.3	Existing households falling into need	244	37	61	11	353			
4.4	Total newly arising need (4.2 + 4.3)	425	195	260	43	924			
Stag	e 5 – Affordable Housing Supply								
5.1	Lettings excluding transfers	496	99	110	14	720			
5.2	Annual supply of shared ownership units available for sub-market sale	2	11	24	15	53			
5.3	Annual supply of affordable housing (5.2 + 5.2)	498	110	135	29	773			
Stag	ge 6 – Annual Net New Need								
6.1	Annual net new need (4.4 – 5.3)	-73	85	126	14	152			
	%	-48%	56%	83%	9%	_			
Stag	Stage 7 – Total Affordable Housing Need (net annual)								
7.1	Shortfall in affordable housing to meet current 'backlog' need (3.1)	61	28	12	2	103			
7.2	Annual net new need (6.1)	-73	85	126	14	152			
7.3	Net annual affordable housing need (3.1 + 6.1)	-12	113	138	16	254			
	%	-5%	44%	54%	6%	-			

Figure 7.2	Affordable Housing	Need by	y Size – C	Castle Point
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		1 bed	2 beds	3 beds	4+ beds	Total			
Stag	Stage 1 – Current Housing Need								
1.1	Existing affordable housing tenants in need	81	47	10	7	145			
1.2	Other groups on Housing Register	234	95	77	11	417			
1.3	Total current housing need (gross) (1.1 + 1.2)	315	142	87	18	562			
Stag	e 2 – Affordable Housing Supply								
2.1	Affordable dwellings occupied by households in need	81	47	10	7	145			
2.2	Surplus stock	2	3	1	0	6			
2.3	Committed supply of new affordable housing	27	57	15	0	99			
2.4	Units to be taken out of management	0	0	0	0	0			
2.5	Total affordable housing stock available (2.1 + 2.2 + 2.3 – 2.4)	110	107	26	7	250			
Stage 3 – Historically Accumulated 'Backlog' Need (net annual)									
3.1	Shortfall in affordable housing to meet current 'backlog' need (1.5 – 2.5 / 5)	41	7	12	2	62			
	%	66%	11%	19%	3%	_			

		1 bed	2 beds	3 beds	4+ beds	Total		
Stag	je 4 – Future Housing Need (annual)							
4.2	Number of newly forming households unable to rent in the open market	87	62	80	5	233		
4.3	Existing households falling into need	51	26	21	4	103		
4.4	Total newly arising need (4.2 + 4.3)	137	88	101	9	336		
Stag	e 5 – Affordable Housing Supply							
5.1	Lettings excluding transfers	37	27	35	2	101		
5.2	Annual supply of shared ownership units available for sub-market sale	0	0	0	0	0		
5.3	Annual supply of affordable housing (5.2 + 5.2)	37	27	35	2	101		
Stag	je 6 – Annual Net New Need							
6.1	Annual net new need (4.4 – 5.3)	100	62	67	7	236		
	%	42%	26%	28%	3%	_		
Stage 7 – Total Affordable Housing Need (net annual)								
7.1	Shortfall in affordable housing to meet current 'backlog' need (3.1)	41	7	12	2	62		
7.2	Annual net new need (6.1)	100	62	67	7	236		
7.3	Net annual affordable housing need (3.1 + 6.1)	141	69	79	9	298		
	%	47%	23%	26%	3%	-		

rigule 1.5 Anoluable housing need by Size – Rocino	Figure 7.3	Affordable Housing	y Need by Size – Rochto
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		1 bed	2 beds	3 beds	4+ beds	Total			
Stag	Stage 1 – Current Housing Need								
1.1	Existing affordable housing tenants in need	49	25	24	2	100			
1.2	Other groups on Housing Register	220	177	51	7	455			
1.3	Total current housing need (gross) (1.1 + 1.2)	269	202	75	9	555			
Stag	e 2 – Affordable Housing Supply								
2.1	Affordable dwellings occupied by households in need	49	25	24	2	100			
2.2	Surplus stock	0	0	0	0	0			
2.3	Committed supply of new affordable housing	38	42	77	4	161			
2.4	Units to be taken out of management	0	0	0	0	0			
2.5	Total affordable housing stock available (2.1 + 2.2 + 2.3 – 2.4)	87	67	101	6	261			
Stage 3 – Historically Accumulated 'Backlog' Need (net annual)									
3.1	Shortfall in affordable housing to meet current 'backlog' need (1.5 – 2.5 / 5)	36	27	-5	1	59			
	%	61%	46%	-8%	2%	-			

