



Technical Paper: population and household projections with dwelling and employment impacts

**To be read alongside background paper
'Consideration of Strategic Options
Consultation and Assessment of Options'**

Produced for Flintshire County Council by the Corporate Research and Information Unit, Conwy County Council

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Technical appendix: population and household projections with dwelling and employment impacts

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Headlines

- This paper has been produced to provide background information to support the Preferred Strategy consultation stage of the Flintshire Local Development Plan 2015-30 which is produced by Flintshire County Council.
- It sets out the preferred option for growth within the County and how this will potentially affect population totals and structures, dwelling requirements and housing mix, and it identifies the jobs and employment land implications of the projected growth. This paper lays out the methodology which was used to produce the projections. It also and gives a brief outline of what the projections show and explains some of the socio-economic trends and drivers that that have shaped the figure.
- The summary of dwelling and employment impacts over the Plan period is shown in the table below.
- As the preferred option presents numbers within a range, the Council has decided to set the dwelling requirement figure at the mid-point of that range – that is at 7,650 over the plan period (includes an additional 10% contingency added to the dwelling requirement to allow flexibility in the delivery of the housing requirement).

	Preferred growth option – employment led	Dwelling requirement mid-point
Household growth	6,350-7,100	
Dwelling impacts		
Households to dwellings	6,550-7,350	6,950
Plus contingency	650-750	700
Total	7,250-8,050	7,650
Annual figure	480-540	510
Economic impacts		
Job growth	8,000-10,000	
Land (ha)	56.5-70.7	

1. Introduction

- 1.1 This paper has been produced to provide background technical information to support the Preferred Strategy consultation stage of the Flintshire Local Development Plan 2015-2030 which is produced by Flintshire County Council.
- 1.2 It sets out the preferred option for growth within the County and how this will potentially affect population totals and structures, dwelling requirements and housing mix, and it identifies the jobs and employment land implications of the projected growth.
- 1.3 The paper complements the document Background Paper : Consideration of Strategic Options Consultation and Assessment of Options
- 1.4 There was widespread support for the selected growth option from the feedback received to the strategic options consultation. Significantly, some of those supporting the option recognised the need for an increased level of net migration to provide an adequate labour supply to attract inward investment. In looking at the evidence base which has informed the Plan and emerging key messages from previous consultations, it is evident that the economic growth of the County should be a strong stimulus in underpinning the Plan Strategy. It is therefore appropriate to show some 'ambition' in terms of economic growth and housing provision. In the light of this context and feedback, the Council considers that the employment led scenario represents a sound basis with which to plan for growth. Whilst it is not as high a figure as sought by some parts of the development industry, it is based on a sound employment growth scenario assessment and is also corroborated by a projection led option.
- 1.5 This paper lays out the methodology which was used to produce the projection for the preferred option. It also and gives a brief outline of what the projection shows and explains some of the socio-economic trends and drivers that have shaped the figure.
- 1.6 Conwy County Borough Council's Corporate Research and Information Unit have been commissioned to provide demographic support to Flintshire's Local Development Plan. This paper was produced by the Senior Researcher from the Corporate Research and Information Unit, who has experience of producing growth options papers for her own Planning Authority and for Denbighshire Council and Wrexham County Borough Council, as well as providing Planning related projections support to a number of other Planning Authorities in Wales. She is a founder member of Welsh Government's Sub-national Projections Working Group (WASP). She was involved in devising the projections methodology used by Welsh Government and has over 25 years of experience of demographic research in North Wales. She is also a member of the Office for National Statistics' Central and Local

Government Information Partnership advisory group on population, and is a long standing member of the POPGROUP¹ steering committee.

- 1.7 As numbers are only a projection of future requirements and are not an exact count, the results are rounded to the nearest 50 for publication, except for projected annual dwelling requirements, which are rounded to the nearest 10.
- 1.8 All data is for change between 2015-2030 (the Plan period) unless otherwise stated.

