



METHODOLOGY NOTE

Population and Dwelling Stock Estimates,
2011-2015, and

2015-Based Population and Dwelling Stock
Forecasts, 2015-2036

JULY 2017

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INTRODUCTION

This methodology note supports the mid-2011 to mid-2015 population and dwelling stock estimates and the 2015-based population and dwelling stock forecasts for Cambridgeshire and Peterborough produced by Cambridgeshire County Council.

Figures for parishes and wards have all been rounded to the nearest 10 and may not add to district totals.

Due to the changes in methodology adopted from mid-2011, comparisons with data from previous years should be undertaken with some measure of caution.

Fenland and Peterborough were subject to boundary changes in 2015 and 2016 respectively. Population and dwelling stock estimates and forecasts have been produced for the new wards, based on the best available information at the time. 2017 boundary changes are not included.

MID-2011 TO MID-2015 POPULATION AND DWELLING STOCK ESTIMATES

As part of the production of the mid-2014 and 2015 population and dwelling stock estimates Cambridgeshire County Council undertook a review of its methodology. Changes to administrative data sources, most notably the move to individual electoral registration in 2014, along with some particular data access issues, warranted this review. A wide range of data sources was considered and used to provide the resulting set of population and dwelling stock estimates. The estimates were also re-based back to Census 2011 in order to provide, for the first time, a mid-2011 set of population and dwelling stock estimates. As well as producing the mid-2014 and 2015 population and dwelling stock estimates, a revised set of population and dwelling stock estimates for mid-2011 to mid-2013, using a consistent set of data sources and methodology, has been produced.

1) Population Estimates

The total population figures are estimates of the usual resident population. The definition of the resident population used for our mid-year estimates is the same as that used in the 2011 Census as all students (including school boarders) are counted as resident at their term-time address. The population estimates include persons living in communal establishments as well as those in private households.

Method

Cambridgeshire County Council has produced a revised set of population estimates for mid-2011 to mid-2015. As part of this process Cambridgeshire County Council compared the Census 2011 results with the population data provided by alternative sources, including health statistics, school rolls and electoral registers, to establish a mid-2011 set of population estimates. The mid-2011 population estimates therefore not only include the change that has occurred due to the time lapse between

the date of the Census and mid-2011, but in some wards (notably in some urban wards) may also address an element of Census undercount. The population estimates have then been carried forward using a consistent set of data sources and methodology to produce a set of mid-year estimates to mid-2015.

The sources used to compile the estimates cover the whole population age range: electoral registers and health service statistics for the adult population; child benefit data, school rolls and health service statistics for the school-aged population and child benefit data and health service statistics for the pre-school population. Additional sources are used to monitor groups for which coverage is otherwise incomplete or uncertain.

Using electoral roll data to produce reliable population estimates has long been recognised to have limitations, associated with the compilation of the electoral register. At intervals there is a tidying up process whereby the names of people who have died or moved away are removed from the electoral register and attempts are made to increase the level of registration of 17 year olds and other sub-groups of the population. Changes also occur in the general practice of canvassing for the electoral roll which can impact consistency of responses. The electoral register can be a poor indicator of changes in numbers of service personnel and their families living in an area. These issues were compounded with the 2014 electoral roll data, as the transitional impact of the implementation of individual electoral registration in 2014 was highlighted. As an example to illustrate this, the total on the electoral roll for Peterborough City Council in December 2014 at 135,350, was more than 1,300 lower than the total on the electoral roll in February 2014, and almost 200 lower than those on the register at December 2012. Consequently, it was recognised that changes in a particular area may occur in the number registered to vote that appear inconsistent with other indicators such as the number of new housing completions. The population estimates for mid-2011 to mid-2015 have been produced with reference to the electoral register data, along with consideration of other data sets including health service statistics and housing completions data. Additional sources are used to monitor groups for which coverage is otherwise incomplete or uncertain. These include data sets on armed forces populations, higher education establishments, independent schools and other institutions such as nursing and residential homes and prisons.

