



2011-Based Population and Household Projections for South Tyneside

Updates the 2010 based projections produced in June 2012 for
South Tyneside Council,
by TWRI Policy and Research

October 2012



Population and Household Projections to 2036

This Bulletin summarises population projections at Local Authority level to 2036, produced by TWRI, using the 2010 'indicative' and 2011 mid-year estimates and compare these with the projections produced by ONS. South Tyneside is presented here as an example for comparisons. This Bulletin also provides the implied numbers of households. Using the 2010 'indicative' figures, ONS projected to 2035; using the 2011 mid-year estimates they produced 'interim' projections to 2021. TWRI used these base-year figures to produce population and household projections to 2036. Rather than those which are used by ONS, TWRI uses assumptions more in keeping with those which have produced, in the past, more accurate projections for South Tyneside¹.

KEY POINTS

ONS's total population projections for South Tyneside, for all years, are higher than TWRI's projections. Whilst ONS (2011-based) figures start from a lower figure, they project a considerably faster growth (to 2021) than their 2010-based figures. In contrast, the 2011-based TWRI projection is less than that produced from the 2010-based figures, to both 2021 and 2035. TWRI expect the growth, to 2035/36, to be around 3,000 (2%). (See table 1 and chart 1, below.)

Using the 2011-based figures and contrasting four age groups, ONS projections exceed the TWRI ones (to 2021) for each group. TWRI, expect that by 2036, the number of children and young people will reduce by about 20%, adults (i.e. those aged 16 to 64) by 10%; but those aged 65 or over to increase by 65%. (See table 2, below.)

All projections show an increase in the number of households in the projection period². The ONS (2011-based) population projection implies a growth of over 500 per year to 2021, much higher than any other projection. TWRI expects the number of households will increase from about 68,300 to 79,600 by 2036. (See table 3, below.)

Population projections to 2035/6

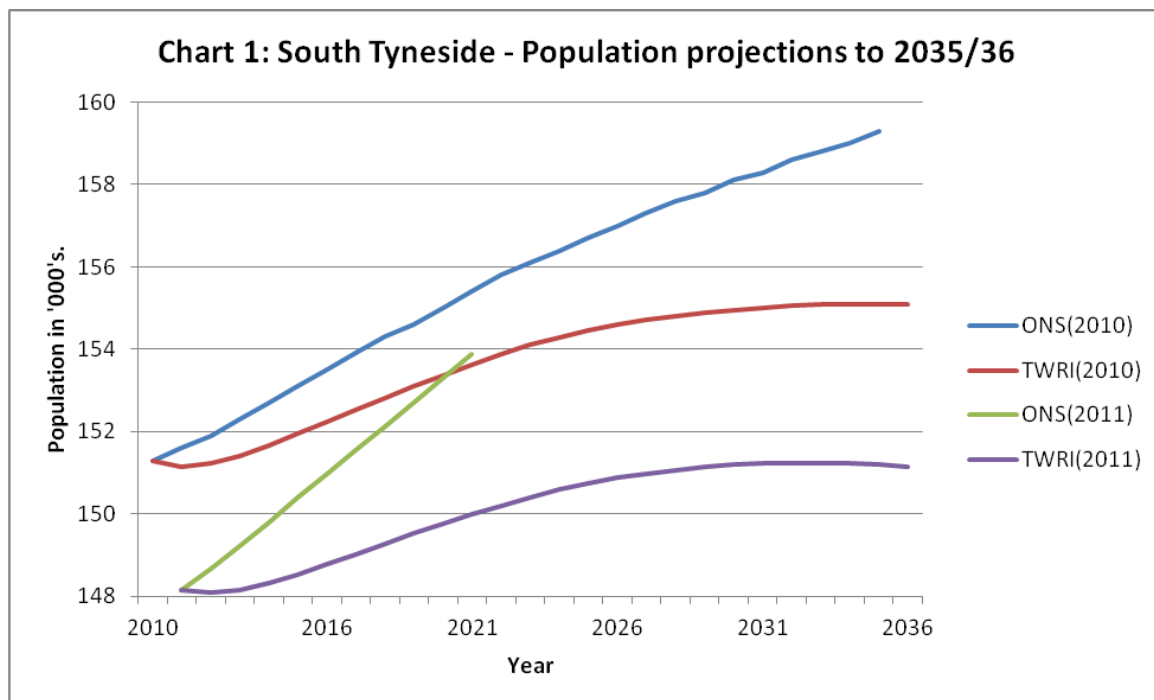
Using the 2011-based figures, ONS project a figure of 153,900 for 2021. Whilst this is less than using their 2010-based figure, for 2021, (155,400), the growth is much more (5,700 compared with 3,800). In contrast TWRI initially projected a growth of 2,400 (to 153,600); the 2011 figures, under the TWRI assumptions, suggest a smaller growth, to 2021, of 1,800, from 148,200 to 150,000. Under the TWRI assumptions, the 2011-based figures suggest a growth to 2036 of some 3,000, from 148,200 to 151,200; slightly less growth than using the 2010 figures.

