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*Evaluating the validity of the
population and household projections
underpinning the Wirral Local Plan:
A response to public submissions*

University of Liverpool
Centre for Sustainable and Resilient Cities
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About the Centre for Sustainable and Resilient Cities.

The Centre for Sustainable and Resilient Cities (SaRC) brings together academics from across the University of Liverpool to work collaboratively on the global challenge to make our cities more sustainable and resilient, in the face of climate change, resource depletion, population growth, urbanisation and migration.

To develop solutions to these issues, two things are essential – firstly, that academics from different disciplines cooperate to think outside the ‘disciplinary silos’ that often constrain us; and secondly, we have to work with partners from other sectors.

SaRC includes over 40 research active experts covering topics such as population modelling, housing economics, urban design, environmental assessment, development economics, planning practice, architecture, regional governance and local economic development.

SaRC is able to bring together new configurations of researchers responding to particular demands in a timely organic structure to analyse and advise cities and city regions, whether locally, nationally or internationally. We search for ways to implement changes to how those cities and regions function to make them more sustainable and resilient; and use our best science and social science expertise to meet the future challenges to cities from climate change and resource depletion.



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Executive Summary

- This evaluation of existing population and household projections, by academics in the Centre for Sustainable and Resilient Cities, University of Liverpool, has been commissioned by Wirral Metropolitan Borough Council in the context of consultation on development options prior to creation of the Wirral Local Plan.
- There is substantial evidence that projecting housing supply requirements accurately is a complex task. The most theoretically robust researched approaches to housing projections require substantial input from the local population and detailed knowledge of the extant housing stock and demographic characteristics.
- This level of evidence is not operationalised in the national government housing need calculations, the public submission nor other projections for Wirral seen by the authors since the Strategic Housing Market Assessment in 2016.
- Changes to the ONS' projections of future population for Wirral have occurred regularly, and whilst recent changes to improve the ONS methodology have been undertaken accurate estimation remains challenging.
- The recent (2018) projection from ONS suggests a lower trend in population growth than the 2012 projections due to stalled life expectancy and reduced migration, but migration figures in particular remain uncertain.
- Estimating household numbers is predicated on accurately estimating the number of persons per household. The most accurate methods account for the age structure and headship rates of the population in estimating household numbers.
- Housing targets are based on forecasts of future household numbers and housing demand which are inherently uncertain.
- The projections produced by the Office for National Statistics offer the following advantages:
 - o Produced using a nationally consistent methodology
 - o Data on births, deaths, migration and household formation are the most extensive and up to date
 - o Sophisticated methodology, including consideration of population age structure and inter-authority migration impact
 - o The methodology is under constant review, introducing improvements whenever possible.
- However, the official projections are not problem free, with issues such as:
 - o The reliability of net migration estimates.
 - o Updated projections every two years can vary markedly from each other due to their sensitivity to changes in recent trends and updating of methodology.
 - o The official projections assume that the recent past provides a good guide to the future, which is not necessarily the case.
 - o The projected number of households rolls forward any reduced household formation activity arising from inadequate housing supply.

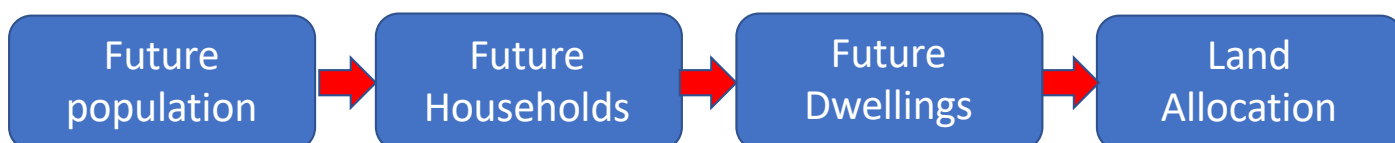
1.0 Introduction

1.1 Over the course of September and October 2018 Wirral Metropolitan Borough Council ran a consultation on Development options relating to the Wirral Local Plan. The Wirral Local Plan is underpinned by Wirral’s 2016 Strategic Market Housing Assessment. At the heart of the development options is a proposal to release Green Belt land to accommodate new housing. The local authority received many responses as part of the public consultation, one of which challenged a fundamental premise underpinning the Development Options consultation, regarding the number of new houses that need to be built to meet housing need within the 15-year window of the Wirral Local Plan (2020-2035). The key points made in the response included:

- The Development Options consultation is based upon official population and household projections which are out-of-date, with more recent official projections suggesting more modest population and housing growth
- A straightforward extrapolation of past trends suggests far lower population and household growth than that suggested by even the latest official projections
- The official projections over-estimate future population growth mainly because they include unrealistically high assumptions about future net migration flows into the Wirral Metropolitan Borough
- Even accepting the official population and household projections, the amount of housing need these imply is less than the Local Plan suggests

1.2 In response to this public submission, Wirral Metropolitan Borough Council commissioned us, as a group of independent academics, to provide a review of these claims. This document summarises our findings. Section 2 of the report sets out the contextual background to understanding housing supply requirements, whilst section 3 provides a brief overview of issues in housing needs modelling. To help clarify matters, our review is organised to follow the logic underpinning the Local Plan and Development Options proposals (see stages 1 and 2 of Figure 1); with future population discussed in section 4 and future households in section 5. Section 6 is a short conclusion.