¹ POPGROUP is the projections software and methodology package used by Welsh Government to produce its sub national projections

2. Methodology for converting jobs growth to housing requirement

- 2.1 The preferred growth strategy presents an employment-led vision of growth. Employment-led projections usually rely on either predictions of job numbers or employment land requirements as a starting point for future growth. Population and household impacts are calculated by using a backward iteration methodology which adjusts components of population change (mainly migration levels amongst the working age population and their dependents) to match jobs growth to population growth levels.
- 2.2 The projections methodology is relatively simple and is devised in an Excel spreadsheet.
- 2.3 It uses the projected jobs growth of 8,000-10,000 over a 15 year period from 2015-2030 as the starting point. This jobs growth figure comes from the Flintshire Further Employment Growth Scenarios Assessment which was undertaken as a piece of follow-up work based on the Council's 2015 Employment Land Review. In order to get an indication of the dwelling impacts of this level of jobs growth:
- Jobs (current total plus 8,000-10,000) are translated into working population by applying commuting rates and unemployment rates.
 - Working population becomes working age population by applying economic activity rates.
 - Pensioners and children are added to the working age population to get a population total.
 - Average household size is applied to the population² to get an estimate of household numbers.
 - A dwellings to households ratio is applied to get a total dwellings figure.
 - The difference between the dwelling number in 2015 and 2030 gives an indication new housing requirement.
- 2.4 Some assumptions about the key components of the projections methodology have been made.
- Unemployment: the unemployment rate for mid-2015 is used at the start of the period, and an average of the last three years is used for the end of the period. Data is from the Annual Population Survey and uses the ILO definition of unemployment (Office for National Statistics)
 - Commuting rates: an out-commuting rate of 20% has been applied to the workforce growth that is expected from the new jobs. This is

² Minus those who live in communal establishments, as they aren't living in households

lower than the current average rate of about 40%, but is only applied to the increase in workforce numbers during the plan period, and is not an attempt to reduce current out-commuting. A reduced rate of out-commuting for any growth in population implies more of Flintshire's residents stay within the County to find work. It does not impact on the size of the workforce any neighbouring Authorities are currently 'borrowing' from Flintshire, though it will reduce the proportion they get from any additional growth. (reducing current out-commuting levels from Flintshire would have the effect of poaching the existing workforce from neighbouring areas. To do so without a negotiated strategy with these neighbours can have a negative impact on the economy of these areas and the wider region).

- Economic activity: the economic activity rate for mid-2015 is used at the start of the period, and an average of the last three years is used for the end of the period. Data is from the Annual Population Survey (Office for National Statistics)
- Population: growth in the total working age population is derived from the growth in the number of jobs. Adjustments are made for the change in state pension age to 67 years old by 2030.
- Population: growth in the number of children in the population is based on the ratio of working age population to children at 2015. This is because there is a direct relationship between number of working age adults and number of children in the total population.
- Population: growth in the pension age population is not directly related to the working age population, so the growth between 2015 and 2030 is held to be the same as in the original baseline projection for each scenario.
- Households: average household size decreases over the period, in line with the change in household formation rates used in Welsh Government's official projections.
- Dwellings: the household to dwelling ratio is taken from the 2011 Census, and uses the same conversion methodology that is commonly used for household:dwelling calculations in the housing requirement calculation for Local Development Plans across Wales.

2.5 A range of different growth options which are not presented in this paper were also prepared at the beginning of the Local Development Plan process, using as a starting point the Welsh Government's officially produced population and household projections (both 2011-based and 2014-based) and a set of locally produced 2014-based projections. These provided the base population, and some of the differentials for age ratios and household size.

2.6 Some of the assumptions listed above are the same across all the different scenarios (commuting, unemployment and economic activity

rates). The population ratios and the average household size differ, depending on the base population for that projection.

- 2.7 Whilst the Flintshire Local Development Plan was being prepared, a new set of official population and household projections were produced by Welsh Government³. These were considered alongside the results from the strategic options consultation, and were not felt to provide sufficient evidence to change the preferred strategy. Though the 2014-based projections give higher figures than those in the 2011-based projections, they remain at a very low baseline level for Flintshire and not one that would provide for a positive job growth related plan strategy which the Council has committed to.

Table 2.1: Welsh Government official projections for Flintshire County

Source: 2011- and 2014-based sub national population and household projections, Welsh Government

	Welsh Government 2011-based 10 year migration trend projections	Welsh Government 2014-based 10 year migration trend projections
Population change 2015-2030		
Population growth	1,850	3,800
Percentage	1.2%	2.5%
Average annual net migration	0	10
Household and dwelling change 2015-2030		
Household growth	3,600	4,150
Percentage	5.5%	6.4%
Average household size	2.242	2.256
Dwellings growth (total)	3,750	4,300
Average annual figure	190	250

³ 2014-based sub national population projections were published by Welsh Government in September 2016; household projections were published in March 2017

3. What the proposed growth option shows

- 3.1 This section of the report gives details of the change in population, jobs and household totals over the Plan period for Flintshire’s preferred growth option, and also looks at the dwelling, housing mix and employment land implications which arise from these changes⁴.