Table 1 Summary of population projections under the various options

Year	Base=2010		Base=2011	
	ONS	TWRI	ONS	TWRI
2010	151,300	151,300		
2011	151,600	151,200	148,200	148,200
2016	153,500	152,200	151,000	148,800
2021	155,400	153,600	153,900	150,000
2026	157,000	154,600		150,900
2031	158,300	155,000		151,200
2035	159,300	155,100		151,200
2036		155,100		151,200
Change 2011-2021				
Numbers	+3,800	+2,400	+5,700	+1,800
Percentage	+2.5%	+1.6%	+3.8%	+1.2%
Change 2011-2035				
Numbers	+7,700	+3,900		+3,000
Percentage	+5.0%	+2.5%		+2.0%

¹ This option uses 5 years weighted NHSCR and 3 years unweighted IPS figures; all populations are rounded to the nearest 100.

² For household headship rates we have used the 2008-based projections to 2033, extrapolated to 2036, for each 5 year age-groups. Note that the household projections, in chart 5 and table 3, are not ONS figures; they are derived from ONS population projections and the associated household headship rates. The number of households in this bulletin will exceed the number of households as reported in the 2011 Census [67,200], as the latter excludes households with only non-usual residents. It is also important to appreciate that there must be suitable housing for these households within the Authority.



Projected age structure

As far as age structure is concerned, TWRI projects, to 2021, there to be marginally fewer under 16's, (25,800 in 2011 to 25,600 in 2021), whereas the ONS projection expects there to be more (27,200 in 2021, +5.3%). All four projections expect there will be more aged 65 and over. Table 2 and charts 2, 3 and 4, below, gives more details for these and other two groups.

Table 2 Summary of age groups for South Tyneside under the ONS and TWRI projections

Source	Year		Under 16	16 to 24	16 to 64	65 & over
Mid-year estimate	2011	Number	25,800	16,900	95,400	27,000
		Percentage	17.4%	11.4%	64.4%	18.2%
ONS projection	2021	Number	27,200	14,100	94,400	32,300
		% Growth 2011 to 2021	+5.3%	-16.6%	-1.0%	+19.8%
		Percentage	17.7%	9.2%	61.3%	21.0%
TWRI projection	2021	Number	25,600	13,900	92,600	31,800
		% Growth 2011 to 2021	-1.0%	-20.3%	-2.9%	+18.1%
		Percentage	17.1%	9.0%	61.7%	21.2%
TWRI projection	2036	Number	20,200	13,700	86,400	44,600
		% Growth 2011 to 2036	-21.9%	-19.1%	-9.4%	+65.3%
		Percentage	13.3%	9.1%	57.2%	29.5%

Chart 2, below, shows the four projections for those aged under 16. ONS project a rise to 2021, and then for the 2010-based projection a fall to below the current number. On the other hand, TWRI generally (but not exclusively) project the numbers to fall throughout the projection period.

