



2012-Based Household Projections for South Tyneside: Updated

TWRI Policy and Research

**March 2015
(Final Version)**





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1. INTRODUCTION.

1.1 Population and Household projections.

This report and, its predecessor (see below), use the mid-2012 population figures, produced by the Office for National Statistics (ONS), as a means of projecting population and household figures to 2037, for South Tyneside. They update the reports previously produced in 2012 which used the 2010 and 2011 figures as a basis for the projections.

The projections are used to contribute to the debate about land use over the projection period.

We start with the 2011-Census based mid-year estimates for 2012. As previously recommended we use 'Option 4' for the TWRI projection¹. This has been accepted as the best method for projecting the population of the area. To make sense of these results we also include the Natural Change and 'Option 3' assumptions.

Again, as in the previous report, no attempt is used within these projections to incorporate any future policy initiatives; that is, proposals incorporated within any plan to develop new housing or demolish elements of the existing housing stock are excluded from the assumptions. Whilst these projections are solely linked to South Tyneside, it must be again appreciated that figures in the projections will be affected by the housing activity of neighbouring authorities, as well as national policies. For this reason we have projected all other authorities in the Northern region and England as a whole.

The general population model starts with the population as estimated by ONS, for mid-2012, by single year of age and gender. To project the population to mid 2013, from 2012, the method, initially, ages each person by one year, adds in the expected number of births for boys and girls, and removes the anticipated number of deaths (by age and gender).

Next, since it is anticipated that, as in the past, there will be future in-migration and out-migration from the borough, this basic model generally gives unrealistic projected figures. We need, therefore, to incorporate projected migration figures. These are divided into two types, namely those to and from abroad and also those to and from other areas within the UK.

As mentioned above, this report should be read in conjunction with the previous report: **2012-Based Population and Household projections for South Tyneside (November 2013)**. (Note that this earlier report is the most up-to-date available total population figures.) This current report affects the size of the institutional population, the household population, the number of households and the average household size. It does not affect, for example, the total population, the projected age structure and the male to female ratio.

In this report we present some of the results, with appropriate analysis to aid understanding. Full results will be provided electronically, in an XL spreadsheet.

¹ The difference between the options relates to the assumptions about future migration, both internal and international. For more details see previous reports.



1.2 Projection models used in this report.

Whilst we have only been requested to produce the results for Option 4 (this uses 5 years weighted NHSCR + 3 years unweighted International migration data). As we were undertaking this and the previous work, it was appreciated that it was necessary to include two other models, namely the Natural Change and the Option 3 (this uses 5 year weighted NHSCR data, but ignores International migration) models. Without these extra two models the results of Option 4 would only make limited sense.

1.3 Household representative rates.

These are used to produce the projected number of households. The latest available figures are the DCLG 2012 based figures (March 2015). These are projected to 2037.

1.4 Institutional population.

Not all the population lives in private households. A small proportion live in institutions, for example, care homes. The DCLG model projects that these will grow from around 1,400 to 2,050 by the year 2037, a growth of some 44%.

Using a proportionate model, TWRI would project marginally different figures. These are not very different from the ONS/DCLG figures and so, for the sake of simplicity we have ignored this difference, which, for each of the three TWRI models, would amount to less than 25 households.

1.5 Computer based model.

To undertake these analyses we have produced an XL based system which allows for change of assumptions. That is, the program allows the assumptions about the future population change to be altered and results made available instantly. To do household projections requires the "Household representative rates" and so is best treated separately.

1.6 Rounding.

Most of the figures are rounded to the nearest 100. Hence, because of this rounding, figures in the tables may not sum to the total, which is independently rounded.

2. SUMMARY OF MAIN RESULTS.

The following two tables give the population and household projections, to 2037, for South Tyneside using the three options (Natural Change, Option 3 and Option 4) using as a base the 2011 Census-based, population estimates for 2012. These figures are compared with other recent projections, i.e. those produced by the Office for National Statistics (ONS) and the Department for Communities and Local Government (DCLG).

