Bridgend

LDP Demographics

September 2020

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Acknowledgements

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Contents

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1   Introduction

Context

1.1   Bridgend Council is preparing a replacement Local Development Plan (LDP) for a 2018–2033 plan period. The LDP is to be informed by the latest demographic statistics and forecasts, updating the previous evidence provided to the Council in 2019. This process is beginning at a time of extraordinary social and economic upheaval. Following the political turbulence of Brexit, the global COVID-19 pandemic has resulted in an unprecedented interruption to the daily lives of all UK citizens.

1.2   In August 2020, the Welsh Government (WG) published its 2018-based population and household projections, a first update since the 2014-based equivalents. These new WG projections provide the *baseline* for the LDP demographic evidence, to be considered alongside a range of growth scenarios, including trend and housing-led alternatives. These additional scenarios incorporate a 2019 mid-year estimate, published by ONS in June 2020.

1.3   The Council is seeking to draw conclusions from the growth options, taking the evidence forward in a process of consultation for the replacement LDP.

Approach

1.4   Edge Analytics is a specialist in Data Science, with a particular expertise in demographic modelling and forecasting and has worked with the majority of local planning authorities across Wales in the development and presentation of evidence to support LDP formulation.

1.5   Edge Analytics has used POPGROUP technology to configure a new range of growth scenarios for Bridgend, incorporating demographic statistics from both the Office for National Statistics (ONS) and WG, to produce forecasts for a 2018–2033 plan period.

1.6   Section 2 updates the Bridgend Area Profile with the latest demographic statistics. Section 3 presents the growth scenarios, with a summary of the evidence in Section 4. The Appendix provides supplementary detail on the methodology, data and assumptions used in the formulation of the analysis.

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2 Area Profile

Population Change

2.1 Located in the South East (SE) Wales region, Bridgend borders the Vale of Glamorgan to the south, Rhondda Cynon Taf to the east and Neath Port Talbot to the north and west (Figure 1).

Figure 1: Bridgend – Geographical Context

2.2 According to ONS mid-year estimates, the population of Bridgend was estimated to be 147,049 in 2019, an increase of 18,314 (14.2%) since 2001 (Figure 2).
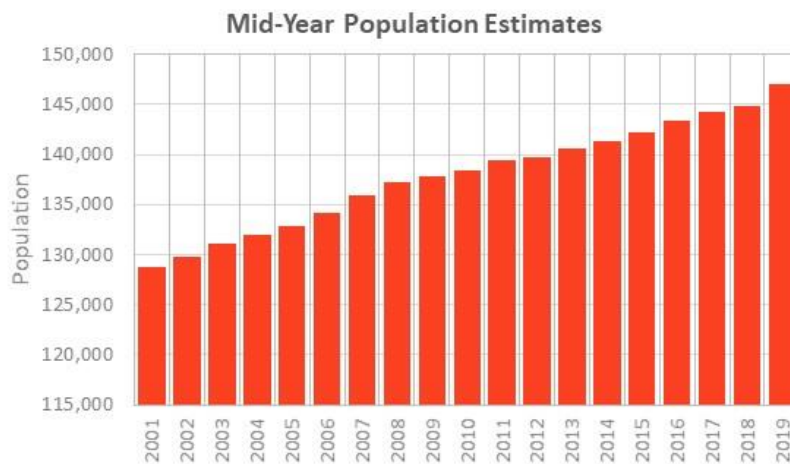

Figure 2: Bridgend Mid-Year Population Estimates, 2001–2019 (Source: ONS)

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2.3   With an average growth across Wales of 8.3%, there has been population decline in just two of the 22 unitary authorities between 2001–2019 (Figure 3). Ceredigion has experienced the largest fall in population (-3.6%) with Blaenau Gwent also subject to decline (-0.2%). Growth in other authorities has ranged from 2.8% to 18.3%, with Bridgend's growth rate second-only to Cardiff since 2001.
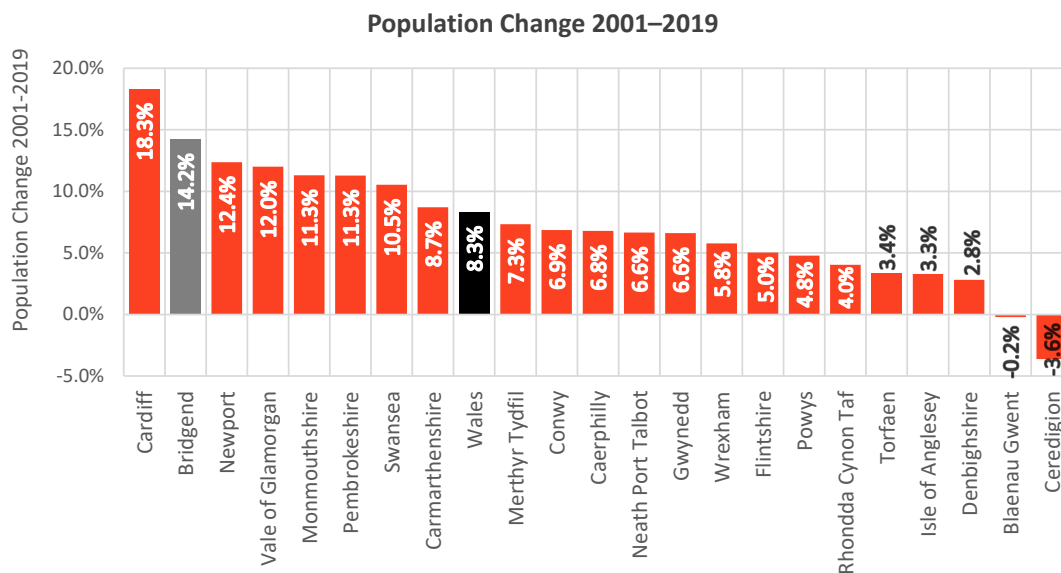