Population change

Table 3.1: population projections for Flintshire County

Source: employment-led projections, Corporate Research and Information Unit, Conwy CBC

	Preferred growth option – employment led
Change 2015-30	
Number	9,250-10,950
Percentage	6.0%-7.1%
Average annual net migration	450-570
Increase caused by	
Migration	6,800-8,500
Natural change	2,450

- 3.2 The projection shows population growth over the Plan period of between 9,250 and 10,950 (6.0%-7.1%). The Welsh Government 2014-based migration-led projections predicted growth of between 1.8% and 2.5%.
- 3.3 Migration is the biggest driver of change. Annual net migration is between about +560 and +640 people a year. The Welsh Government 2014-based projections modelled net migration at about zero for both the five and ten year migration variants.

⁴ Though reference is made in this section to the levels of growth predicted by the Welsh Government’s 2014-based projections, they are presented to provide context only and are not for consideration in this consultation.

Household growth

Table 3.2: household projections for Flintshire County

Source: employment-led projections, Corporate Research and Information Unit, Conwy CBC

	Preferred growth option – employment led
Growth 2015-30	
Number	6,350-7,100
Percentage	9.7%-10.9%
Average household size in 2030	2.262

- 3.4 Household projections are obtained by removing institutional populations⁵ from the population projections and then sharing the remaining population between household types, based on age/gender specific likelihoods of them being members of different types of household.
- 3.5 For all growth options household membership rates continue to change at the same rate as they did between 2001 and 2011. (Household membership rates show the likelihood of people of different ages and genders to form households of different types, such as one person households or two adult + two children households).
- 3.6 The projections show a growth in household numbers over the Plan period of between 6,350 and 7,100 (between 9.7% and 10.9%). The Welsh Government 2014-based migration led projections predicted a lower level of growth of between 5.8% and 6.4%.
- 3.7 Household growth rates are higher than population growth rates. This is because, as well as increasing due to growth in the population, the number of households within the population is also affected by the long-term trend towards smaller household size.
- 3.8 Average household size is expected to fall from 2.35 in 2015 to 2.26 in 2030.
- 3.9 By far the biggest factor affecting the number of households and average household size in 2030 is the expected growth in the number of one person households. This is not a trend which is unique to Flintshire County, and is in big part driven by the significant increase in the number of lone pensioner households which is seen as the large baby boomer

⁵ Institutional (or communal establishment) populations are people who are not living as part of a household. It counts only those who are expected to live in a communal establishment for six months or longer. It includes care homes, hospitals, boarding schools, prisons, nurses accommodation, hotels/guesthouses with room for 10 or more guests, sheltered accommodation where fewer than half of units have cooking facilities and/or the main meal is provided communally, and all accommodation provided solely for students (privately or university owned halls of residence, student villages or cluster flats/houses). It does not include houses rented to students by private landlords.

generation starts to move into the age groups which experience widowhood.

- 3.10 Other factors which have led to smaller average household sizes over past decades have been the trends towards smaller family size and the increase in the number of family break-downs. These trends are expected to continue.

Dwelling requirements

Table 3.3: dwelling impacts of preferred growth option for Flintshire County

Source: employment-led projections, Corporate Research and Information Unit, Conwy CBC

	Preferred growth option – employment led	Dwelling requirement mid-point
Growth 2015-30		
Households to dwellings	6,550-7,350	6,950
Plus contingency	650-750	700
Total	7,250-8,050	7,650
Annual figure	480-540	510

- 3.11 When converting household projections to dwelling requirements, an allowance for vacant dwellings and second/holiday homes of about 3.1% is made. This is because there is a need to provide more dwellings than there are households to allow for churn within the housing market and to make a provision for potentially 'hidden' households to be accommodated. This 3.1% is in line with past trends⁶ and is applied to the whole of the dwelling stock. Welsh Government recommends a notional average allowance across Wales of about 4%, with a range between 1.5% and 8% depending on local evidence⁷.
- 3.12 An additional contingency of 10% has been added to the figure which results from this calculation, to allow flexibility in the amount of land which is allocated for housing development. This is in case some of the sites which are expected to be developed during the Plan period do not come forward or experience unforeseen delays in development.
- 3.13 As the preferred option presents numbers within a range, the Council has decided to set the dwelling requirement figure at the mid-point of that range. The projections show total dwelling requirements over the Plan period of 7,650 additional homes. This is around 510 new dwellings a

⁶ 2001 and 2011 Censuses of Population give rates of 3.0% and 3.1% respectively

⁷ Welsh Government response to Cardiff Local Development Plan session on housing, 15th January 2015

year. The Welsh Government 2014-based migration-led projections had a lower annual requirement (including contingency) of between about 280 and 310 new dwellings each. The LDP Preferred Strategy is therefore seeking to provide a significantly higher level of housing than the national projections indicate

- 3.14 Not all of these new dwellings will require new allocations of land for housing. Land with existing permissions or allocations, dwellings which have already been built in the early years of the Plan’s life and developments of ‘windfall’ sites will all contribute to the provision of new dwellings. At 1st April 2017 the requirement for new allocations was land to accommodate 1,450 new dwellings.