2.1 Projected total population.

Table 1: South Tyneside's estimated (2012) and projected population (2021, 2031 and 2037)

<u>Source</u>	<u>Type of Data</u>	<u>Projectio n Model</u>	<u>Base Year</u>	<u>Year</u>	<u>Total Populatio n</u>	<u>Change from 2012</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ONS	MYE	-	2012	2012	148,400	-
ONS	Projection	ONS	2012	2021	151,800	+3,400
TWRI	Projection	NatCh	2012	2021	148,800	+400
TWRI	Projection	Option 3	2012	2021	148,200	-200
TWRI	Projection	Option 4	2012	2021	151,700	+3,300
ONS	Projection	ONS	2012	2031	155,200	+6,800
TWRI	Projection	NatCh	2012	2031	146,900	-1,500
TWRI	Projection	Option 3	2012	2031	145,400	-3,000
TWRI	Projection	Option 4	2012	2031	153,300	+4,900
ONS	Projection	ONS	2012	2037	156,600	+8,100
TWRI	Projection	NatCh	2012	2037	144,600	-3,800
TWRI	Projection	Option 3	2012	2037	142,500	-5,900
TWRI	Projection	Option 4	2012	2037	153,100	+4,700



The table shows in column

- (1) The source of the original data, either ONS or TWRI, [Also see footnote 3, above.]
- (2) If the figures are based on mid-year estimates or on projections,
- (3) The projection model, e.g. ONS standard method, Natural Change (NatCh) and Option 4,
- (4) The base year for the projection, i.e. 2012, [this is the start year for projecting],
- (5) The year the figures apply to, e.g. 2012, 2021, 2031 or 2037,
- (6) The population estimate or projected total population, and
- (7) The difference between the base figure (148,400) and the projected figure.

For example, the second blue line gives the natural change growth from 2012 to 2021; South Tyneside would be projected to have a population of 148,800, if only natural change was considered. [ONS generally have higher projected figures than the TWRI projections.]

The natural change and Option 3 models tend to give lower population projections than Option 4. Without the positive impact of international change the population is projected to decline; for 2012, to 2037, under the Natural Change model, by in the region of 4,000 [148,400 less 144,600] and under the Option 3 model by nearly 6,000 [148,400 less 142,500].

Chart 1, below, gives the total population estimates over the period 1991 to 2012 and the projected population over the period 2013 to 2037 under the four different options. Below that chart 2 shows the corresponding figures for the household population estimates.

Not surprisingly the two charts have very similar shapes for each of the four options. The following table gives these figures together with the Institutional population for selected years.

Table 2: South Tyneside's estimated (2012) and projected population (2021, 2031 and 2037)