Figure 1: Local Plan and Development Options Logic



2.0 Contextual Background

- 2.1 Before unpacking the official approach to computing housing need it is important to note that any attempt to do this takes place within the context of past and present political decisions. This is an important point as one of the recurring themes from the public submission was to question the objectivity of the statistical methods employed by the Office for National Statistics in determining household formation and corresponding estimates of housing demand. In making this point the current approach undertaken by Wirral Metropolitan Borough Council in applying the national guidelines was portrayed as largely political.
- 2.2 In this paper we seek to explore the reliability of the ONS methodology relative to some of the suggested alternative methods proposed in the resident submission we were asked to review. However, it must first be noted that housing policy is no more political today than it has been at any previous moment. Indeed, any current estimate of household formation will inevitably be coloured by historic political decisions that have affected housing supply.
- 2.3 The definition of housing supply requirements (and the sub-group of affordable housing need) is contingent upon the political context of the era in which they occur. As such the precise focus of the measured entity varies according to particular emphases (see Linneman and Megbolugbe, 1992 or Bramley, 2006 for discussion on how definitions of housing affordability are constructed) for particular groups (whether by space or household characteristics). The concept of an objective assessment of housing supply requirement, therefore, should be seen within the context of political discourse which defines the terms of reference for the assessment. As such, the concept of housing need is normative, derived from the values of the assessor regarding issues that have a macro political context. For example, the question of the quality of the existing housing stock inhabited by household which is deemed acceptable is variable between nations – but, crucially, is determined at this political scale (Holmans, 2000).
- 2.4 In the broadest sense housing can be understood as an asset class that is stratified by distinct typological categories (tenure). How these categories relate to one another when understood collectively as a geographically specific market represents one of the fundamental debates in housing economics. This is further problematised when we consider that there are important spatial relationships between contiguous, or otherwise related, housing markets – no housing market can be understood in complete isolation.
- 2.5 Wirral is a good example of the point just made. Whilst social rented housing is distinct from owner occupation, they co-exist within the housing system in Wirral. National housing policy in the UK has historically fluctuated hugely in its support for different tenures. The roll out of large-scale council housing developments in the 1950s and 1960s contrasts markedly with the subsequent introduction of the Right to Buy initiative in the 1980s. More recently Help to Buy reveals a shift in emphasis towards supporting owner occupation. However, whilst individual policies exhibit support for particular tenures, there has historically been no clarity about the overarching national strategy for tenure support (e.g. mixed tenure policy in the UK; Tunstall, 2003). The impact of this is that historically housing supply has fluctuated by tenure nationally and in Wirral, which has had differential impacts upon particular population groups, and has potentially impacted household formation within these groups.
- 2.6 The second classification is in relation to identification of the geographic boundaries of a housing system. There is an extensive literature on the definition of housing market boundaries and their adjustments over time. Whilst there is some disagreement on methods to define these boundaries (see, for example, Jones, 2002) it is clear that housing markets are spatially malleable, and that arbitrage occurs as migration patterns change across and between sub-regional geographies. It is widely recognised that within housing markets there is sizeable variation in pricing and housing characteristics, normally segmented into discrete housing submarkets (originally conceptualised as housing units which are substitutable for each other, by space or unit characteristics) (see Goodman and Thibodeau, 1998). Research on housing submarkets has shown that neither space nor unit characteristics independently determine house price substitutability, but that when combined together to consider both supply and demand can reveal a high degree of explanatory power. As such housing submarkets are reconfigured continually according to both spatial and structural factors (including supply) simultaneously according to any changes in the



population structure and their housing preferences (Watkins, 2001). Housing submarkets may exhibit either stability or instability in their spatial structure over time (Leishman, 2009), which may be a product of the level and location of housing supply through planning policy as much as demand. This means that historic, current and future changes in the population structure have had, and will have in the future, both spatial and unit characteristic impacts upon effective demand and therefore the construction of housing submarkets in Wirral.