Figure 3: Population Growth Comparison – Wales (Source: ONS)

2.4   Bridgend's population is estimated to have increased in each year since 2001/02. Until 2017/18, average annual growth ranged between +350 and +1,800, but there was a sharp increase in population of +2,173 estimated in 2018/19 (Figure 4).
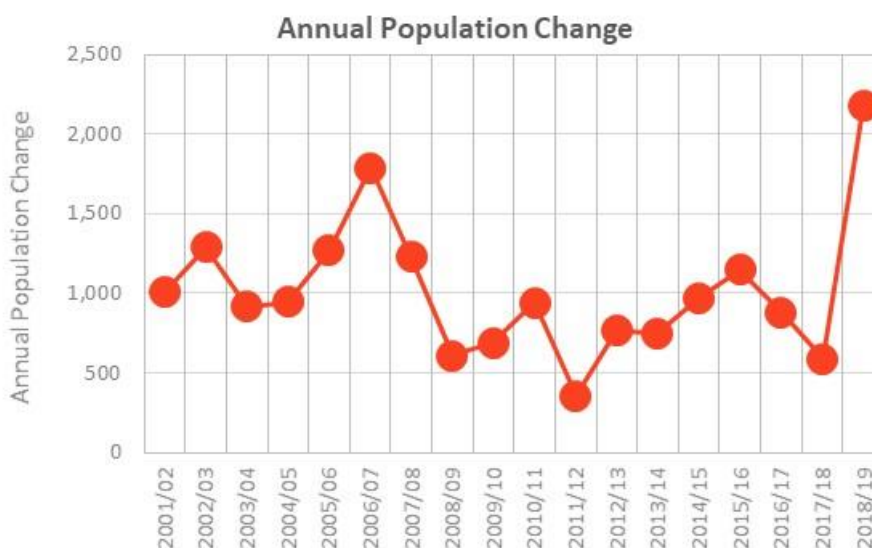

Figure 4: Bridgend – Population Change 2001/02–2018/19 (Source: ONS)

2.5   Bridgend's housing delivery rates have fluctuated since 2006/07, averaging +459 dwellings per year (dpa) (Figure 5).
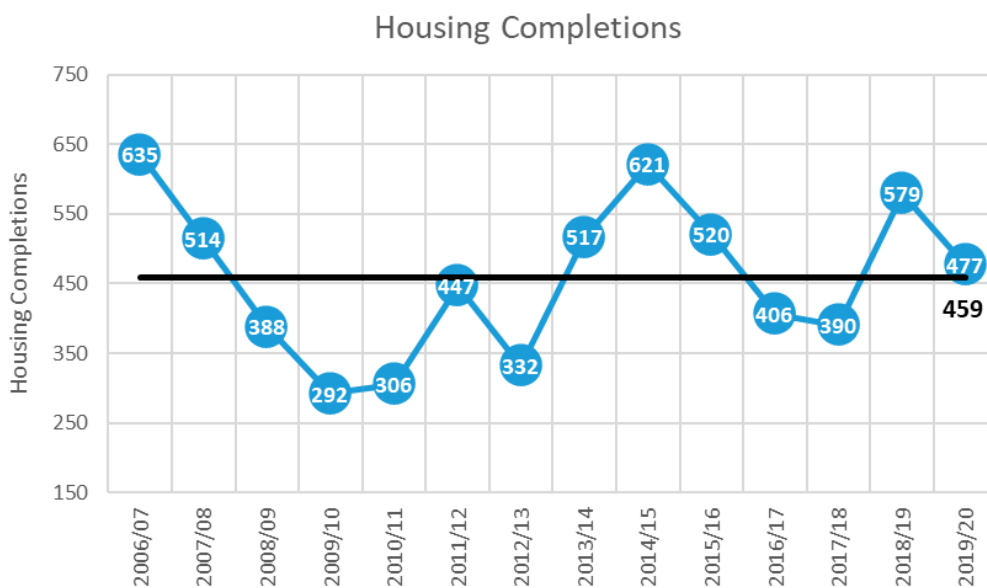
Housing Completions

Figure 5: Bridgend – Housing Completions (Source: JHLAS 2019[1])