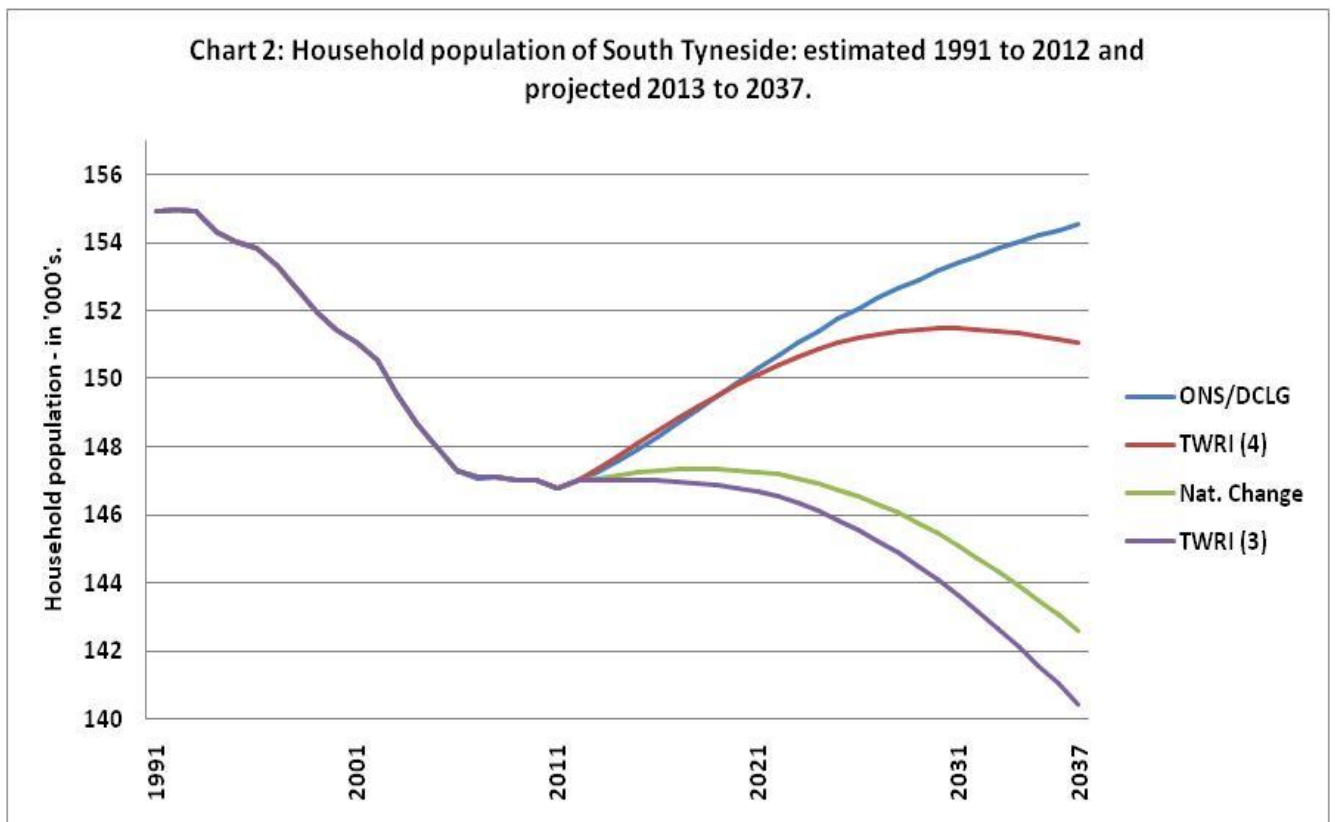
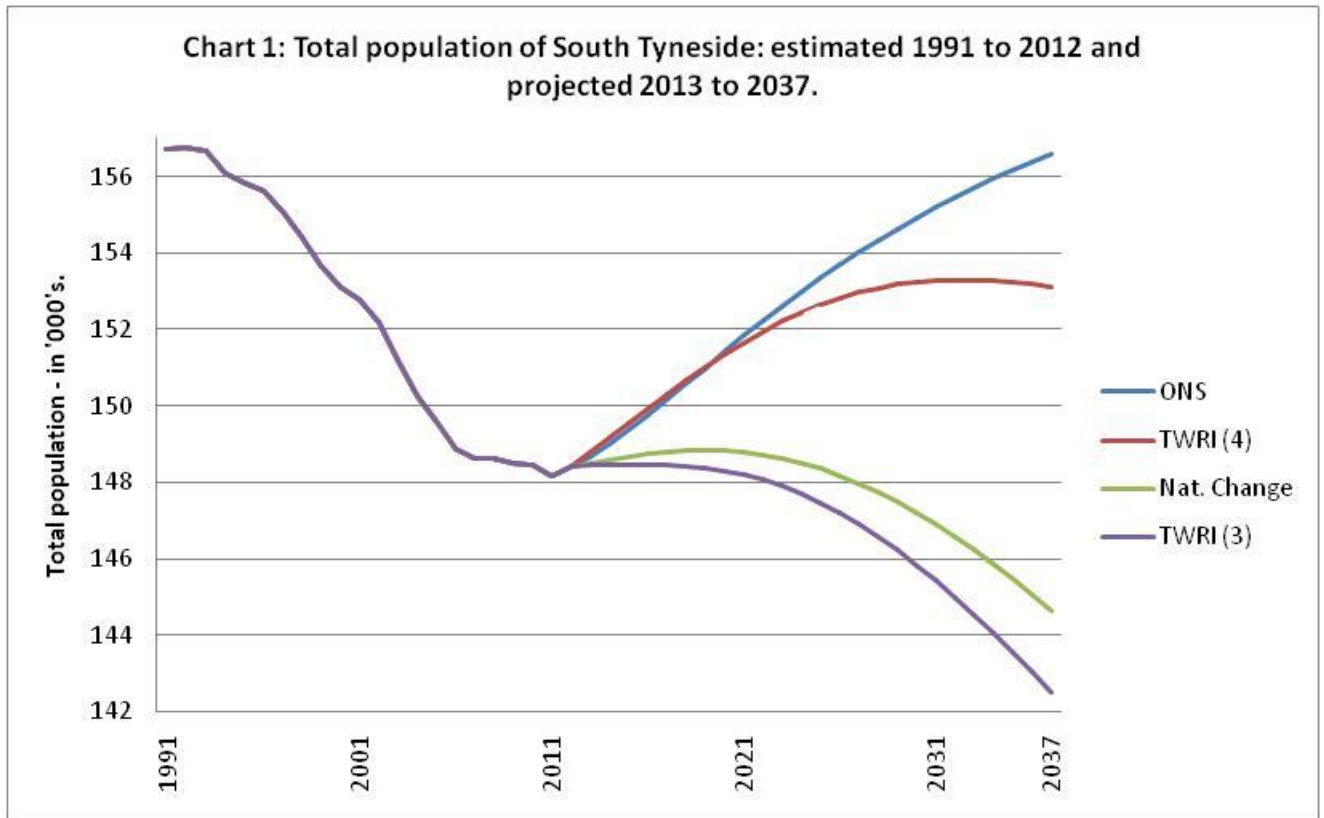
<u>Source</u>	<u>Type of Data</u>	<u>Projection Model</u>	<u>Base Year</u>	<u>Year</u>	<u>Total Populatio n</u>	<u>Institutional Population</u>	<u>Household Populatio n</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ONS/DCLG	MYE	-	2012	2012	148,400	1,400	147,000
ONS/DCLG	Projection	ONS/DCLG	2012	2021	151,800	1,500	150,300
TWRI	Projection	NatCh	2012	2021	148,800	1,500	147,300
TWRI	Projection	Option 3	2012	2021	148,200	1,500	146,700
TWRI	Projection	Option 4	2012	2021	151,700	1,500	150,100
ONS/DCLG	Projection	ONS/DCLG	2012	2031	155,200	1,800	153,400
TWRI	Projection	NatCh	2012	2031	146,900	1,800	145,100
TWRI	Projection	Option 3	2012	2031	145,400	1,800	143,600
TWRI	Projection	Option 4	2012	2031	153,300	1,800	151,500
ONS/DCLG	Projection	ONS/DCLG	2012	2037	156,600	2,000	154,500
TWRI	Projection	NatCh	2012	2037	144,600	2,000	142,600
TWRI	Projection	Option 3	2012	2037	142,500	2,000	140,400
TWRI	Projection	Option 4	2012	2037	153,100	2,000	151,100