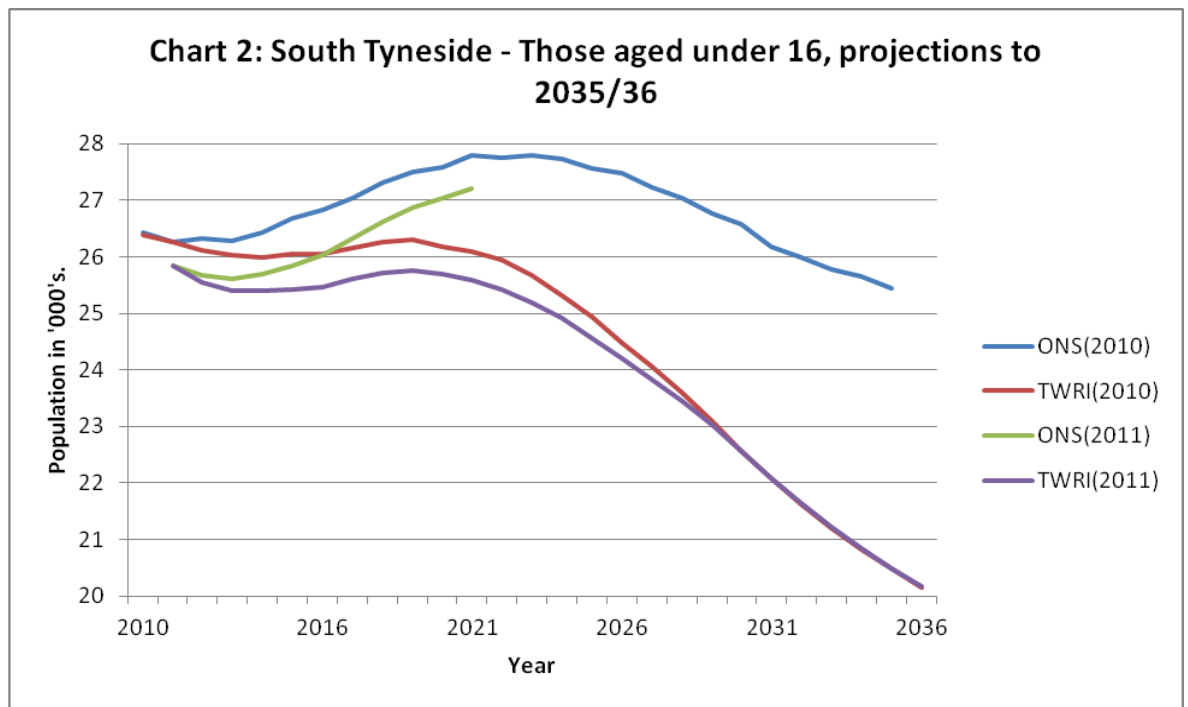


Chart 3, below, shows the four projections, for those aged 16 to 64; all projections show a fall in numbers; TWRI show a much steeper fall. Whilst the two ONS projections appear to converge, the