2.6 An index of population growth for each of four broad age-groups, reveals the important demographic changes that are taking place within Bridgend, ageing its population over time (Figure 6). There has been significant growth in the older age-groups, 65-79 and 80+, with the number of 80+ year olds in Bridgend increasing by over 40% between 2001–2019. There has been overall growth in the working age population (16-64-year olds), whilst the number of children below the age of 15 decreased slightly up to 2011, recovering steadily since then.
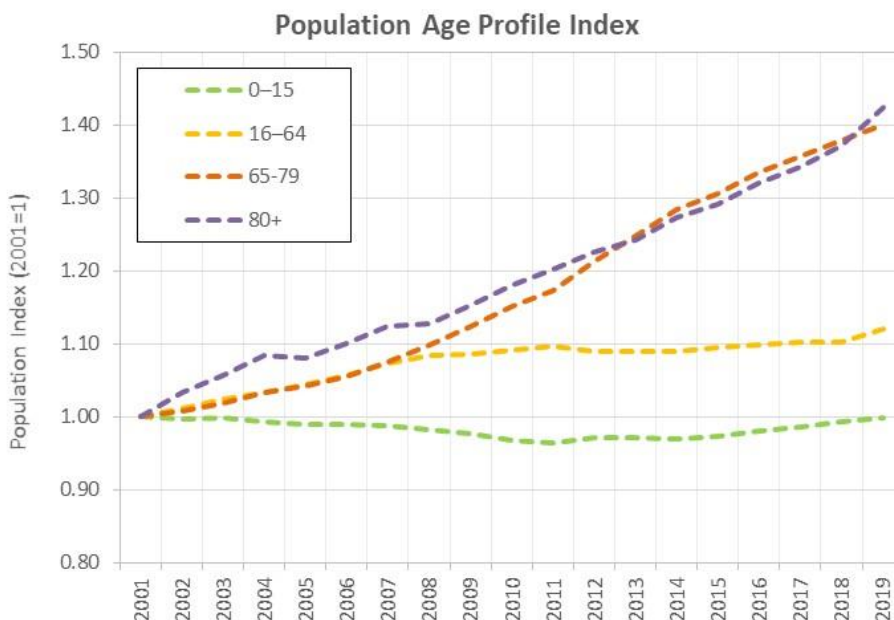
Population Age Profile Index

Figure 6: Bridgend – Population Age Profile Index 2001–2019

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[1] Bridgend Joint Housing Land Availability Study 2019

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Births, Deaths & Migration

2.7 Examination of the 'components' of population change for Bridgend, reveals the factors that are estimated to have driven the change in population since 2001, including an upward adjustment (unattributable population change) to its population following the 2011 Census (Figure 7).
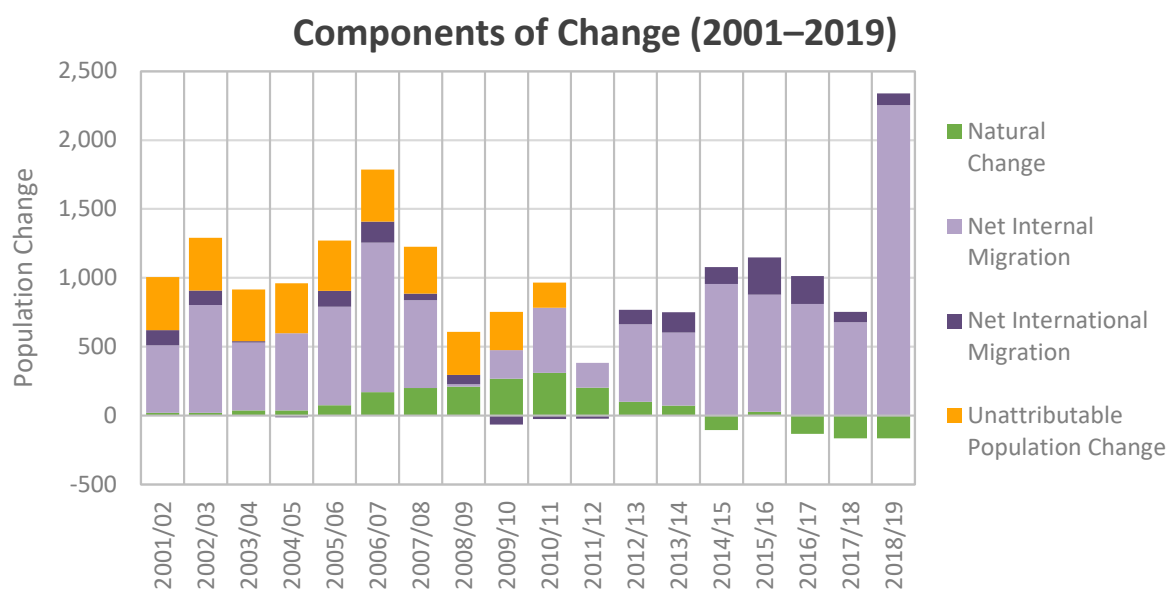

Figure 7: Components of Population Change 2001/02–2018/19 (Source: ONS)

2.8 Natural change (the difference between births and deaths) has had a varying effect upon population growth, with a small but increasingly positive impact up to 2010/11; falling thereafter with a negative impact on population change in four of the past five years of historical evidence.

2.9 The impact of internal and international migration has been more consistent. A net inflow from internal migration has been the main driver of Bridgend's growing population, contributing an average of +685 people per year over the 2001–2019 period.

2.10 There was a sharp increase in the internal net inflow in 2018/19 as a result of ONS' new Higher Education Leavers Methodology (HELM)[2], designed to better reflect the speed and pattern of movement of students following graduation.

2.11 The contribution of net international migration to Bridgend's growth has been smaller, but there has been a net inflow estimated in all but three years of the 2001–2019 time period.

2.12 A closer examination of birth and death trends reveals that a peak in births in 2010/11 has been followed by a return to the lower birth numbers experienced in 2001. With correspondingly higher death totals since 2011, the natural change contribution to population change has been negative (Figure 8).