The table shows in column

- (1) The source of the original data, either ONS/DCLG or TWRI, [Also see footnote 3, above.]
- (2) If the figures are based on mid-year estimates or on projections,
- (3) The projection model, e.g. ONS/DCLG standard method, Natural Change (NatCh) and Option 4,
- (4) The base year for the projection, i.e. 2012, [this is the start year for projecting],
- (5) The year the figures apply to, e.g. 2012, 2021, 2031 or 2037,
- (6) The population estimate or projected total population,
- (7) The institutional population, and
- (8) The household population.

The growth in household population is somewhat less than the growth in total population reflecting the growth in the Institutional population of around 40%.





2.2 Projected numbers of households.

Table 3: South Tyneside's estimated (2012) and projected number of households (2021, 2031 and 2037), together with total and annual growth.

<u>Source</u>	<u>Type of Data</u>	<u>Projection Model</u>	<u>Base Year</u>	<u>Year</u>	<u>Number of Households</u>	<u>Growth from Base</u>	<u>Annual Growth</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DCLG	MYE	-	2012	2012	67,600	-	-
DCLG	Projection	DCLG	2012	2021	71,100	+3,600	+400
TWRI	Projection	NatCh	2012	2021	69,800	+2,300	+250
TWRI	Projection	Option 3	2012	2021	69,700	+2,100	+240
TWRI	Projection	Option 4	2012	2021	71,200	+3,600	+410
DCLG	Projection	DCLG	2012	2031	74,500	+6,900	+360
TWRI	Projection	NatCh	2012	2031	71,200	+3,600	+190
TWRI	Projection	Option 3	2012	2031	70,600	+3,000	+160
TWRI	Projection	Option 4	2012	2031	74,300	+6,700	+350
DCLG	Projection	DCLG	2012	2037	76,100	+8,600	+340
TWRI	Projection	NatCh	2012	2037	71,300	+3,800	+150
TWRI	Projection	Option 3	2012	2037	70,400	+2,900	+110
TWRI	Projection	Option 4	2012	2037	75,500	+7,900	+320