two TWRI projections are almost parallel, implying that the main change is as a result of the starting point rather than the trends themselves.

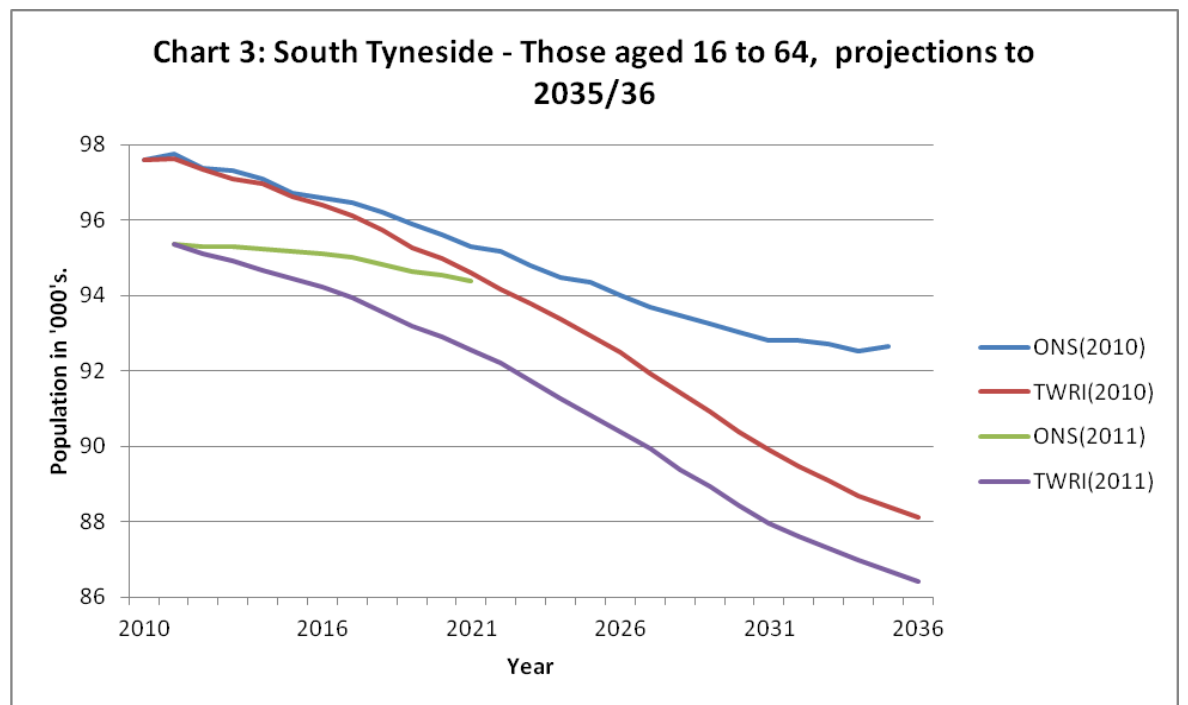
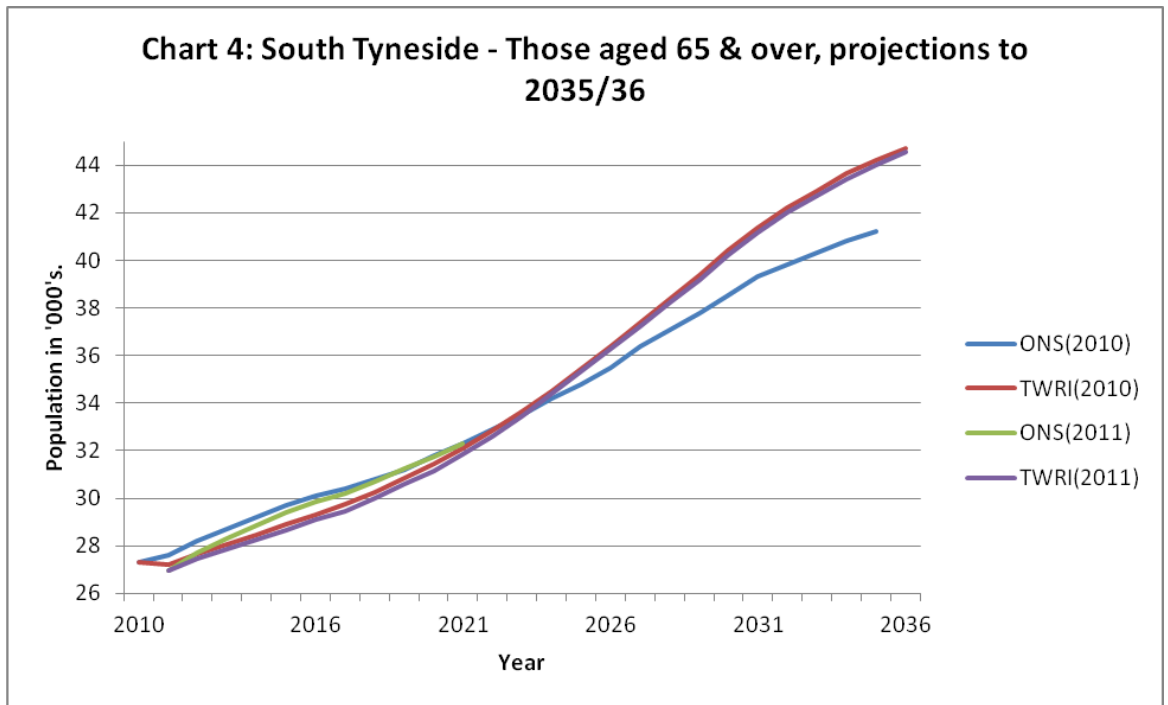