Table 3.4: dwelling impacts of growth options for Flintshire County

Sources: employment-led projections, Corporate Research and Information Unit, Conwy CBC; housing land monitoring statements and planning register, Flintshire County Council

	Preferred growth option – dwelling requirement mid-point
Growth 2015-30	
Total new housing provision	7,650
Supply (with permission, allocation or under construction), completions, awaiting S106 and estimated windfall (as of April 2017)	6,200
New allocations required	1,450

Employment impacts

- 3.15 The table below shows the jobs growth and employment land requirements which are projected to arise from the preferred growth option for Flintshire’s LDP.
- 3.16 The projection shows jobs growth over the Plan period of between 8,000 and 10,000. This equates to employment land requirements of between 56.5 ha and 70.7 ha over the period 2015-30. The Welsh Government 2014-based migration-led projections had a total requirement of between around 6.3 ha and 10.2 ha for the Plan period.
- 3.17 The jobs growth figures used in this paper come from the Joint Flintshire and Wrexham Employment Land Review (October 2015).

Table 3.5: employment impacts of growth options for Flintshire County

Source: employment-led population projections, Corporate Research and Information Unit, Conwy CBC

	Preferred growth option – employment led
Growth 2015-30	
Job growth	8,000-10,000
Land (ha)	56.5-70.7

- 3.18 To get an employment land requirement from a jobs figure, the total jobs requirement is converted to an employment land requirement by using a national average jobs density of 21 sqm per job to get a total floorspace requirement. The floorspace figure is then divided by Flintshire’s average developer density 3,000 sqm/ha to get an overall employment land requirement⁸.
- 3.19 Evidence about the amount and distribution of land needed to accommodate the increase in the size of the labour force/job growth is presented in background paper Joint Flintshire and Wrexham Employment Land Review (October 2015).
- 3.20 Whilst this provides an estimate of land required, this doesn’t factor in the existing portfolio of employment sites which, when assessed in the Employment Land Review, did not identify significant existing sites for deallocation or alternative uses. In maintaining a large portfolio of existing employment sites, and given the focus for job creation on two strategic allocations, Flintshire has more than sufficient sites to accommodate the expected job growth.

⁸ Methodology advice obtained from BE Group, who produced the Employment Land Review background paper. Average jobs density is an average for most service sectors.

Appendix: housing land requirement balance sheet

Table A1: Housing land requirement balance sheet (as at 1st April 2017)

Source: Flintshire County Borough Council

Element	Number	Notes
REQUIREMENT	7,650	Housing requirement for 2015-2030 (6,950 + 10% flexibility)
Less completions:		
2015-16	650	
2015-17	400	
Total completions	1,100	Both figures include large sites and small site completions.
Revised requirement:	6,550	
Less commitments	2,050	This reflects a review of sites whereby only sites with planning permission as at 01/04/17 which are considered to be realistically capable of development, are included (large sites only).
Revised requirement:	4,500	
Less allowances:		
Small sites allowance (<10 units) 60 pa	800	Small sites allowance is calculated on the basis of the remaining 13 years of the Plan period. An allowance of 60 units per annum (as per UDP) has been included which is a conservative estimate based on an average small sites completions figure of 121 over the last 17 years (allowance is an indicative figure until results of Urban Capacity Study are known)
Windfall allowance (>10 units) 50 pa	650	Windfalls allowance (large sites) is calculated on basis of the remaining 13 years of the Plan period. An allowance of 50 units per annum (as per UDP) has been included (allowance is an indicative figure until results of Urban Capacity Study are known)
Total allowances	1,450	
Residual requirement	3,100	
LDP strategic allocations	1,650	Includes Northern Gateway 1325 units and Warren Hall 300
New allocations requirement	1,450	
LDP allocations		To be confirmed in Deposit Draft Plan

Note: This is a point in time assessment and will be subject to amendment over time