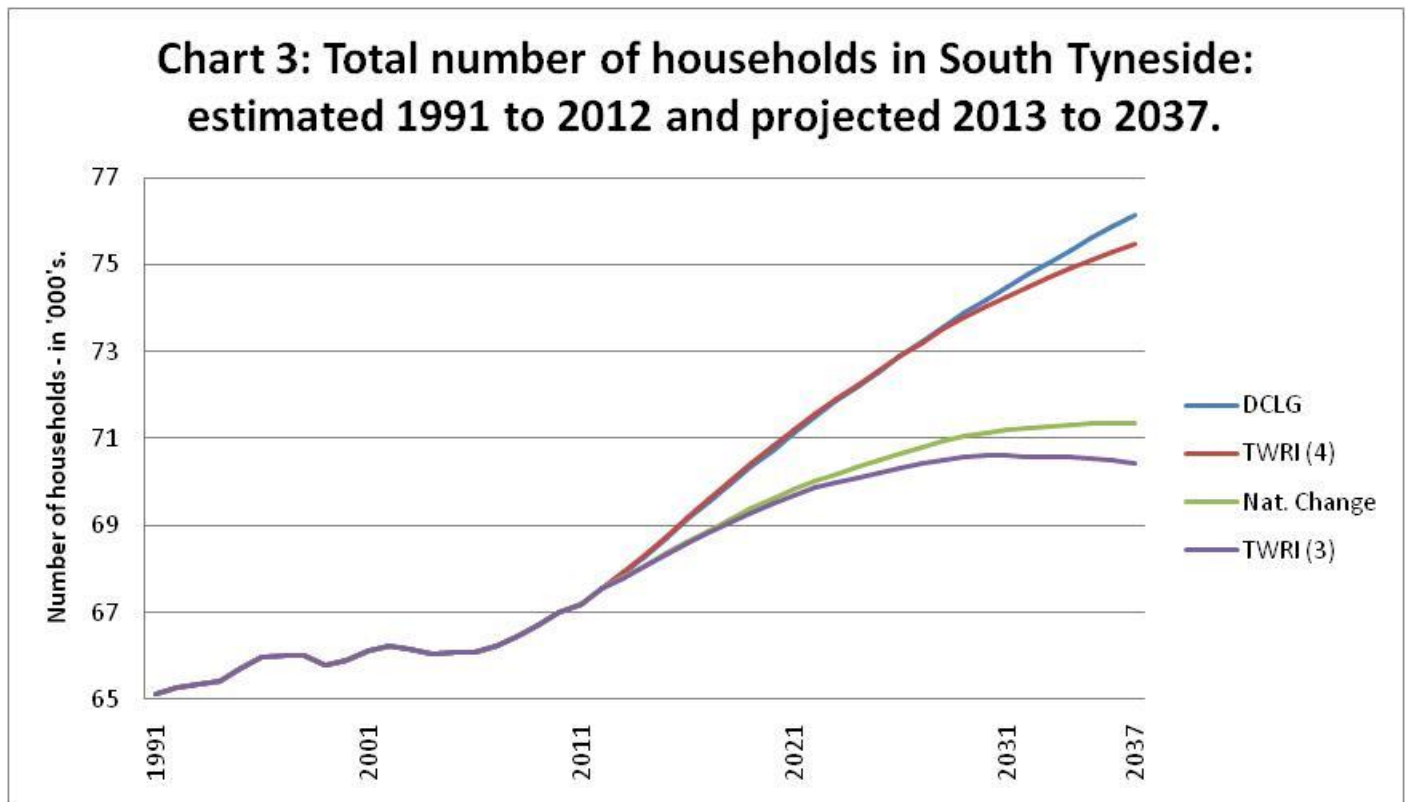
The table shows in column

- (1) The source of the base and/or projected total population data, either ONS or TWRI; [also see footnote 4, below],
- (2) If the figures are based on mid-year estimates or on projections,
- (3) The projection model, e.g. DCLG standard method, Natural Change (NatCh) and Option 4,
- (4) The base year for the projection, i.e. 2012, [this is the start year for projecting],
- (5) The year the figures apply to, for example, 2010, 2021, or 2037,
- (6) The estimated or projected total number of households,
- (7) The total growth from the base year to the projection end date, and
- (8) The annual growth from the base year to the projection end date.

We have applied the DCLG household representative rates, by age group and gender, to produce these figures. For example, the second blue line, in the table, shows that from the 2012 Natural change model growth to 2021. The growth in number of households is 2,300, or about 250 per year over the nine year period 2012 to 2021.

The Natural change and Option 3 models imply a projected growth, over the projection periods, in the region of 150 and 110 extra households per year, respectively; Option 4 implies a growth of around 320 per year, very similar to the ONS/DCLG projected growth.