Chart 4, below, shows the four projections, for those 65 or over; all projections show an increase in numbers; the two TWRI give almost identical results; the ONS (2010-based) a lower long-term figure. (There is not sufficient ONS-2011 based results to show how, in relation to the other three projections, it would continue beyond 2021.)

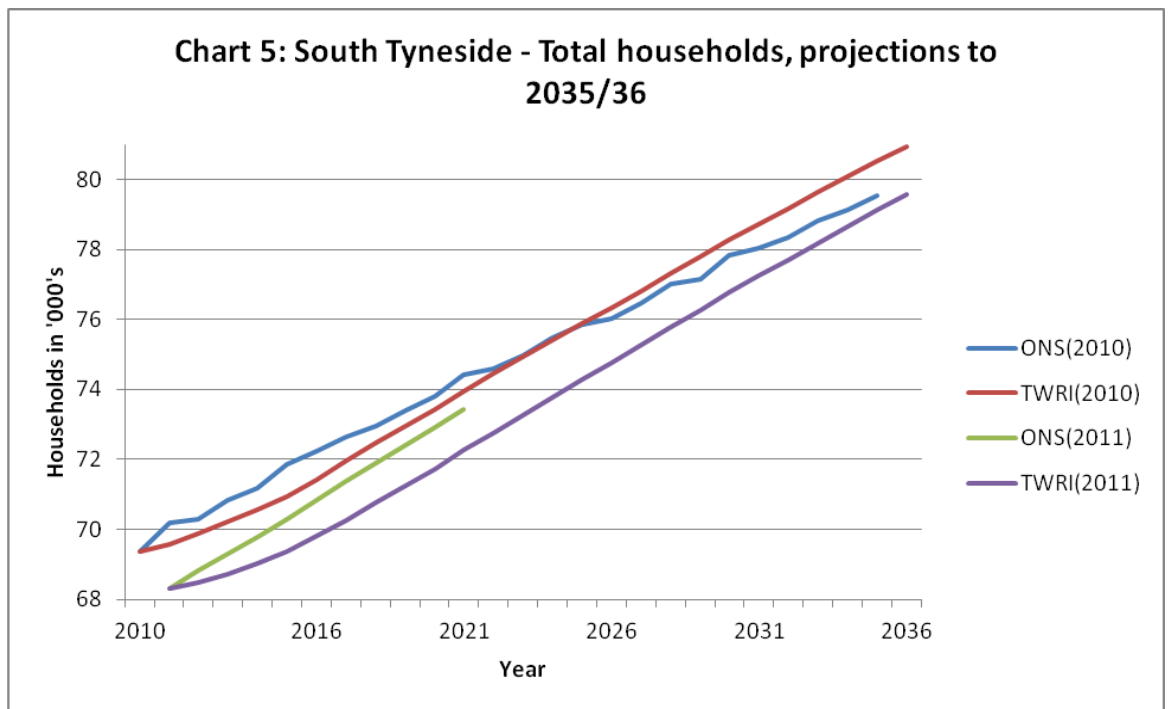


Projected households

In relation to the projected number of households, with the exception of the ONS-2011, the short-term growth to 2021 is expected to be between 400 and 450 per year. [The ONS - 2011 based figures imply a growth of over 500 per year; this would appear to be too high.] In relation to the projected number of households to 2035/36, TWRI expect that there would be between 79,000 and 80,500 households. (See table 3 and chart 5, below.)

Table 3 Projected number and growth of households

End point		Number and Growth			
		2010-based (=69,400)		2011-based (=68,300)	
		ONS	TWRI	ONS	TWRI
2021	Number	74,400	75,900	73,400	72,300
	Growth	+5,100	+4,600	+5,100	+3,900
2035	Number	79,500	80,500	-	79,100
	Growth	+10,200	+11,200	-	+10,800





- 1. INTRODUCTION 3
 - 1.1 Population and Household projections 3

- 2. SUMMARY OF RESULTS..... 3

- 3. COMPARISON WITH PREVIOUS PROJECTIONS 5
 - 3.1 Comparisons of the various projections. 5
 - 3.2 Comparing the ONS and Option 4 results 2011 to 2021. 5
 - 3.3 Comparing the Option 4 results 2011 to 2035/6. 5

- 4. COMPARISON WITH SURROUNDING AREAS AS A WHOLE 6
 - 4.1 Growth under ONS and Option 4..... 6
 - 4.2 Projected proportion of total populations..... 6

- 5. PROJECTED AGE STRUCTURE UNDER THE VARIOUS SCENARIOS 7
 - 5.1 Projected proportion of population who are aged under 16. 8
 - 5.2 Projected proportion of population who are aged 16 to 24. 8
 - 5.3 Projected proportion of population who are aged 16 to 64. 8
 - 5.4 Projected proportion of population who are aged 65 or over. 8

- 6. HOUSEHOLD PROJECTIONS..... 8
 - 6.1 Projected number of households 2011 to 2036 8

- 7. SUMMARY AND CONCLUSIONS 9
 - 7.1 Summary 9
 - 7.2 Conclusions 10

- Appendix Notes in relation to projecting numbers of households 11



1. INTRODUCTION

1.1 Population and Household projections

This report updates the 2010 based population and household projections, produced by TWRI in June 2012, for South Tyneside. This update uses the Office for National Statistics (ONS) mid-2011 population estimates. This is following the publications by ONS of the first 2011 Census data and the mid-year estimates (first version) of populations for 2011.

ONS have produced interim national and local 2011 based population projections; see <http://www.ons.gov.uk/ons/rel/snpp/sub-national-population-projections/Interim-2011-based/stb-2011-based-snpp.html>. We use these for comparison purposes. These have been projected for the period 2011 to 2021.

As ONS, we start with the mid-2011 Census based mid-year estimates for 2011. 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. However, like ONS, no attempt has been made to update the migration, fertility and mortality figures, as used in the previous projection, as at the time of producing this report, this data was not yet available.

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.

The general population model used starts with the population as estimated by ONS, for mid-2011, by single year of age and gender. To project the population to mid 2012, from 2011, 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.

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

2. SUMMARY OF RESULTS

The following table give the population and household projections, to 2036, for South Tyneside using option 4 (Opt4), using as a base the 2011 Census-based population estimates. It compares, to 2021, the results of the ONS projections. The TWRI projection shows a slower level of growth than that produced by ONS, with a small growth of 3,000 from 2011 to 2036.

¹ The difference between the options relates to the assumptions about future migration. Option 4 uses 5 years weighted NHSCR + 3 years unweighted IPS. For more details see the previous report.



Table 1 Summary of ONS results and results under Option 4

Estimates:	Population		Households²	
			ONS	TWRI³
2011	148,200		<u>67,200⁴</u>	68,300
Projections:				
	ONS⁵	TWRI		
2016	151,000	148,800	70,900	69,800
2021	153,900	150,000	73,400	72,300
2026		150,900		74,800
2031		151,200		77,200
2036		151,200		79,600
Change				
2011-2021	+5,700	+1,800	+5,100	+3,900
2011-2036		+3,000		+11,300
Average change per year				
2011-2021	+ 570	+ 180	+510	+390
2011-2036		+ 120		+450

The key element of the household part of this table is not the absolute number, but the implied number of extra households resulting from the increase in population size and the expected reduction in average household size over the projection period.