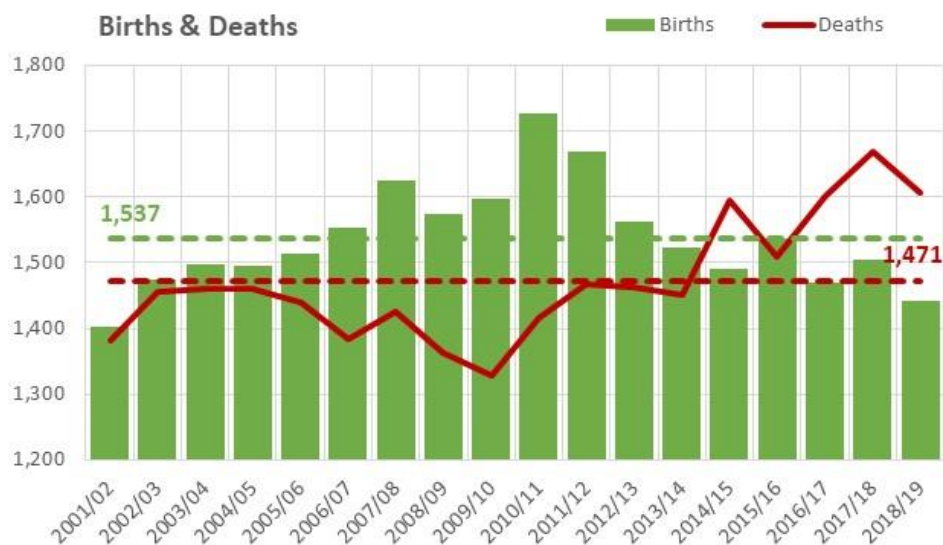[2] Population estimates for the UK, mid-2019 methods guide, July 2020

Figure 8: Bridgend – Births & Deaths 2001/02–2018/19 (Source: ONS)

2.13 A more detailed scrutiny of Bridgend's internal migration statistics reveals that inflows have averaged at 4,285 to 2017/18, on an upwards trajectory since 2008/09. Outflows averaged 3,695 per year over the same period, also on an upward trend. The sharp uplift in net migration in 2018/19 has been driven by both an increase in the inflow total and a reduction in the outflow total (Figure 9).
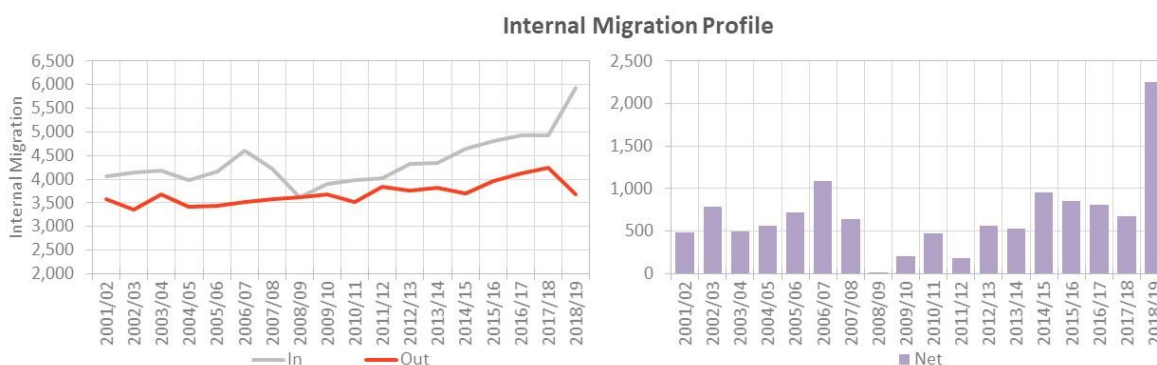
Figure 9: Bridgend – Internal Migration Profile 2001/02–2018/19 (Source: ONS)

2.14 The importance of the student outflow to higher education is emphasised in Bridgend's age-profile of internal migration. This indicates a large net outflow in the 15-19 student age-group, with a correspondingly high net inflow at age 20-24, on graduation. All other age-groups record a net inflow through internal migration, confirming Bridgend's attractiveness as a destination for migrants across all family, labour-force and older ages (Figure 10).
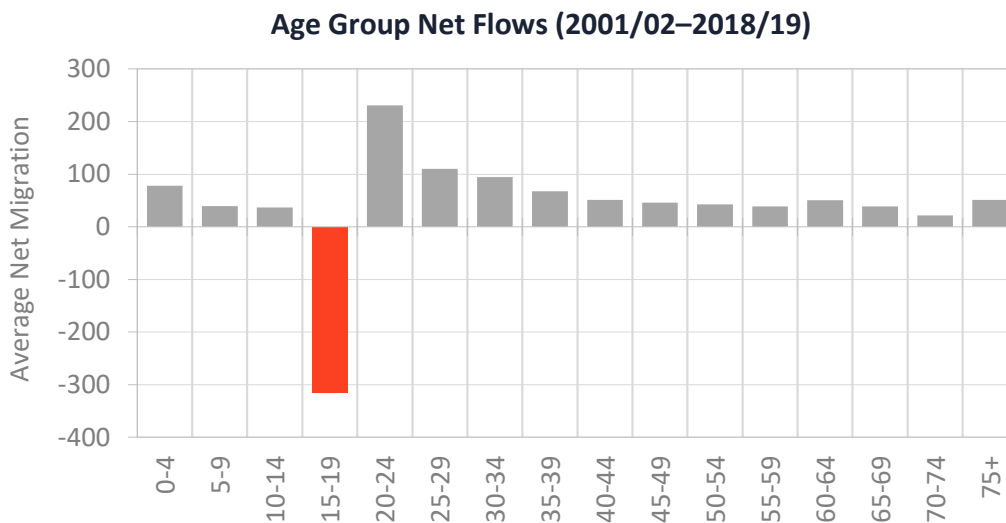
Age Group Net Flows (2001/02–2018/19)

Figure 10: Bridgend – Internal Migration Age Profile 2001/02–2018/19 (Source: ONS)

2.15   Geographically, Bridgend's most significant <u>net</u> migration inflow exchange (2001–2019) has been from neighbouring Rhondda Cynon Taff, Cardiff and The Vale of Glamorgan, in addition to a collection of districts in the rest of Wales and the West of England. Its net migration outflow exchange has been greatest with Neath Port Talbot (Figure 11).

