

Appendix 2: Methodology used to produce five-year electoral forecasts

This appendix outlines the methodology used to produce the electoral forecasts supplied by Cambridgeshire County Council. The forecasts were produced by the Cambridgeshire County Council Research Group. The forecasting methodology works by apportioning forecast district level electoral change between small areas, such as parishes or wards, according to the dwellings change and ratio of electors to dwellings in each area.

Forecasting the district electorate

For each district as a whole an elector to dwelling ratio is calculated for the forecast period (five years ahead). This is produced using a forecast electorate and a forecast number of dwellings. The forecast number of dwellings is the number of dwellings in the base year plus the number of dwellings scheduled to be built over the subsequent five years. The forecast electorate is the base year electorate plus the change in the voting-age population of the district over the forecast period. This change is taken from forecasts produced by the Research Group population model.

The population model ages the population forward by sex and single year of age from a base year (currently 1991). Population change is forecast by allowing for the main components of change: births, deaths and migration. The model divides the population into two groups: the resident (or local) population and the transient population, which includes students and members of the armed forces. The resident population ages forward through the forecast period, but experience suggests that the transient population does not tend to remain in the area for more than a few years. The transient population therefore does not age forward with the local population, but is instead replaced by people with similar characteristics, such as age and sex. Students, for example, tend to leave Cambridge after they graduate and are replaced by the next academic year's student intake. The number of people in the transient group is therefore forecast separately (allowing for, for example, growth in student numbers) and added to the figures for the resident population, produced by the main population forecasts, to give overall population totals.

For the purposes of this electoral review, the model was run, by district, to produce the dwellings increase expected on the basis of known planning permissions and Local Plan allocations. The associated change in numbers of people aged 17 and over could then be determined from the model.

Preliminary results from the 2001 Census showed that there were problems with the way the population model was running in Cambridge City, particularly with age structure and the age structure of migrants. For this reason, in the absence of sufficient data from the Census to remedy the problem, the decision was made to hold the ratio of electors to dwellings constant over the next five years, and use that ratio to forecast the electorate of Cambridge City. This decision was informed by Census results showing that the average household size has remained steady between 1991 and 2001 in Cambridge, and that the proportion of the population of voting age has not changed markedly.

Small area electoral forecasts

The starting point for small area electoral forecasts is the calculation of elector to dwelling ratios. The electorate forecasting model has a provision to deal separately with significant numbers of electors in communal establishments - this was relevant

for areas in Cambridge City where there are high numbers of students in colleges and halls of residence.

For each small area (such as electoral division, ward or parish) the number of dwellings for the forecast period is calculated by adding a figure assumed for the numbers of houses to be built in that area over the forecast period. Full details of the sites involved are given in Appendix 1 of this paper. The electorate for the forecast period is then calculated as follows:

The base year elector-dwelling ratio for each area is multiplied by the ratio of the forecast district elector-dwelling ratio to the base year elector-dwelling ratio. This change factor is applied to the existing dwellings in the area to produce a forecast of the electorate associated with existing dwellings by the end of the forecast period. This allows for changes in household composition associated with, for example, an ageing population and a tendency toward a higher number of one person or single parent households.

The new build housing for the area is multiplied by the district elector-dwelling ratio for the end of the forecast period. This is added to the figure produced above, giving an overall forecast of the electorate in that area based on both existing and additional dwellings.