The population estimates are only as reliable as the sources and methods used to produce them. Certain parishes and wards, particularly those with large numbers of armed forces or students, are more difficult to estimate in terms of population size and figures are also likely to fluctuate more. As a general rule, the longer the period over which population changes are analysed, and the larger the settlement, the more reliable the results are likely to be. Particular care should be taken in using the figures for areas:

Areas with large numbers of armed forces and their families – with the closure of several bases there are much fewer armed forces personnel in the county. The electoral register is a poor indicator of changes in numbers of service personnel and their families living in an area. Low registration levels reflect high turnover among those entitled to vote. In addition, American service personnel and their families are not entitled to vote so changes at the USAF bases are not recorded on the electoral register. An annual survey of armed forces attempts to monitor the changes by direct contact with bases. This together with information from the Ministry of Defence is used to adjust the estimates

where it is clear that our usual sources give a poor indication of change. Unfortunately, this source is itself often incomplete, particularly with regard to families of armed forces and those living in accommodation off the base.

Areas with large numbers of students - experience suggests that many students, especially those living in privately rented accommodation, are not entered on the electoral register. Students from overseas may not be eligible for registration. Figures from educational establishments help in recording changes in the student population not fully covered by electoral roll change.

2) Dwelling Stock Estimates

Estimates of dwelling stock relate to the number of self-contained residential units whereby, if there is more than one separate area of living accommodation within a property, each is counted separately. Vacant properties, second homes and holiday homes are included, as are non-permanent dwellings, such as caravans and houseboats (where these are used as dwellings).

Method

The 2011 Census provided a count for the number of dwellings by parish and urban ward, and these form the basis for the mid-year estimates. Estimates have been calculated using housing completions data (compiled by Cambridgeshire County Council) to record annual change since the Census, with an estimate included to account for dwellings completed between the Census and mid-2011.

3) Settlement Estimates

There is no official list of settlements or officially agreed settlement boundaries – those calculated for Cambridgeshire have been defined as being reasonably distinct from at least one other built up area within a parish, and having a population of at least 50. Settlements do not tend to include people living outside the built up area. Population estimates for settlements have been produced by apportioning the parish population on the basis of Ordnance Survey residential Address-Point® records.

The methodology used for calculating settlements has been revised for the mid-2015 estimates and comparison with previous estimates is not advisable.

2015-BASED POPULATION AND DWELLING STOCK FORECASTS

Cambridgeshire County Council's population and dwelling stock forecasts are 'policy-led', so that they are consistent with planned levels of house-building. The 2015-based population and dwelling stock forecasts are mainly based on the local authorities' 2015 housing trajectories, with some interpolation and extrapolation by Cambridgeshire County Council. The population forecasts are therefore different from projections produced by ONS, which are trend-based, meaning they assume that recent trends continue in the future. The ONS forecasts make no specific assumption about levels of house-building, however in general terms they implicitly assume that building continues on a similar level to recent years. They therefore do not take account of new housing developments in areas with low growth previously; similarly, they may over-estimate future growth in areas that had high levels of house-building in the past.

1) Population Forecasts

Cambridgeshire County Council uses POPGROUP¹ to produce its population forecasts. The population forecasts are produced by ageing forward the population by sex and single year of age from a base date, year by year. Population change is forecast by allowing for the main components of population change: births and deaths (the balance of which gives natural change), and migration.

Base Population

The base year for the population used in the latest forecasts is 2015, and this is derived from Cambridgeshire County Council's mid-2015 population estimates.

Fertility Assumptions

Births are forecast by applying age-specific fertility rates to the numbers of women of child-bearing age in the local population. The forecast age-specific fertility rates used in the model are taken from the 2014-based ONS population projections for the relevant districts within Cambridgeshire and Peterborough.

Mortality Assumptions

The process by which deaths are calculated in the model is very similar to that used to calculate births. Deaths are forecast by applying age-specific mortality rates to the number of men and women in the local population. The forecast sex- and age-specific mortality rates used in the model are taken from the 2014-based ONS population projections for the relevant districts within Cambridgeshire and Peterborough.

¹ POPGROUP is a suite of demographic software developed to generate population estimates and forecasts, now managed and developed by Edge Analytics under licence from the Local Government Association (LGA) / Improvement and Development Agency (IDeA), the owners of the software.

Migration Assumptions

Net migration is the balance between migration into an area and migration from it. The age and sex structure of migrants gives the probability of migrants being of a particular age and sex. This structure is determined for the base year of the model and then fitted to forecast totals of net migration to produce numbers of migrants into or out of an area by sex and age. The age and sex structure of migrants used in the model is taken from the 2014-based ONS population projections for the relevant districts within Cambridgeshire and Peterborough.