Net Migration (2001–2019)
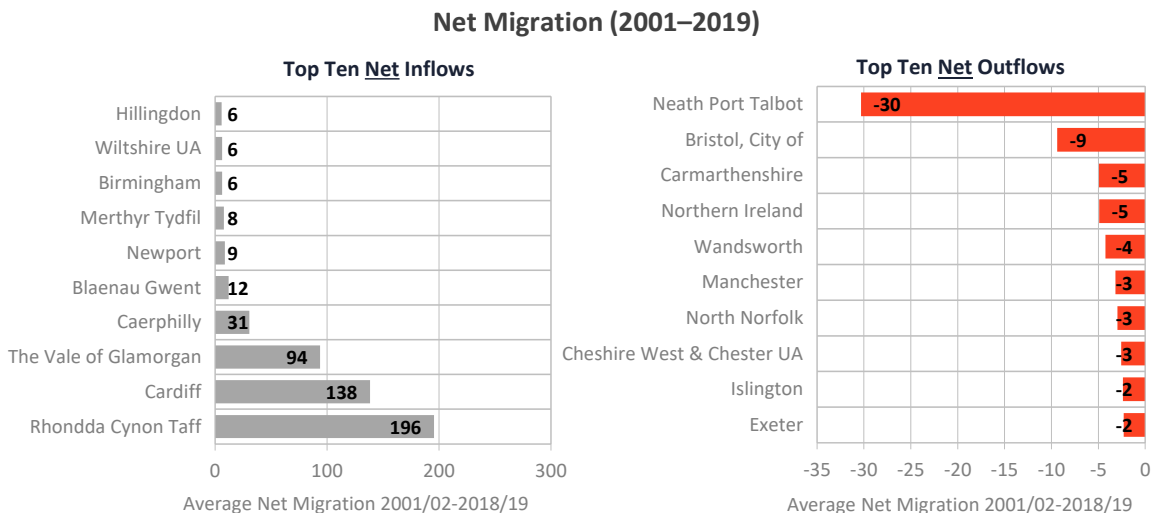
Figure 11: Bridgend – Top Ten Net Migration Inflows and Outflows 2001/02–2018/19 (Source: ONS)

2.16   International migration continues to be the most difficult component to estimate robustly; so much so that ONS has downgraded its output to 'experimental statistics' status, whilst improvements continue[3]. The International Passenger Survey (IPS) is the mainstay of the UK's immigration and emigration estimates but this is due to be dropped in autumn 2020, in favour of a mix of administrative datasets, including the patient register, higher education statistics and national insurance number (NINo) registrations.

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[3] Statement from the ONS on the reclassification of international migration statistics, August 2019

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2.17 International migration has had a more limited impact on Bridgend's population change but it's contribution has been positive in the majority of years since 2001, peaking at +270 in 2015/16 (Figure 7). NINo statistics provide a complementary illustration of international migration inflow to Bridgend; different to the ONS mid-year population estimate statistics in that they refer only to work-based in-migration and include migrants whose stay may be shorter than 12 months (Figure 12).
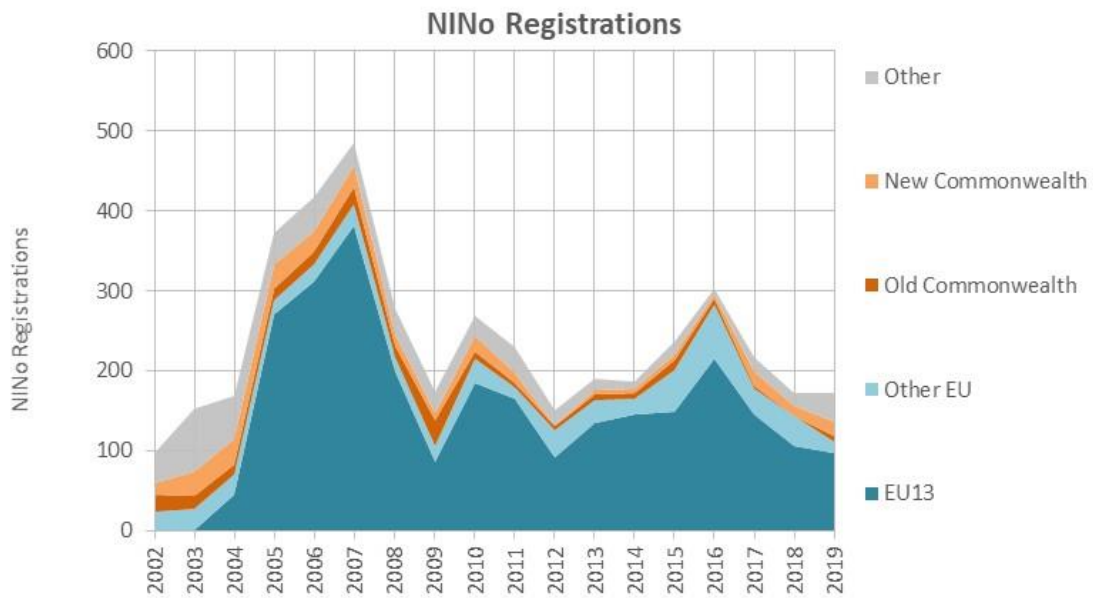
EU13 refers to countries who have joined the EU since 2004:
Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia

Figure 12: NINo Registrations by Country of Origin (2002–2019) (Source: DWP)

2.18 NINo registrations have predominantly been associated with migrant workers from countries that have joined the European Union since 2004. NINo totals peaked in 2007 and have fluctuated around an average of approximately 200 per year thereafter.

3 Demographic Scenarios

Scenario Definition

3.1   POPGROUP technology (see Appendix A) has been used to configure a suite of growth scenarios for Bridgend (Table 1). Additional detail on scenario data inputs and assumptions is provided in Appendix B.

3.2   The WG scenarios include the 2014-based *Principal* projection, plus the full suite of variants that make up the 2018-based WG projections.

3.3   POPGROUP (PG) trend scenarios consider growth outcomes based on a continuation of short-term and long-term migration histories, incorporating a 2019 base year. Variants on the **PG-Short Term** scenario are presented, considering growth outcomes that are underpinned by the higher fertility and mortality assumptions identified in the WG 2018-based round of projections.

3.4   The dwelling-led scenarios consider how a continuation of a 10-year and 5-year history of housing completion rates would impact upon future population growth, again with a 2019 base year.

3.5   Under each scenario, population, household, migration, dwelling and employment growth is presented over a 2018–2033 plan period, in line with Bridgend's LDP period.

3.6   For all scenarios, household and dwelling growth is estimated using assumptions from the WG 2018-based household projection model. In modelling the relationship between households and dwellings, a dwelling vacancy rate of 4.8% has been applied, derived from 2011 Census statistics.

3.7   The 2001–2033 population growth trajectories for all scenarios are presented in Figure 14.

3.8   In Table 2, each of the scenarios is summarised in terms of population and household growth for the 2018–2033 LDP period, alongside the average annual net migration and dwelling growth outcomes.

Table 1: Bridgend Scenario Definition

1.	WG 2014-Principal	Replicates the WG 2014-based *Principal* population projection, using historical population data for 2001–2014.
2.	WG 2018-Principal	Replicates the WG 2018-based *Principal* population projection, using historical population data for 2001–2018.
3.	WG 2018-HIGHPOP	Replicates the WG 2018-based *High* population projection, using historical population data for 2001–2018 and incorporating high fertility, mortality and migration assumptions.
4.	WG 2018-LOWPOP	Replicates the WG 2018-based *Low* population projection, using historical population data for 2001–2018 and incorporating low fertility, mortality and migration assumptions.
5.	PG-Long Term	Uses an ONS 2019 MYE base year and calibrates its migration assumptions from an 18-year historical period (2001/02–2018/19).
6.	PG-Short Term	Uses an ONS 2019 MYE base year and calibrates its migration assumptions from a 6-year historical period (2013/14–2018/19).
7.	PG-Short Term (Fert-H)	Uses an ONS 2019 MYE base year and calibrates its migration assumptions from a 6-year historical period (2013/14–2018/19) and its fertility assumptions from the WG 2018-based High variant scenario.
8.	PG-Short Term (Fert-H Mort-H)	Uses an ONS 2019 MYE base year and calibrates its migration assumptions from a 6-year historical period (2013/14–2018/19) and its fertility and mortality assumptions from the WG 2018-based High variant scenario.
9.	Dwelling-led 5Yr	Models the population impact of an average dwelling growth of 474 dpa, based on a 5-year history of housing completions (2015/16–2019/20). This average dwelling number is fixed throughout the plan period.
10.	Dwelling-led 10Yr	Models the population impact of an average dwelling growth of 460 dpa, based on a 10-year history of housing completions (2010/11–2019/20). This average dwelling number is fixed throughout the plan period.

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Scenario Summary

3.9 Population change for the 2018–2033 period ranges from 3.3% under the **WG-2014-PRINCIPAL** scenario to 10.9% under the **PG Short Term (Fert-H Mort-H)** scenario. This range of population growth equates to an estimated housing requirement of 271–549 dpa.