- 2.7 In addition to changes in the tenure and housing submarket classifications in Wirral and their respective emphases, one fundamental way in which current estimates of household formation will be shaped by past political decision making can be found in the historic suppression of household formation. The introduction of Regional Planning Guidance (in the North West, RPG 13) in 2003 and its successor, the North West Regional Spatial Strategy from 2004-2010, set a policy template that channelled new housing development into the regional urban centres of Liverpool and Manchester. Constraining supply in neighbouring local planning authorities was consistent with this broader regional policy objective of stabilising inner urban neighbourhoods that had experienced longer-term decline. In the worst cases this broader policy context was supported by bespoke policy interventions, such as the Housing Market Renewal Initiative, which was implemented in some inner urban markets in an attempt to reverse market collapse.
- 2.8 These policy choices were the outcome of political decision making. Moreover, it is this historical

political decision making that sets the template within which present decision making takes place.

- 2.9 Had this broader historical policy context designed to engineer urban regeneration not applied it is highly likely that household formation in local planning authorities such as Wirral would have been significantly greater. Since the Regional Spatial Strategies were revoked in July 2010 by the Coalition Government the housing policy landscape has changed fundamentally – the apparatus of regional governance has been dismantled, the Regional Spatial Strategies revoked, and the goal of engineering urban regeneration and renewal through control of the housing supply no longer applies.
- 2.10 These are not the choices of the Office for National Statistics or any individual local authority – they are the outcome of legislative changes made by national government.
- 2.11 Consequently any present day projection of household formation in a local authority area should, to be as objectively accurate as possible, reflect both current demographic trends and also the extant demand that was historically suppressed as an outcome of the broader context of national policy as it affects housing. The approach taken by the ONS explicitly seeks to make a connection between both demographic change and this extant housing demand in arriving at an assessment of housing need. In what follows we aim to explore how differing approaches to modelling housing need proceed and what accounts for variation between the method proposed in the public submission and that employed by the ONS.



3.0 Modelling housing needs

3.1 As with many areas of housing and planning policy there have been several variants of official methods to model housing need over the past 20 years. At various times the methodological robustness of these models has waxed and waned. However, whilst some official methods have placed greater emphasis on local data collection and others the application of national databases, there is some disagreement between methodological approaches to modelling housing need from different academic perspectives, with at least four variants of approaches identified in a substantial review of housing need models commissioned by the last national Labour government (Bramley et al., 2010).

3.2 These approaches vary from direct demographic projections, through macro-economic driven models, affordability based and broader housing condition models. The scope of drivers of housing need may be quite broad and very complex to assess. They could theoretically include groups such as: concealed households (household units living with 'host' households); sharing households; households in unaffordable accommodation; overcrowded dwellings; unsuitable accommodation (e.g. some elderly households in high rise flats); homelessness; unsatisfactory housing condition (Bramley et al., 2010). The interplay between these facets of need, extant stock and their relationship with household suppression and future formation would all theoretically impact upon a housing need assessment. Some specific assessments have taken multiple facets identified through a range of intensive methods such as household surveys and housing condition assessments to model

future housing requirements (e.g. Sheffield SHMA, 2013).

3.3 The current housing assessment modelling prescribed by national government is most closely aligned with the first of these types of model; that of demography projections with an inflation to account for the historic suppression of households through a lack of affordable housing. It does not account for rapid changes in household formation through behavioural traits linked to housing conditions, stock, supply or market dynamics. However, the recent consultation raises a question about the extent to which household projections alone should determine housing need:

“population changes are only one aspect of the driver for housing supply. Rising incomes, changing social preferences and factors such as real interest rates and credit availability contribute to demand for housing.”
(MHCLG, 2018)

3.4 The public submission on housing supply requirements in Wirral follows a similar logic to the demography-based household projections (in line with government guidelines) as the basis for understanding housing supply. It does not explicitly account for issues of affordability, housing quality, tenure or aspirations that have been identified as significant in other housing need modelling approaches.

4.0 Future population

4.1 One of the public submissions offers an alternative population projection to the official projection at the heart of the Wirral 2020-2035 Local Plan. The projections differ for two reasons: a different interpretation of past trends and differences in methodology. Both are reviewed below. Also considered is the difference between the official population projections used as the basis for the Local Plan and the most recently released official projection.

Past trends

4.2 As Figure 2 shows, official data from the Office for National Statistics suggest that, following a period of population decline dating back to the 1970s, the population of Wirral stabilised in the first five years of the new century and has subsequently started to grow once more.

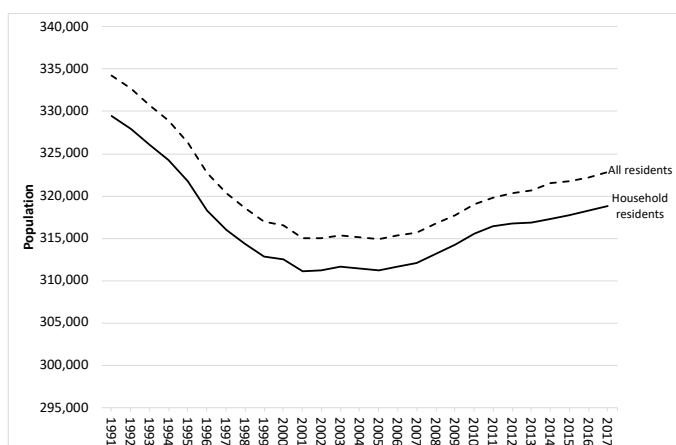


Figure 2: Recent population trends in Wirral Metropolitan Borough.