The increase in projected numbers of households arises because of households have, in the past, become smaller and this trend is expected to continue and people are living longer increasing the likelihood of living alone. Hence for any particular age group the headship rates will continue to rise and that the population is ageing and those over 75 tend to have higher headship rates (e.g. they are more likely to live alone) is increasing; overall increasing the number of households. In particular although the extra population over the period 2026 to 2036 is just 300 [151,200 less 150,900] the projected number of households is expected to rise by 4,800 [79,600 less 74,800].

² See Appendix – Note 1 for more details.

³ See Appendix – Note 2 for more details.

⁴ Source: Office for National Statistics (ONS), 2011 Census figure for households containing 'Usual residents'. See Appendix – Note 3 for more details; in particular about the expected growth in numbers of households to 2021.

⁵ Source: Office for National Statistics (ONS). To avoid, in the rest of this report, excessive references to ONS, the following are ONS figures: the number of households containing usual residents (Census 2011), the mid-year population estimates (2011) and projections to 2021, both by age. The remainder are either derived from ONS figures or calculated for purposes of this TWRI report. In line with ONS policy, we will round all numbers to the nearest 100; however, where possible we will calculate ratios using unrounded numbers.



The ONS figures (and expected reduction in household size) imply that there will be an extra 500 households, every year, over the 10 year period to 2021. This contrasts with the option 4 figures which imply a growth of about 400 per year to 2021 and, overall, around 450 to 2036.

3. COMPARISON WITH PREVIOUS PROJECTIONS

In this section we compare the results of the ONS projections (2010 and 2011 based) with the option 4 results for both the 2010 indicative and 2011 mid-year estimates.

3.1 Comparisons of the various projections.

Table 2 Summary of population projections under the various options

(1)	Base=2010			Base=2011	
	(2)	(3)		(4)	(5)
<u>Year</u>	<u>ONS</u>	<u>Opt4</u>		<u>ONS</u>	<u>Opt4</u>
2010	151,300	151,300			
2011	151,600	151,200		148,200	148,200
2016	153,500	152,200		151,000	148,800
2021	155,400	153,600		153,900	150,000
2026	157,000	154,600			150,900
2031	158,300	155,000			151,200
2035	159,300	155,100			151,200
2036		155,100			151,200
<u>Change 2011-2021</u>					
Numbers	+3,800	+2,400		+5,700	+1,800
Percentage	+2.5%	+1.6%		+3.8%	+1.2%
<u>Change 2011-2035</u>					
Numbers	+7,700	+3,900			+3,000
Percentage	+5.0%	+2.5%			+2.0%

3.2 Comparing the ONS and Option 4 results 2011 to 2021.

The percentage growth as given in column 4 (3.8%) is greater than that given in column 2 (2.5%), suggesting that ONS now expect an even bigger growth in the medium-term (2011 to 2021). This contrasts with the growth under option 4 which was just 1.6% (column 3) marginally reduced to 1.2% (column 5) using the more up-to-date interim figures.

3.3 Comparing the Option 4 results 2011 to 2035/6.

The percentage growth as given in column 3 (2.5%) is a little greater than that given in column 5 (2.0%), suggesting that the population is going to grow at a slower rate than option 4 suggested



using the 2010 figures. In summary, the ONS figures seem to project higher figures for the area, than does Option 4.

4. COMPARISON WITH SURROUNDING AREAS AS A WHOLE

Using the ONS and Option 4 projections, we compare the growth of South Tyneside (from 2011 to 2021 and to 2036) with the projected growth of Tyne & Wear, as a whole, the North East Local Enterprise Partnership area (L.E.P.) and the whole of the North East.

4.1 Growth under ONS and Option 4

Table 3a Summary of comparison population projections with Tyne & Wear's, the L.E.P and the North East's population projection, under ONS projection and option 4

Source	Year		South Tyneside	Tyne & Wear	L.E.P	North East
Mid-year estimate	2011	Number	148,200	1,104,100	1,933,400	2,596,400
ONS projection	2021	Number	153,900	1,160,000	2,031,000	2,723,800
		% Growth 2011 to 2021	3.9%	5.1%	5.0%	4.9%
Opt 4 projection	2021	Number	150,000	1,155,700	2,020,400	2,707,200
		% Growth 2011 to 2021	1.2%	4.7%	4.5%	4.3%
Opt 4 projection	2036	Number	151,200	1,226,400	2,124,300	2,829,200
		% Growth 2011 to 2036	2.0%	11.1%	9.9%	9.0%

Although the area is expected to grow, the growth, in South Tyneside, is expected to be considerably less than Tyne & Wear as a whole, the North East L.E.P area and the North East as a whole. For example, whilst the area is, by ONS, projected to grow, by 2021, to 153,900 (a growth of 3.9%), the North East as a whole is expected to grow by 4.9% during this period.