		1 bed	2 beds	3 beds	4+ beds	Total
Stag	je 4 – Future Housing Need (annual)					
4.2	Number of newly forming households unable to rent in the open market	103	54	56	5	217
4.3	Existing households falling into need	70	40	12	2	125
4.4	Total newly arising need (4.2 + 4.3)	173	94	69	7	342
Stag	e 5 – Affordable Housing Supply					
5.1	Lettings excluding transfers	67	48	14	3	132
5.2	Annual supply of shared ownership units available for sub-market sale	0	0	0	0	0
5.3	Annual supply of affordable housing (5.2 + 5.2)	67	48	14	3	132
Stag	ge 6 – Annual Net New Need					
6.1	Annual net new need (4.4 – 5.3)	106	46	54	4	210
	%	50%	22%	26%	2%	_
Stag	je 7 – Total Affordable Housing Need (net annual)					
7.1	Shortfall in affordable housing to meet current 'backlog' need (3.1)	36	27	-5	1	59
7.2	Annual net new need (6.1)	106	46	54	4	210
7.3	Net annual affordable housing need (3.1 + 6.1)	142	73	49	4	268
	%	53%	27%	18%	2%	_

Figure 7.4	Affordable Housing	g Need by	y Size –	Southend-on	-Sea
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		1 bed	2 beds	3 beds	4+ beds	Total	
Stage 1 – Current Housing Need							
1.1	Existing affordable housing tenants in need	161	100	87	18	366	
1.2	Other groups on Housing Register	347	240	147	22	756	
1.3	Total current housing need (gross) (1.1 + 1.2)	508	340	234	40	1,122	
Stag	e 2 – Affordable Housing Supply						
2.1	Affordable dwellings occupied by households in need	161	100	87	18	366	
2.2	Surplus stock	11	2	2	0	15	
2.3	Committed supply of new affordable housing	140	134	67	14	355	
2.4	Units to be taken out of management	0	0	0	0	0	
2.5	Total affordable housing stock available (2.1 + 2.2 + 2.3 – 2.4)	312	236	156	32	736	
Stage 3 – Historically Accumulated 'Backlog' Need (net annual)							
3.1	Shortfall in affordable housing to meet current 'backlog' need (1.5 – 2.5 / 5)	39	21	16	2	77	
	%	51%	27%	21%	3%	-	

		1 bed	2 beds	3 beds	4+ beds	Total
Stag	je 4 – Future Housing Need (annual)					
4.2	Number of newly forming households unable to rent in the open market	224	128	136	23	511
4.3	Existing households falling into need	289	123	81	7	500
4.4	Total newly arising need (4.2 + 4.3)	514	250	217	30	1,011
Stag	e 5 – Affordable Housing Supply					
5.1	Lettings excluding transfers	261	95	64	4	425
5.2	Annual supply of shared ownership units available for sub-market sale	1	3	6	3	13
5.3	Annual supply of affordable housing (5.2 + 5.2)	262	98	70	8	438
Stag	je 6 – Annual Net New Need					
6.1	Annual net new need (4.4 – 5.3)	252	152	147	22	573
	%	44%	27%	26%	4%	_
Stag	je 7 – Total Affordable Housing Need (net annual)					
7.1	Shortfall in affordable housing to meet current 'backlog' need (3.1)	39	21	16	2	77
7.2	Annual net new need (6.1)	252	152	147	22	573
7.3	Net annual affordable housing need (3.1 + 6.1)	291	173	163	23	650
	%	45%	27%	25%	4%	-

