Forecasting Electoral Data for Southampton Polling Districts – August 2021

Methodology documentation

The LGBC kindly provided a population and electorate forecasting tool to help estimate the potential changes to the electorate at polling district level up to 2027. The methodology uses the latest ONS local authority level population forecasts to project forward the total electorate in the city. The total number of electors for 2027 is calculated by taking the ONS projected total adult resident population for 2027 (215,380), multiplied by the average proportion of the population estimated to be registered to vote in 2018, 2019 and 2020 (calculated by the number of electors in each year divided by the ONS estimated resident population for each corresponding year). This average proportion was calculated to be 84.41% across the three-year period; when applied to the ONS estimated resident population for 2027, this gives a total estimated electorate of 181,811. These electors are then distributed to polling districts and wards using the average distribution of electors from 2018, 2019 and 2020.

Although this tool does produce one possible picture of our electorate in 2027, there is another more accurate and evidence-based dataset available across Hampshire that we have more confidence in which takes account of both the population changes and residential developments across the city.

The Hampshire County Council Small Area Population Forecasts (SAPF) is widely accepted by LAs across the county as the most detailed and accurate model for forecasting future local population and housing numbers. The SAPF includes data from local authorities on planned developments, combined with ONS demographics and other trends to produce detailed and evidence-based projections over many years. More details on the SAPF methodology can be found in Appendix A.

In addition, the SAPF data is available at Lower Super Output Area (LSOA) level, allowing a much more granular understanding of changes at the small area level. This enables us to more accurately map changes at polling district and ward levels across the city.

Therefore, we have used the Hampshire County Council Small Area Population Forecasts (SAPF) to project the Electoral Register forwards to 2027 from a 2021 baseline. This methodology statement provides the step by step process we have taken to produce our projections, which gave a total estimated electorate of 183,318.

STEP 1 – Calculate the proportion of each polling district area within each Lower Super Output Area

- It was important to build up our projections from the lowest available level of SAPF data which already adjusts for locally known changes at a more granular level (such as building development) so this can be allocated to the correct areas of the city.
- SAPF data is available at LSOA level. Unfortunately, LSOAs do not neatly nest within our existing polling districts, so we calculated the proportion of each polling district area that sat within each LSOA using GIS software.

STEP 2 – Project the electorate for 2027 at Polling District level

- The projected change in the 18+ resident population between 2021 and 2027 was calculated at LSOA level using the latest HCC SAPF dataset.
- A data table was drawn up with a line for each LSOA / Polling District combination.

- The 2021 electorate numbers were used as a baseline to project forward. This baseline was apportioned to each data line according to the % split identified in step 1. See blue cells in table below as an example for Polling District AA.
- This number was then multiplied by the LSOA relative projected change figure to give an estimated electorate for 2027. See green cells in table below as an example for Polling District AA.
- The rows for each polling district were then summed and rounded up to give a total estimated electorate for 2027

Polling District	Ward	2021 Total PD Electorate	LSOA Code	% of PD in LSOA	2021 apportioned electorate	SAPF projected change (2021 to 2027)	2027 Projected Electorate
AA	Bargate	2618	E01017140	43%	1127.10	1.41	1588.92
AA	Bargate	2618	E01017194	0%	1.75	1.09	1.91
AA	Bargate	2618	E01017136	10%	255.49	1.01	257.96
AA	Bargate	2618	E01017138	30%	793.22	1.02	809.67
AA	Bargate	2618	E01017137	17%	436.63	0.99	431.39
AA	Bargate	2618	E01017190	0%	3.51	1.03	3.62
AA	Bargate	2618	E01017189	0%	0.30	1.06	0.32

STEP 3 – Project the electorate at ward and city levels for 2027

- The 2027 forecasts at Polling District level were then summed to provide figures at ward and city level.

The HCC SAPF projections are based on the following:

- Rolled forwards from 2011 Census baseline
- Students are accounted for at their term time address
- Accounting for *known* factors:
  - Known births
  - Known deaths
  - Known dwelling completions
- Also accounting for *unknown* factors such as in and out flows of migrants. This is accounted for by 3 flows controlled by an assumption that at district level the average household size declines at the same annual average rate as the last decade.
  - In migrants to new dwellings
  - In migrants to existing dwellings
  - Out migrants from existing dwellings
- Forecasts based on dwelling supply. The dwelling supply information for the period 2020 to 2027 includes all large and small sites with planning permission, or allocated in local plans as at April 1st 2020. The assumptions on phasing are agreed with the district councils and unitary authorities.
- Additional dwelling information is obtained from district's Strategic Housing and Land Availability Assessment (SHLAA).
- Fertility and Mortality rates are the ONS 2018 based projected rates for England & Wales, adjusted by appropriate ward level correction factors to reflect local variations from the national average.
- In and out Migration propensities have been derived from ONS 2011 Census migration data
- Household Representative rates are ONS 2018 based.
- Vacancy and sharing rates are derived from the 2011 Census and assumed constant. The number of second homes is also assumed constant.
- The geographical base for the forecasts is the 2011 Census Output Areas.