4.2 Projected proportion of total populations.

Table 3b South Tyneside's estimated (2011) and projected proportion (2021 & 2036) of the larger areas: Tyne & Wear, the L.E.P and the North East

Source	Year	Tyne & Wear	L.E.P	North East
Mid-year estimate	2011	13.4%	7.7%	5.7%
ONS projection	2021	13.3%	7.6%	5.6%
Opt 4 projection	2021	13.0%	7.4%	5.5%
Opt 4 projection	2036	12.3%	7.1%	5.3%



The table shows that for 2011, South Tyneside’s population was 13.4% of the County of Tyne & Wear; under Option 4 this is expected to reduce to 12.3% by 2036.

Comparing, to 2021, the ONS and the Option 4 projections shows that the TWRI results project South Tyneside’s population to be a smaller proportion of the larger areas, primarily because the TWRI projection, for South Tyneside, is less than the ONS projection. This mirrors previous experience when ONS have frequently over-estimated the areas projected population and then had to reduce the figures.

5. PROJECTED AGE STRUCTURE UNDER THE VARIOUS SCENARIOS

This section shows the projected age changes, for each of the six options, in four age groups, a) under 16, b) 16 to 24, c) 16 to 64 and d) 65 and over. [More details are given in the associated XL spreadsheets.]

Table 4 Summary of age groups for South Tyneside under the ONS projection and option 4

Source	Year		Under 16	16 to 24	16 to 64	65 & over
Mid-year estimate	2011	Number	25,800	16,900	95,400	27,000
		Percentage	17.4%	11.4%	64.4%	18.2%
ONS projection	2021	Number	27,200	14,100	94,400	32,300
		% Growth 2011 to 2021	+5.3%	-16.6%	-1.0%	+19.8%
		Percentage	17.7%	9.2%	61.3%	21.0%
Opt 4 projection	2021	Number	25,600	13,900	92,600	31,800
		% Growth 2011 to 2021	-1.0%	-20.3%	-2.9%	+18.1%
		Percentage	17.1%	9.0%	61.7%	21.2%
Opt 4 projection	2036	Number	20,200	13,700	86,400	44,600
		% Growth 2011 to 2036	-21.9%	-19.1%	-9.4%	+65.3%
		Percentage	13.3%	9.1%	57.2%	29.5%

The table, above, shows, for example, that there were an estimated 25,800 under 16’s in South Tyneside in mid-2011. These formed 17.4% of the total population.

ONS projected this group to increase, by 2021, to 27,200, a growth of 5.3%. At that time this group will form 17.7% of the population. However, option 4 projected a marginal decrease (of 1.0%) in this group, by 2021, to 25,600; at this time this group would form 17.1% of the total population.



5.1 Projected proportion of population who are aged under 16.

As noted above this group are expected to remain about the same level until 2021 and then generally decline, in size, until 2036. They are expected to form a reduced proportion of the population.

5.2 Projected proportion of population who are aged 16 to 24.

This age-group will reduced over the period 2011 (currently 11.4% of the population) to 2021 (9.2%) and then it is expected to stabilise at the lower level throughout the projection period.

5.3 Projected proportion of population who are aged 16 to 64.

As is nationally well-known, this age group will gradually form a smaller proportion of the population, reducing from 64% (in 2011) to 57% (in 2036).

5.4 Projected proportion of population who are aged 65 or over.

Again as is nationally well-known, this age group will gradually form a much larger proportion of the population, increasing from 18% (in 2011) to nearly 30% (in 2036).

6. HOUSEHOLD PROJECTIONS

This section looks at the projected change in the number of households during the period to 2036. In this section we have used the ONS figures to provide figures for 2021. (Note: as mentioned earlier the figures headed 'ONS' [with the exception of the first figure] are **not determined by ONS**; the figures use the ONS projected population together with the 2006 projected headship rates to determine the projected number of households determined by the ONS projected population data.)

6.1 Projected number of households 2011 to 2036

The number of households is expected to grow by around 11,300 (option 4, column 5, table below) through the period to 2036. Using the ranges around average household size as proposed in the previous report, gives a range of 500 either side of this figure, a range of 10,800 to 11,800.

Contrasting columns 2 and 3 shows that (relying on the headship rates) there would, from the latest projections, be an extra 900 households in the 10 year period 2021. This compares, (examining columns 4 and 5) with the growth under option 4 which is less by 700 [=4,700-4,000] to 2021, and less by 600 [=11,900-11,300] to 2036.