The chart, below, shows, using the DCLG and TWRI figures, the estimated and projected number of households over the projection period.



2.3 Average household size.

In common with much of the country, the average number of people in each household has been falling. This is projected to be true for South Tyneside for the projection period. The following table shows the results. (The average household size figures and the corresponding differences are rounded to 2 decimal places.)

Not surprisingly, the figures show a decline in the average household size throughout the projection period. Over the long term the DCLG figures fall marginally less than the TWRI figures.

Table 4: South Tyneside’s estimated (2012) and projected (2021, 2031 and 2037) average household size.

<u>Source</u>	<u>Type of Data</u>	<u>Projection Model</u>	<u>Base Year</u>	<u>Year</u>	<u>Average Household size</u>	<u>Change from 2012</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
DCLG	MYE	-	2012	2012	2.18	-
DCLG	Projection	DCLG	2012	2021	2.11	-0.06
TWRI	Projection	NatCh	2012	2021	2.11	-0.07
TWRI	Projection	Option 3	2012	2021	2.10	-0.07
TWRI	Projection	Option 4	2012	2021	2.11	-0.07
DCLG	Projection	DCLG	2012	2031	2.06	-0.12
TWRI	Projection	NatCh	2012	2031	2.04	-0.14
TWRI	Projection	Option 3	2012	2031	2.03	-0.14
TWRI	Projection	Option 4	2012	2031	2.04	-0.14
DCLG	Projection	DCLG	2012	2037	2.03	-0.15
TWRI	Projection	NatCh	2012	2037	2.00	-0.18
TWRI	Projection	Option 3	2012	2037	1.99	-0.18
TWRI	Projection	Option 4	2012	2037	2.00	-0.17

The table shows in column

- (1) The source of the original data, either DCLG or TWRI,
- (2) If the figures are based on mid-year estimates or on projections,
- (3) The projection model, e.g. DCLG method, Natural Change (NatCh) and Option 4,
- (4) The base year for the projection, i.e. 2012, [this is the start year for projecting],
- (5) The year the figures apply to, e.g. 2012, 2021, 2031 or 2037,
- (6) The average household size, and
- (7) The difference from the base year (2012).



3. SUMMARY AND CONCLUSIONS.

3.1 Summary.

- a) The previous report and this one projected South Tyneside's population under the three options, the Natural Change, Option 3 and Option 4 scenarios, starting with the ONS mid-2012 estimate as a base. (See Table 1), comparing the results with the ONS projections.
- b) Under these results, for 2037, the ONS projection and the Option 4 projections are considerably above the Natural Change and Option 3 models. (See Table 1). It is important to appreciate, as was noted in the previous reports, that any projected growth in population, relies on continuing net international in-flow to maintain the growth.
- c) In the light of these results, if future nett international in-migration is probable, then Option 4 is considered to be the most likely outcome. However, if this does not appear likely, then either of the other two options should be considered for future policy development. (See Table 1).
- d) It is likely that the 'Institutional population' will increase over the projection period, by upwards of 40%.
- e) As a consequence the Natural Change and Option 3 scenarios lead to similar number of households, but these differ from that projected by Option 4. This projection leads to considerably more households by 2037 (See Table 3).
- f) However, despite possible long-term reduction in population, the models project more households. (See Table 3.)
- g) Table 4 shows the decline in average household size, from around 2.18 (2012) to around 2.0 (whichever model is used) in 2037.

3.2 Conclusions.

We have projected South Tyneside's population size forward and conclude:

- a) that despite possible long-term reduction in population, the models project extra households, probably in the region of 300 to 340 per year, and
- b) that the decline in average household size is likely to continue, leading to more smaller households.



APPENDIX.

This appendix provides two extra notes about projecting the total number of households to 2037.

Note 1 Household spaces not occupied by Usual Residents.

From the 2011 Census there are 2,540 dwellings in South Tyneside in which there is no Usual Resident. Many of these will be vacant, but some will be occupied by people who are not usual residents.

Note 2 Household spaces occupied by those who are 'Non-UK residents'.

The Census definition of a household includes only those households with at least one 'Usual resident'. There are other occupied household spaces which do not contain usual residents. These are implicitly excluded from the analysis.

There are a number of people enumerated (455 in South Tyneside of whom 445 live in private households) within the Census who are classified as 'Non-UK Born Short-term Residents'. Some of these will be in households which also contain people who are 'Usual Residents' and are therefore not extra households. However, a number, possibly very small, will be additional separate households.