Sources: ONS (2018) Mid-Year Estimates for counts of all residents; ONS (2018) 2016-based household projections for local authorities and higher administrative areas in England, Table 246.

4.3 One criticism made by the public response relates to the reliability of these figures. In particular, it was noted that an earlier series of estimates of the mid-year population over the period 1991 to 2011 had been substantially lower than those shown in Figure 2, and had in fact indicated a continued population decline over the period 2001 to 2011.

4.4 Mid-year estimates are created by taking the most recent Census figures and rolling them forward through the addition of the annually observed count

of births and deaths; and through the addition of a best estimate of net migration into the borough. The uncertainty associated with the estimates of net migration accumulates over time, meaning that the mid-year estimates furthest away from the Census year start-date will be the least reliable.

4.5 The results from the 2011 Census provided an opportunity to reappraise the then existing series of mid-year estimates. It was found that the rolled-forward mid-year estimate of the population for Wirral MBC in 2011 was substantially lower than that captured by the 2011 Census. Consequently the historic series of mid-year population estimates was corrected to incorporate this new information, the result of which can be seen in Figure 2.

4.6 The 2016 Wirral Strategic Housing Market Assessment agrees with the Office for National Statistics in attributing the need for this adjustment to two factors. First, and most importantly, the 2001 Census is believed to have undercounted the population of the Wirral, leading to an inaccurate starting point for the rolled forward estimates. Second, net domestic and international migrant flows to Wirral in the first years of the 2000s were relatively poorly estimated.

4.7 Since 2011 The Office for National Statistics has taken steps to address the causes of the 2001 Census count and the relatively poor estimation of net migration flows. Specifically, the 2011 Census used a more robust design which particularly focussed resources on the 'hardest to count' areas, whilst improved data are now routinely collected on both international and internal migration. As a result the mid-year estimates from 2011 onwards should be more reliable than their 1991-2011 counterparts.

4.8 Despite these changes, accurate estimation of net flows between Wirral and other parts of the UK and overseas remains challenging. Notwithstanding this caveat, the official mid-year estimates provided by the Office for National Statistics still provide the best available guide to current and recent population trends. If doubts remain, the indicated recent turn around in the Wirral from population decline to population growth could be verified by the local authority through an analysis of a variety of local data sources including school rolls, electoral rolls and council tax records, as well as through centrally provided data such as the number of state benefit and pension claimants.

2012-based vs. 2018-based projections

4.9 The Wirral Local Plan and Development Options consultation is based upon housing needs identified in the Wirral 2016 Strategic Housing Market Assessment. This assessment itself used as a starting point the official ‘2012-based’ population projections provided by the Office for National Statistics. These project the population of the Wirral forward from 2012 on the basis of local trends in births, deaths and migrations observed over the five-year period running up to 2012. These projected trends were used to allocate Wirral a share of the projected national population. The national population was in turn projected on the basis of trends over the last 25 years, factoring in expert input regarding the plausibility of the projected trends.

4.10 Every two years the Office for National Statistics issues a new set of projections. These are based upon the most up-to-date data. The updated projections reflect recent changes in trends and may also incorporate changes in methodology made in the light of user feedback and changing data availability.

4.11 The most recent official projection was issued in September 2018, based on observed trends up to 2016. A public submission to the Development Options consultation noted that the most recently updated projection is for a lower population than that assumed by the Local Plan.

4.12 Figure 3 compares the 2012-based population projection with the most recent projection, the 2016-based projection issued in September 2018, and with the intervening 2014-based projection. Using the 2016-based projection the resident population of the Wirral in 2035 (the end of the Local Plan period) is projected to be 2,530 persons less than the number suggested by the 2012-based projections, and 3,759 less than suggested by the 2014-based projection. Although the difference between the highest and lowest of these three projections represents only about 1% of the projected private household population in 2035, it also represents a greater than 50% difference in the projected growth in population numbers over the Local Plan period of 2020 to 2035.

4.13 The reduction in the size of the projected population in the 2016-based projection is due to:

- A recent stalling in improved life expectancy, attributed in the main to deteriorating social and health care provision for the vulnerable
- Reduced international and domestic migration, attributed to lower than hoped for recovery from the 2008 economic crash and ‘Brexit’ uncertainties

4.14 At this point in time it is not possible to say which of the 2012, 2014 or 2016-based projections will turn out to be most accurate. Nationally, is the recent five year period of slowing population growth most representative of the future? Or is it the 15-20 years of accelerating growth that preceded them? And locally, is the last five-year period the best indicator of Wirral’s likely share of future national population growth?