3.10 The **WG-2014-PRINCIPAL** scenario results in a low growth outcome compared to the **WG-2018-PRINCIPAL** (and its variants), despite the introduction of dampened assumptions on fertility and mortality in the latter. Bridgend's recent history of high net in-migration to the unitary authority, is the key driver of the higher growth outcomes (Figure 13).
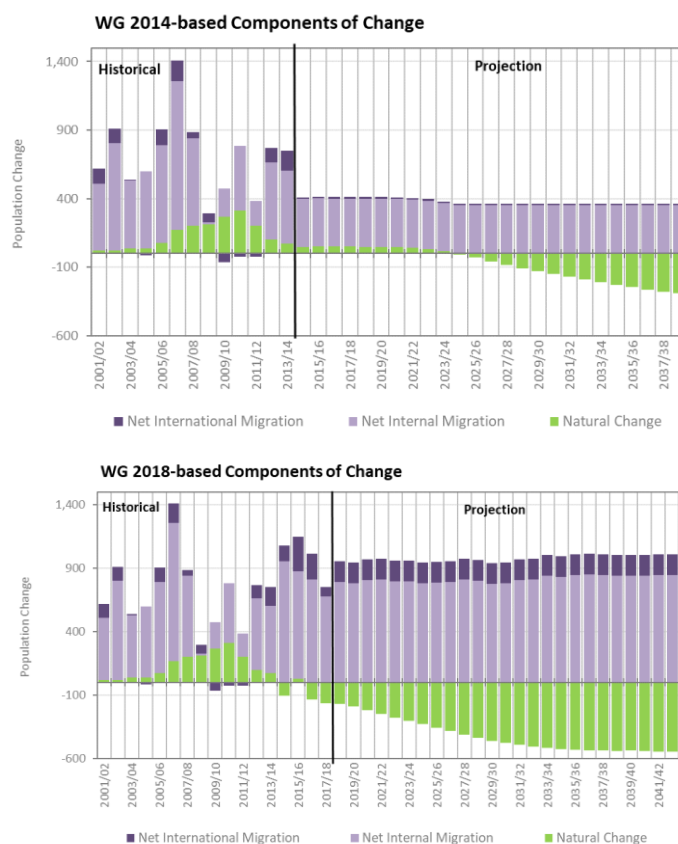

Figure 13: Bridgend– Components of Population Change, WG Principal Scenarios (Source: WG)

3.11 The **Dwelling-led 5yr** and **Dwelling-led 10yr** scenarios, which continue the average rate of past housing growth, result in an estimated population growth of 9.8% and 9.5% respectively by 2033 and an average annual net in-migration to Bridgend of +511 and +497 per year.

3.12 The effect of dampened fertility and mortality assumptions upon growth outcomes is evaluated with two variants of the **PG-Short Term** scenario, the first using fertility assumptions from the **WG-2018-HIGHPOP** scenario, the second using fertility <u>and</u> mortality assumptions from this scenario.

The **PG-Short Term (Fert-H)** scenario results in a 6% increase in the dwelling requirement (526 dpa) from the **PG-Short Term** outcome (496 dpa). With the addition of a higher mortality assumption, the **PG-Short Term (Fert-H Mort-H)** scenario results in an 11% uplift in the requirement (549 dpa).
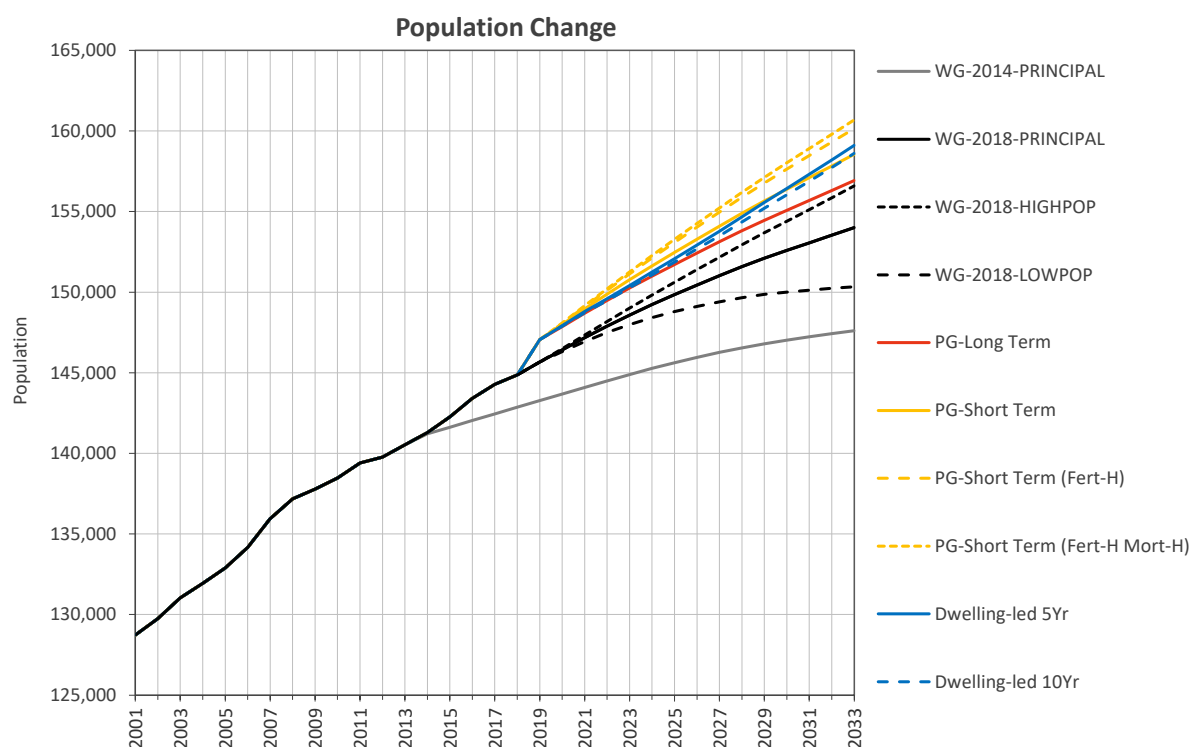
Scenario Outcomes