In this model run, in-migration is adjusted such that the number of households generated by the model is consistent with the number of dwellings that are expected to be built between 2015 and 2036.

Reliability

Forecasts are only as accurate as the assumptions on which they are based. Assumptions used here about fertility, mortality and migration are based on the best available information, but they are complex factors with countless influences. It is impossible to predict the future; we can only make reasoned guesses based on what we know about the past and the present. The forecasts are continually revised as new assumptions become available. This means that current figures will differ from those published (for the same time frame) in previous years. In some cases differences may be quite considerable due to revised assumptions about the phasing of planned development.

Local authority level forecasts rely on dwelling targets being achieved and are therefore subject to the same reliability issues that affect the dwelling stock forecasts. In general, the forecasts become less reliable the further they project into the future. The total population forecasts will be more reliable than for individual ages and sexes.

2) Dwelling Stock Forecasts

Dwelling stock forecasts form the basis of the population forecasts, and for this analysis the 2015 housing trajectories have largely been used. The phasing and location of new housing by ward is determined through the Local Plan process. The local authorities produce annual housing trajectories, detailing the number and phasing of dwellings expected to come forward on individual sites. These trajectories are used to guide the distribution of house-building between wards and five-year time-bands, although some 'smoothing' may take place and the trajectories may not be followed exactly.

The trajectory follows financial years, while Cambridgeshire County Council's forecasts reflect the mid-year point. For simplicity, the financial years are assumed to correspond to the nearest mid-year point. In other words, where a trajectory details development expected between April 2016 and March 2017, these are assumed to occur between mid-2016 and mid-2017 in our forecasts.

Reliability and Local Factors

The authority and ward-level dwelling stock forecasts present an optimistic view of dwelling stock growth as they assume that all planned dwellings are built according to policy. In terms of planning for the future it is necessary to consider the full implications of policy, even if there are questions as to whether policy can be achieved. The extent to which policy targets are achieved depends on many factors, including market forces and the economy. All development is subject to the development control system; development on designated sites depends on suitable planning applications being received from developers. In addition, “windfall” sites, which have not been allocated for housing growth, can become available.

WARD BOUNDARY CHANGES

Fenland

The Local Government Boundary Commission carried out an electoral review of Fenland between March 2012 and January 2014. The Fenland (Electoral Changes) Order 2014, which implemented the recommendations made by this review, was made on 8 January 2014, and the boundaries took effect in May 2015. Most of the changes applied to wards within the towns of Chatteris, Whittlesey and Wisbech, along with a slight change to the boundary between Benwick, Coates and Eastrea and March West. The previously separate wards of Doddington and Wimblington were combined to form one ward, Doddington and Wimblington. Elm and Christchurch, Parson Drive and Wisbech St. Mary, March East, March North and Roman Bank were unchanged, as were the wards of Peckover and Waterlees, renamed Waterlees Village, in Wisbech. Whilst Chatteris kept 4 wards and their original names, they were all reshaped and the ward of Manea was extended to include the more rural edges of Chatteris Birch and Chatteris Wenneye. The parish boundary for Manea has also since been changed to align with the ward boundary. The previous 6 wards of Whittlesey have been reshaped and reduced to 4: Bassenhally, Lattersey, St. Andrews and Stonald. Wisbech retains 7 wards, with Peckover and Waterlees Village (previously Waterlees) unchanged. The remaining wards have been reshaped and Hill renamed Octavia Hill. Overall, the previous 27 wards of Fenland have been reduced to 24 wards.

Peterborough

At the local elections in 2016 new ward boundaries for Peterborough took effect. The new boundaries were the result of the boundary review which took place during 2015, with the Peterborough (Electoral changes) Order 2015 confirming the new ward boundaries in late 2015. From 2016, 22 wards replaced the 24 wards that were in place. The rural wards were reshaped, with the 5 wards being replaced by 4 and only Barnack remaining unchanged. The new rural ward of Glinton and Castor also included an element of non-parished area that was previously in the old Werrington North urban ward. The 19 urban wards were replaced by 18. Whilst the previous urban wards of Bretton North, Dogsthorpe and Park were effectively unchanged (although the previous ward of Bretton North was renamed Bretton) all other urban wards saw changes.