4.15 This highlights a key point concerning population projections, which is that they are not forecasts. A projection simply extrapolates recent trends into the future unchanged. In contrast, a forecast tries to second-guess the future. As the public submission notes, it is possible to conceive of a wide variety of possible futures. This does not, however, necessarily invalidate the use of projections. Given a lack of consensus over what that future might hold, then assuming that the (recent) past is the best guide to the future is often seen as the safest course of action.

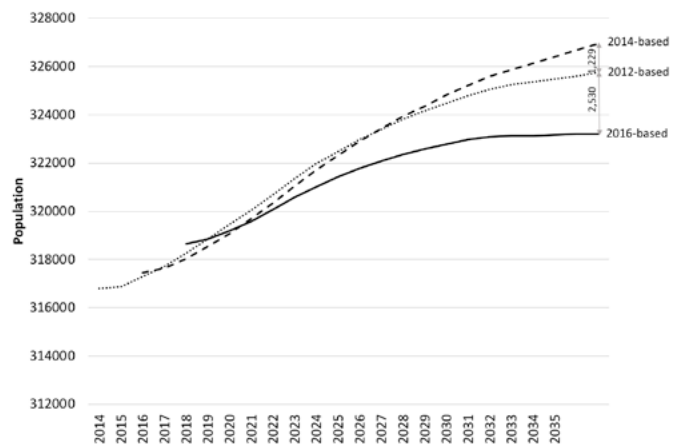


Figure 3: Population Projections for Wirral Metropolitan Borough.

Sources: ONS (2014) 2012-based Sub-national Population Projections; ONS (2018) 2016-based Sub-national Population Projections.

Trend-based vs. cohort component

4.16 A public submission provided an alternative projection of Wirral's future population. The approach adopted was to note the recent average annual increase in Wirral's population size and project this into the future, adding an extra 280 persons to Wirral's population each year.

4.17 Although intuitively appealing, there are two significant issues with this approach.

(A) No disaggregation of underlying trends

The conventional approach to population projection is to use the 'cohort component method'. For each year of the projection this involves:

- Splitting the population by age and sex
- Estimating the total number of deaths given projected age-sex specific death rates
- Estimating the total number of births given projected age-specific birth rates for women
- Estimating the total number of out-migrants given projected age-sex specific out-migration rates
- Allocating out-migrants to new destinations on the basis of previously observed inter-district flows
- Applying projected changes to 'special populations', such as armed force bases and prisons

4.18 The public submission, by treating the population as a whole ignores the critically important influence of age structure on demographic behaviour. For example, as the population of Wirral ages, more deaths can be expected, and fewer births. Likewise, if the population ages there will be fewer young adults available to out-migrate, which would change the relative balance of net migration to Wirral.

(B) Wirral is not an island

4.19 The age structure and relative sizes of all of the districts in the UK combine to determine the net number of migrants moving to (or from) Wirral. As time passes districts will change in size, some growing faster than Wirral and some slower. These changes in size will influence net flows of migrants.

For example, as Liverpool grows in size, the same proportion of its population might be expected to migrate to Wirral each year. In contrast the public submission implicitly assumes that Liverpool will send the same number of migrants to Wirral, regardless of how large (or small) the population of Liverpool becomes.

Migration

4.20 Migration is the main driver of projected population growth in Wirral. However, official projections of Wirral's future population are sensitive to the assumptions made about future migration flows. The official projections assume a positive net migration inflow that represents a notable change from the reported net out-migration over the period 2001 to 2011.

4.21 Below we explore each of these observations, in reverse order.

The change in the direction of net migration flow

4.22 Table 1 presents the most recently released set of official population mid-year estimates for Wirral, including estimates of the two key 'components of change': the difference between the number of births and deaths; and the net migration flow into the borough.

4.23 In Table 1 the counts of births and deaths may be regarded as very reliable: they are based upon registered births and deaths. The estimated migration flows are less reliable, because the UK does not require its citizens to register each move they make. Instead the estimated internal migration (i.e. flows between the districts of the UK) is based upon re-registrations with GPs. These flows can be regarded as relatively reliable – although not perfect, particularly for students and young adults who tend not to re-register with a GP when they move. The Figures in Table 1 show a switch from negative to positive net internal migration. The Wirral 2016 Strategic Housing Market Assessment suggested that the growth in net internal migration could in part be a spill-over effect resulting from recent growth in Liverpool. They may also reflect smaller out-flows of young adults caused by the gradual reduction of the size of the young adult population in Wirral.

