Methodology Note for Users: Cambridgeshire County Council's Mid-2022 Population and Dwelling Stock Estimates

1) Population Estimates

Definition:

The total population figures are mid-year estimates of the resident population. The definition of the resident population used for our mid-year estimates is the same as that used in the 2021 Census as all students who intend to stay regularly at a term-time address (and school boarders who stay at their term-time address for four or more nights per week) 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's (CCC) mid-2021 and mid-2022 population estimates build on Census 2021 data, using the Census 2021 data that was available at the time the estimates were produced

To produce the mid-2021 population estimates Cambridgeshire County Council compared the results of Census 2021 that were available at the time with population data provided by alternative sources, including health statistics, school rolls and electoral registers, to establish a mid-2021 set of population estimates. At the time of the production of the mid-2021 estimates, full Census 2021 population data by age and sex for parishes and output areas had not been published by the Office for National Statistics (ONS). For the mid-2021 estimates CCC estimated forward from the set of provisional Census 2021 ward and parish population estimates that were produced by CCC. These are published on Cambridgeshire and Peterborough Insight ([Census 2021 Topic Summaries – Demography and Migration](#)), along with an accompanying methodology note [(Cambridgeshire County Council's Census 2021 ward and parish estimates methodology note](#)).

At the time of the production of the mid-2022 population estimates, some further Census 2021 data had been published by the ONS, although not full single year of age data by Output Area. The mid-2021 population estimates were reviewed, to take account of the later published Census 2021 data, at the same time as the mid-2022 population estimates were produced. The mid-2021 and mid-2022 population estimates may be subject to further review if more detailed data from Census 2021 becomes available.

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. Where available, 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.

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 students as well as service personnel and their families living in an area. Consequently, it is 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-2022 have been produced with reference to the electoral register data, along with consideration of other data sets as outlined above and housing completions data.

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.

Rounding:

Figures for parishes and wards have all been rounded to the nearest 5 people and may not sum to district totals.

2) Dwelling Stock Estimates

Definition:

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:

CCC's dwelling stock estimates build on Census 2021 data, using the Census 2021 data that was available at the time the estimates were produced.

At the time of the production, Census 2021 dwelling stock data by parish had not been published by the ONS. For the mid-2021 and mid-2022 estimates CCC has estimated forward from the set of provisional Census 2021 ward and parish dwelling stock estimates that have been produced by CCC. These are published on Cambridgeshire and Peterborough Insight, (Census 2021 Topic Summaries – Demography and Migration), along with an accompanying methodology note (Cambridgeshire County Council's Census 2021 ward and parish estimates methodology note). The mid-2021 and mid-2022 dwelling stock estimates may be subject to further review if more detailed data from Census 2021 becomes available.

CCC's provisional Census 2021 estimates of the number of dwellings by parish and ward form the basis for the mid-year estimates. Estimates are then calculated using housing completions data published annually by the five district / city councils within Cambridgeshire, Cambridgeshire County Council and Peterborough City Council, with an estimate included to account for dwellings completed between the Census and mid-2021.

Rebasing the CCC estimates model every ten years can lead to some discontinuity between figures; comparisons with intermediate years' estimates should be made with some caution and small changes in populations should not be scrutinised too heavily.

Rounding:

Figures for parishes and wards have all been rounded to the nearest 5 dwellings and may not sum to district totals.

Methodology Note for Users: Cambridgeshire County Council's 2022-based Population and Dwelling Stock Forecasts

1) Population Forecasts

CCC's forecasts are 'policy-led', so that they are consistent with planned levels of house-building. They are therefore different from projections produced by the ONS, which are trend-based, meaning they assume that recent trends continue in the future. The ONS projections 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.

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

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 2022, and this is derived from CCC's mid-2022 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 age-specific fertility rates used in the forecast model are calculated from ONS data on live births by age of mother and with reference to the ONS's population estimates rebased to Census 2021 (publication November 2023) for the five year period between 2017-18 and 2021-22. These rates are applied in the forecast model from 2022-23 onwards.

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 females and males in the local population. The forecast sex- and age-specific mortality rates used in the model are calculated from ONS data on deaths by age and sex and with reference to the ONS's population estimates rebased to

Census 2021 (publication November 2023) for the five year period between 2017-18 and 2021-22. These rates are applied in the forecast model from 2022-23 onwards.

Migration Assumptions:

Net migration is the balance between migration into an area and migration from it. Within this set of 2022-based forecasts, immigration and emigration rates by age and sex have been calculated with reference to the ONS's population estimates rebased to Census 2021 (publication November 2023) for the five year period between 2017-18 and 2021-22. These rates are applied in the forecast model from 2022-23 onwards. 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 2022 and 2041.

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 at the time of production, 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

CCC's dwelling stock forecasts are used in the modelling of the population forecasts. CCC's dwelling stock forecasts use CCC's mid-2022 dwelling stock estimates as the starting point. The housing trajectories used to produce the forecast from mid-2022 onwards are as follows:

- Cambridge City and South Cambridgeshire District Councils: trajectory published in April 2023.

- East Cambridgeshire District Council: trajectory published in October 2022.

- Fenland District Council: trajectory published in September 2021.

- Huntingdonshire District Council: trajectory published in October 2023.

- Peterborough City Council: trajectory published in October 2022.

The published trajectories detail the number and phasing of dwellings expected to come forward on individual sites. This is used to guide the distribution of house-building between wards for the period 2022 to 2041.

The trajectory follows financial years, while the CCC 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 developments expected between April 2022 and March 2023, these are assumed to occur between mid-2022 and mid-2023 in our forecasts.

Reliability & 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.