rigulo no natoradolo nodoling nood by oizo inanoo	Figure 7.5	Affordable Housing	Need by Size -	· Thurrock
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		1 bed	2 beds	3 beds	4+ beds	Total	
Stage 1 – Current Housing Need							
1.1	Existing affordable housing tenants in need	181	123	36	8	348	
1.2	Other groups on Housing Register	183	125	37	8	353	
1.3	Total current housing need (gross) (1.1 + 1.2)	364	247	73	16	701	
Stag	e 2 – Affordable Housing Supply						
2.1	Affordable dwellings occupied by households in need	181	123	36	8	348	
2.2	Surplus stock	1	1	8	0	10	
2.3	Committed supply of new affordable housing	133	463	570	131	1,297	
2.4	Units to be taken out of management	0	0	0	0	0	
2.5	Total affordable housing stock available (2.1 + 2.2 + 2.3 – 2.4)	315	587	614	139	1,655	
Stage 3 – Historically Accumulated 'Backlog' Need (net annual)							
3.1	Shortfall in affordable housing to meet current 'backlog' need (1.5 – 2.5 / 5)	10	-68	-108	-25	-191	
	%	-5%	36%	57%	13%	-	

		1 bed	2 beds	3 beds	4+ beds	Total
Stag	ge 4 – Future Housing Need (annual)					
4.2	Number of newly forming households unable to rent in the open market	180	160	259	20	618
4.3	Existing households falling into need	225	166	207	14	612
4.4	Total newly arising need (4.2 + 4.3)	405	325	466	34	1,230
Stag	e 5 – Affordable Housing Supply					
5.1	Lettings excluding transfers	227	167	208	14	616
5.2	Annual supply of shared ownership units available for sub-market sale	1	4	9	3	16
5.3	Annual supply of affordable housing (5.2 + 5.2)	228	171	217	17	632
Stag	je 6 – Annual Net New Need					
6.1	Annual net new need (4.4 – 5.3)	177	155	249	17	597
	%	30%	26%	42%	3%	_
Stag	ge 7 – Total Affordable Housing Need (net annual)					
7.1	Shortfall in affordable housing to meet current 'backlog' need (3.1)	10	-68	-108	-25	-191
7.2	Annual net new need (6.1)	177	155	249	17	597
7.3	Net annual affordable housing need (3.1 + 6.1)	187	87	140	-8	406
	%	46%	21%	35%	-2%	-
## **Appendix 8: Phasing of Housing Need**

	Lower end of OAN range SNPP London	Upper end of OAN range <b>Experian (People)</b>
TGSE		
2014 – 2019	17,550	13,558
2019 – 2024	18,502	21,446
2024 – 2029	15,413	20,148
2029 – 2037	23,791	30,958
2014 – 2037	75,256	86,109
Average per annum	3,272	3,744
Basildon		
2014 – 2019	4,115	3,459
2019 – 2024	4,263	4,893
2024 – 2029	3,551	4,390
2029 – 2037	5,620	6,515
2014 – 2037	17,549	19,256
Average per annum	763	837
Castle Point		
2014 – 2019	1,889	1,462
2019 – 2024	1,975	2,751
2024 – 2029	1,508	2,244
2029 – 2037	2,116	2,971
2014 – 2037	7,487	9,428
Average per annum	326	410
Rochford		
2014 – 2019	1,820	1,668
2019 – 2024	1,860	2,427
2024 – 2029	1,423	2,037
2029 – 2037	2,070	2,888
2014 – 2037	7,173	9,020
Average per annum	312	392

Southend-on-Sea		
2014 – 2019	5,024	3,708
2019 – 2024	5,330	6,296
2024 – 2029	4,520	6,237
2029 – 2037	7,035	9,791
2014 – 2037	21,910	26,031
Average per annum	953	1,132
Thurrock		
2014 – 2019	4,701	3,261
2019 – 2024	5,074	5,080
2024 – 2029	4,411	5,239
0000 0007		
2029 – 2037	6,950	8,793
2029 – 2037 2014 – 2037	6,950 <b>21,136</b>	8,793 <b>22,373</b>

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