4.24 The estimated international migration flows in Table 1 are less reliable, because of limitations in the way

that the movements of people in and out of the country are monitored. For Wirral the notable change in international migration from a large net outflow over the period 2001 to 2008 to a modest net inflow could be related to a change in the methodology used to estimate these flows. The revised method, applied to data from 2011 onwards, takes account of the fact that young adults in student cities are more internationally mobile than those living elsewhere in the country. This change in method might be expected to lead to a lower estimate of the number of young adults leaving the Wirral to move overseas.

past, the reversal is now of sufficiently long-standing (almost a decade) that it could be regarded as establishing a new trend on which future population projections should be based. This is certainly the assumption incorporated into the official population projection. If doubts remain Wirral Metropolitan Borough Council could be in a position, using its own locally held administrative data, to confirm or challenge the reversal of net migrant flows shown in Table 1.

4.25 Despite the caveats outlined above, the estimates of migration reported in Table 1 are the most reliable possible given the existing datasets with nationwide coverage available for analysis. Taken at face-value, these data suggest that, whilst there has been a reversal of migration from a net out-flow to a net in-flow that represents a marked break with the

Table 1: Recent changes in Wirral's population

Year	Births minus deaths	Net migration		
		Total	Internal	International
2002	-459	-485	-59	-426
2003	-338	-308	-67	-241
2004	-311	-927	-466	-461
2005	-194	-975	-419	-556
2006	48	-578	-126	-452
2007	-130	-517	-114	-403
2008	115	5	209	-204
2009	35	116	165	-49
2010	204	222	189	33
2011	239	-278	-336	58
2012	421	91	46	45
2013	-29	275	338	-63
2014	114	676	594	82
2015	-177	356	150	206
2016	-160	642	453	189
2017	-238	817	711	106

Source: ONS (2018) Mid-Year Estimates, Mid-2001 to Mid-2017 detailed time series, Table B3. 'Year' refers to the twelve months up to June 30th in the year stated.

5.0 Future number of households

5.1 Having established the likely future population, the next step towards estimating overall housing need is to estimate the number of households that the projected population implies.

Projection methodology

5.2 The public submission proposed converting population into households by the simple expedient of applying an average rate of persons per household. Two scenarios were considered. In one, household size is assumed to remain constant at 2.23 persons per household. A second scenario used observed trends over the period 2011-2014 to project a gradual reduction in household size to 2.14 by the year 2032. These assumptions might be seen as an over-simplification of a much more complex process.

5.3 To help place these assumptions in context, Figure 4 shows Wirral's historic and projected household sizes, as reported by the Office for National Statistics. Figures are shown only for the 2012-based and 2016-based projections because the 2014-based projections are so closely aligned with the 2012-based projections that it would be difficult to distinguish between them. At first glance, the two scenarios included in the public submission appear fairly closely aligned to the persons per household given by the 2012-based and 2016-based household

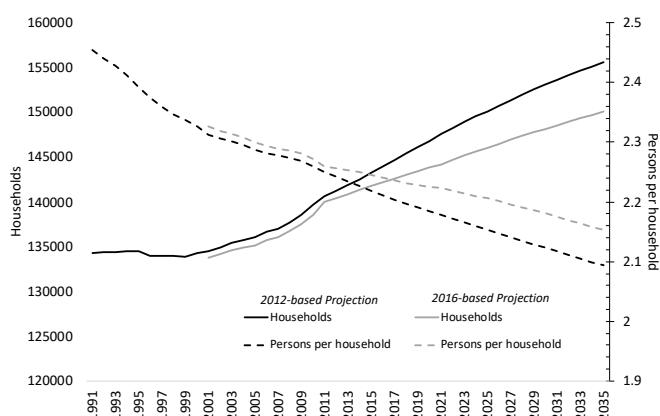


Figure 4: Wirral historic and projected households and household sizes

Source: ONS (2014) 2012-based sub-national household projections; ONS (2018) 2016-based sub-national household projections.

projection. However, a difference of only 0.01 in the projected persons per household amounts to a difference of around 700 in the projected number of households. Consequently apparently 'minor' disagreement over the average future household size leads to large differences in projected household numbers. These differences result in the public submission projecting anywhere from 950 more households to 5,100 fewer households than the official projections, depending upon the public submission scenario and official base-year projection being compared.

5.4 Whilst intuitively appealing, the approach used in the public submission to estimate future average household sizes is problematic. This is because it takes no account of Wirral's ageing age structure. This is important, because the number of persons per household varies with age. The elderly tend to live in small households (as a couple or on their own as a widow/widower), whilst the middle aged tend to live in larger households (as couples, often with children). Consequently, even if the total population of Wirral remained unchanged, an ageing population would lead to an increase in the number of households required. It is for this reason, combined with an increase in family break-up, that even though the projected population of Wirral in 2035 is lower than that in 1991, it is expected that more households will be required.