Table 5 Summary of projections for number of households under the various options

Year	ONS ⁶	ONS		Opt4 ⁷	Opt4
(1)	(2)	(3)		(4)	(5)
2010	68,700			68,500	
2011 (Usual residents definition)		67,200			
2011 (Headship rates definition)	69,100	68,300		68,700	68,300
2016	71,200	70,900		70,700	69,800
2021	73,300	73,400		73,400	72,300
2026	75,100			75,900	74,800
2031	76,800			78,300	77,200
2036	78,600			80,600	79,600
<u>Change 2011-2021</u>					
Numbers	+4,200	+5,100		+4,700	+4,000
Percentage	+6.1%	+7.5%		+6.8%	+5.9%
<u>Change 2011-2036</u>					
Numbers		-		+11,900	+11,300
Percentage		-		+17.3%	+18.1%

7. SUMMARY AND CONCLUSIONS

7.1 Summary

- a) We have projected South Tyneside's population under the option 4 scenario, starting with the ONS mid-2011 estimate as a base.
- b) We have compared these scenarios with the ONS mid-2010 indicative figures and ONS (projected to 2021) and Option 4 projections (projected to 2036). These scenarios have, in general, given different results; the ONS model gives a higher figure (in 2021, 153,900) than the other scenario (150,000) (See table 2).
- c) In the light of previous results, we still recommend that Option 4 is considered to be the most likely projection, primarily because it appears to have stability.
- d) In relation to the projected populations of Tyne & Wear, the North East Local Enterprise Partnership and the North East as a whole, South Tyneside's percentage population growth is less than these areas; consequently it forms a smaller proportion of these areas. (See table 3a and 3b).

⁶ This column is taken from the previous report, appropriately amended, and is useful for comparison with the current ONS projection. Note for both ONS columns these are not produced by ONS, they are determined using ONS population estimates, projections and appropriate headship rates.

⁷ This column is taken from the previous report, appropriately amended, and is useful for comparison with the current option 4 projection.



- e) In terms of those aged under 16, Table 4 shows that, overall, the numbers change little until 2021, but after this there is a steady decline. A more significant reduction, to 2021, for those aged 16 to 24 (inclusive), at least 16% (Table 4).
- f) For adults (those aged 16 to 64) this is generally a reduction, but smaller, option 4 leads to a reduction of just 9% to 2036. (See Table 4).
- g) Not surprisingly, given the nature of the population and an increase in longevity, the number of the elderly is expected to increase, to 2036, by around 65%. (See Table 4).
- h) It is important to appreciate as was noted in the previous report that these projections rely on continuing net international in-flow to maintain the small growth.
- i) We have used 2008 projected headship rates to project the number of households. We project that, provided there is sufficient appropriate accommodation; the number of households will increase, by 2021, by around 4,000. This is smaller than that which would be required by the ONS projection (5,100). (See Table 5). Table 5 also shows that the projected number of households for 2036 is an increase of some 10,800 to 11,800 over the number in 2011.

7.2 Conclusions

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

- a) that we have been able, using the ONS 2011 Census figures, update the figures produced in the previous report (June 2012),
- b) that if the net international in-flow continues as it did in 2007 to 2010, then the population is projected to increase, primarily as a result of this net in-flow,
- c) any population increase is likely to be much less than projected by ONS,
- d) that under any of the scenarios, the population will become more elderly, and
- e) that the projected population increase and anticipated fall in average household size, as explained in the previous report, will lead to more households.



Appendix Notes in relation to projecting numbers of households

This appendix provides more detailed notes about projecting the total number of households for ONS to 2021 and for TWRI to 2036, comparing this with the previous report.

A1. Note 1

For the number of households, we have used the 2008 based projected headship rates, provided by the University of East Anglia for the Communities and Local Government department of Central Government (CLG) for 2011, and then used the projected headship rates to 2033 and extrapolated to 2036. Note that although, we use the 2011 Census household figures as a base, the projected figures (using the ONS population projections) are not ONS projected numbers of households.

For the previous report we assumed that the headship rates applied to the household population. We no longer believe this to be appropriate and, for this analysis, apply the headship rates to the *total* population. This would generally make little difference to the *growth* in number of households. However, we had assumed that the institutional population would grow by some 760 over the period 2010 to 2036. We are now not sure about this growth; if none of this arises the growth in households would be an extra 400.

A2. Note 2

Whilst the ONS number of households is less than that implied by the headship rates, at least part of this difference could be accounted for by a difference in definition of a household. The ONS figure (67,200) only includes those households where there is one or more persons 'usually resident'; the figure based on headship rates could allow for the situation that there is someone present but that person is not defined as 'usually resident', e.g. a student, living alone, on a course which is less than 12 months in duration [e.g. September 2010 to June 2011]. We do not yet know how many such occupied household spaces there were. However, as noted in the text the actual numbers are not of overall importance, it is the change which is the key for policy implications.

A3. Note 3

Source: Office for National Statistics (ONS), 2011 Census figure for households containing 'Usual residents'. Note subsequent figures in this column use the figures as calculated using headship rates and therefore the change is based on differences to 68,300 and not 67,200.