5.5 The Office for National Statistics adopts an alternative approach to projecting future household sizes using a 'headship rate' method¹. This uses the probability that a person of a given age and sex is the head of their household, multiplied by the projected number of persons of that age and sex, to calculate the projected number of households². For example, if an 85+ year old woman has a 90% chance of being the head of the household that she is living in, and the projected number of 85+ year old women is 1,000, then the projected number of households headed by 85+ year old women would be 90% of 1,000 = 900. The sum of these calculations across all age and sex groups gives the total projected number of households.

¹Official documentation calls this a 'Household Representative Rate' method, as the term 'Household Representative' is preferred to the more value-laden term 'Household Head'.

²The official method actually splits the population up by age, sex AND status (couple; single; previously married)

5.6 The headship rate approach takes account of changes in age structure, because separate calculations are made for each age-sex group. Hence, because elderly people live in smaller households, the number of households will be projected to increase as the population ages, even if the overall population total remains unchanged.

Long-term trends

5.7 The public submission notes that nationally the long-term trend for average household size to decline has recently come to an end. However, the national picture can mask wide variation between local authorities. As Fig 4 above shows, the average household size in Wirral is believed to have declined continuously over the period 1991 to 2016.

5.8 Declining average household size leads to an increase in headship rates. This is reflected in the Wirral-specific headship rates used as an input to the official household projections. These headship rates were calculated using data from previous Censuses. The historic trends in age-sex specific headship rates that this reveals were then projected forward in time until 2021, after which headship rates was assumed to remain at 2021 levels for the remainder of the projection period. This is a relatively conservative approach. If the alternative assumption were made that headship rates continued to increase after 2021, then the total number of projected households would be substantially higher.

Use of out-dated official projections

5.9 The public submission also notes that the Wirral Local Plan and Development Options consultation is based upon the now out-dated official 2012-based household projections. The latest 2016-based household projections are illustrated in Figure 3. As might be expected, given that the official 2016-based population projection is lower than the 2012-based projection, the projected number of households is lower too. The 2016-based projection is for an increase of 6,300 households over the 15-year period of the 2020-2035 Local Plan, 28% less than 8,700 households increase in the 2012-based projection. The total difference in projected households in 2035 is 5,500. This contrasts to only a 2,500 difference in population.

5.10 It might seem surprising that reduction in projected households is greater than the reduction in

projected population. One reason for this is that the pace of change in household size has slowed since 2012. It may also be related to a tightening housing market, as explained below. However, the main reason appears to be that the 2016-based household projection methodology changed so that it was based upon trends in household formation observed only over the last two censuses (a ten year period). In contrast the 2012 and 2014-based household projections were based on trends observed over the last five censuses (a forty year period). The 2016-based projections were therefore much more influenced by the recent slowing in household formation – a slowing which has arisen due to either changes in housing aspirations or to a tightening housing market.

5.11 As Table 2 shows, the 2016-based household projection represents a distinct break from the two previous household projections. The single biggest cause of the break is likely to be the change in methodology. For this reason, in November 2018 the Ministry for Housing, Community and Local Government launched a consultation on the future handling of household projections (MHCLG, 2018).

Household projection	Wirral households, 2035
2012-based	155,557
2014-based	156,528
2016-based	150,080

Table 2: Trends in the projected number of Wirral households in 2035

Aspiration versus reality

5.12 One issue not addressed by the official household projections, and also overlooked in the public submission, is that the observed number of persons per household might be artificially high due to a shortage of housing supply. For example, if more appropriately priced housing was available, then more young adults might choose to move out of their parental home into a home of their own. In this sense the official household projections will be conservative: they make no attempt to consider any trends in unmet housing need. This could imply that the recently observed slowing down in the decrease of average household size is an indicator of increasingly inadequate housing supply rather



changing demography. Other evidence concerning housing availability would need to be drawn upon to answer this question.

5.13 As part of its current consultation the MHCLG proposes to require Local Authorities to use 2014-based household projections as the starting point for their current housing need assessments, rather than the most recent, 2016-based projections. A key rationale for this proposal is that the shorter-term trends that the 2016-based projections are based upon are not necessarily the best indicators of the long-term trend, particularly bearing in mind that they may incorporate suppressed housing formation over the last decade or so due to an ever tightening housing market.

6.0 Conclusion

6.1 The public submission does not represent a robust approach to assessing demographic change in Wirral. Whilst housing targets are based on forecasts of future population numbers and housing demand which are inherently uncertain, the projections produced by the Office for National Statistics at least offer the following advantages:

- They are produced using a nationally consistent methodology
- They utilise the most extensive and up-to-date data on births, deaths, migration and household formation that are available for each of the local authorities in England and Wales
- The methodology adopted is highly sophisticated, allowing for changes in the numbers of households that arise from changes in population age structure; and allowing for projected changes in the population of one local authority to influence changes in another through changes in the volume of projected flows of internal migrants
- The methodology used by the Office for National Statistics is under constant review, introducing improvements whenever possible, as agreed in consultation with users, which include local authorities and academics.

6.2 Housing need as defined by MHCLG is "an unconstrained assessment of the number of homes needed in an area... It should be undertaken separately from assessing land availability, establishing a housing requirement figure, and preparing policies to address this such as site allocations" (MHCLG, 2018). The current method for defining local housing need proscribed by MHCLG is much simpler than previous iterations of housing need assessment such as Strategic Housing Market Assessments (SHMAs). SHMAs were highly variable and, although they exhibited a wide range of practices regarding the quality and robustness of data collection and analysis, there was significant consensus that they contributed towards an improved evidence base for planning policy decision making (Ferrari, Leahy Laughlin and Watkins, 2011).

6.3 Current official projections are not problem-free. Most notably:

- There are known issues with the reliability of estimates of net migration. However, local data sources might allow Wirral Metropolitan Borough Council to sense-check the assumption that, after decades of net out-migration, Wirral is now enjoying a period of net in-migration.
- The Office for National Statistics issues updated local authority projections every two years, which can vary markedly from each other due to their sensitivity to changes in recent trends and updates to the methodology in response to user feedback and changes in data availability. This variability in outcome from projection to projection can at least help to indicate the range of uncertainty concerning future trends.
- The official projections assume that the recent past provides a good guide to the future, which is not necessarily the case. This problem is resolvable only if a consensus can be reached regarding not only the most likely future, but also its impact on birth, death, migration and household formation rates.
- The projected number of households incorporates any reduced household formation activity arising from inadequate housing supply. In this sense the official household projection could be overly conservative. Local evidence

could be checked to see whether or not this is likely to be the case in Wirral.

6.3 Despite being a simple calculation, based upon a small number of inputs, there is some contemporary discussion about the appropriate inputs to be used in the assessment of housing need at the local authority scale. The government is currently consulting on a new methodology or changes to the existing methodology of assessing local housing need in light of the revised household projections by the ONS, which led to a "significant reduction in the overall numbers generated by the standard method for assessing local housing need" (MHCLG, 26th October 2018, <https://www.gov.uk/government/consultations/changes-to-planning-policy-and-guidance-including-the-standard-method-for-assessing-local-housing-need>). Furthermore, the consultation hints at a relationship between housing delivery and future household growth which, in MHCLG's view, may require a re-assessment of local housing need "as the ONS has confirmed, lower household projections do not mean fewer homes need to be built. If more homes are planned for and delivered, more people will be able to own or rent their own home." (MHCLG, 2018, p.6). Given these observations, it is possible that in the near-term the national government may consider plans for a revised local housing need assessment framework.

References

- Bramley, G. (2006). Affordability comes of age. In P. Malpass & L. Cairncross (Eds.), *Building on the Past: visions of housing futures* (pp. 127–162). Bristol: Policy Press.
- Bramley, G., Pawson, H., White, M., Watkins, D. & Pleace, N. (2010) *Estimating Housing Need*, Department for Communities and Local Government
- Ferrari, E., Laughlin, D.L. and Watkins, C., 2011. Planning and the housing market: reflections on strategic housing market assessment in England. *Town Planning Review*, 82(4), pp.393-424.
- Goodman, A.C. and Thibodeau, T.G., 1998. Housing market segmentation. *Journal of Housing Economics*, 7(2), pp.121-143.
- Holmans, A. (2000) Estimates of future housing need and demand, in: Monk, S. & Whitehead, C. (Eds) *Restructuring Housing Systems: From Social to Affordable Housing?* pp. 9–20 (York: York Publishing Services).
- Jones, C., 2002. The definition of housing market areas and strategic planning. *Urban Studies*, 39(3), pp.549-564.
- Leishman, C., 2009. Spatial change and the structure of urban housing sub-markets. *Housing Studies*, 24(5), pp.563-585.
- Linneman, P., & Megbolugbe, I. (1992). Housing affordability: Myth or reality? *Urban Studies*, 29(3), 369–392.
- MHCLG (2018) *Technical consultation on updates to national planning policy and guidance*, Ministry of Housing, Communities and Local Government, October 2018
- Sheffield Strategic Housing Market Assessment*, November 2013, Sheffield City Council
- Tunstall, R., 2003. ‘Mixed tenure’ policy in the UK: privatisation, pluralism or euphemism?. *Housing, Theory and Society*, 20(3), pp.153-159.
- Watkins, C.A., 2001. The definition and identification of housing submarkets. *Environment and Planning A*, 33(12), pp.2235-2253.
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