Figure 14: Bridgend Population Growth Scenarios 2001–2033

Table 2: Bridgend Scenario Outcomes 2018–2033

Scenario	Change 2018–2033				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-Short Term (Fert-H Mort-H)	15,820	10.9%	7,847	12.7%	1,142	549
PG-Short Term (Fert-H)	15,278	10.5%	7,519	12.2%	1,145	526
Dwelling-led 5Yr	14,231	9.8%	7,297	11.8%	1,191	511
Dwelling-led 10Yr	13,736	9.5%	7,099	11.5%	1,161	497
PG-Short Term	13,681	9.4%	7,079	11.4%	1,166	496
PG-Long Term	12,050	8.3%	6,425	10.4%	1,054	450
WG-2018-HIGHPOP	11,724	8.1%	6,395	10.3%	1,014	448
WG-2018-PRINCIPAL	9,130	6.3%	5,401	8.7%	960	378
WG-2018-LOWPOP	5,453	3.8%	4,104	6.6%	905	287
WG-2014-PRINCIPAL	4,743	3.3%	3,865	6.3%	363	271

Age Profile

3.13   The changing age profile associated with Bridgend's future population growth, is an important consideration in planning for housing and in the development of the resident labour force. The new suite of projections presented in this report has incorporated both revised fertility and mortality assumptions and updated mid-year population estimates. These factors have had an effect upon the resulting age-structure associated with Bridgend's projected population growth to 2033.

3.14   To illustrate, the **PG-Short Term** scenario resulting from the 2014-based configuration, is compared to that generated from the latest set of, 2018-based, assumptions (Figure 15).
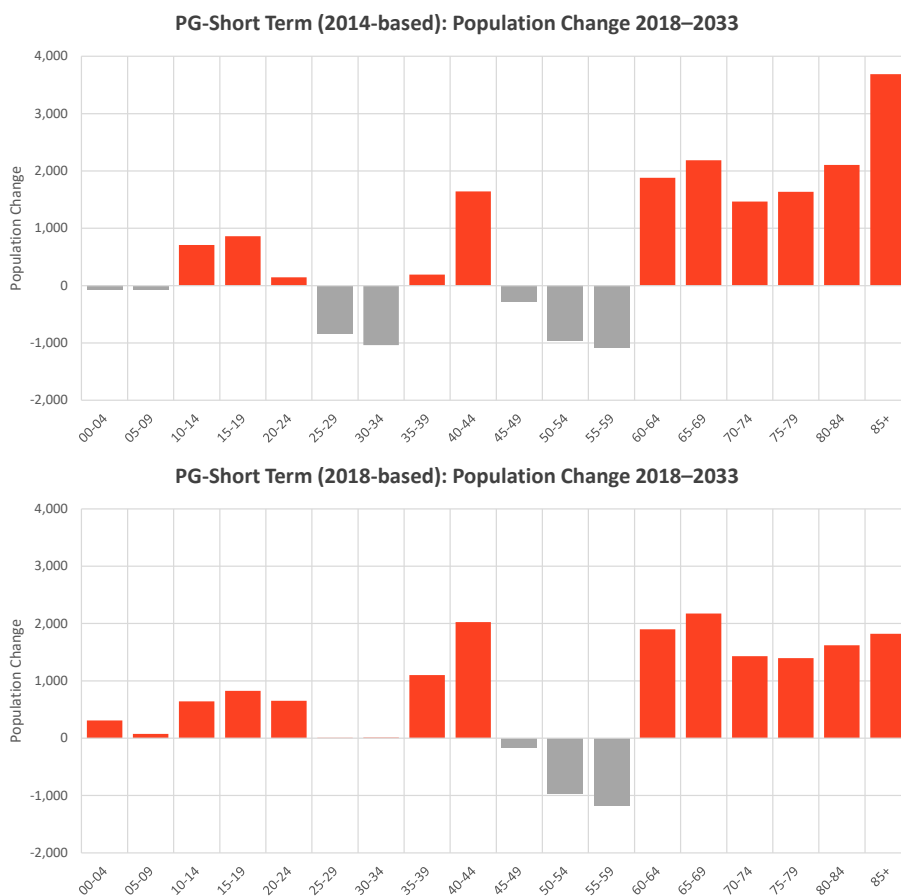

Figure 15: Bridgend – Population Change by Age-Group

3.15   The respective age-group profiles reveal important differences in the older age-groups, with the dampened life expectancy improvements in the WG's 2018-based assumptions, resulting in lower growth in the 85+ age category. At the same time, with a recent history of high net in-migration to Bridgend, higher growth in the younger adult age-groups (20-44) is evident in the latest **PG-Short Term** scenario, with a correspondingly higher growth in the youngest age-ranges, 0-14. The higher growth in the younger adult age-groups is particularly important when considering the link between Bridgend's population change and the size and profile of its resident labour force.

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Linking Population and Employment

3.16   A final set of summary statistics present the estimated impact of each growth scenario upon potential employment growth within Bridgend. The relationship between population and employment is modelled using key assumptions on economic activity rates, unemployment and commuting (see Appendix B). The economic activity rates determine the estimated annual change in Bridgend's resident labour force, whilst the unemployment and commuting ratios link the labour force to *workplace-based employment* in Bridgend.

3.17   Workplace-based employment is a 'person-based' measure, rather than a jobs-based measure of economic activity. The two measures are directly related, but the jobs-based measure is that typically reported in employment forecasts derived from econometric models and will include both full-time and part-time positions. The workplace-based employment figure measures the number of people employed, linking directly to person-based unemployment, commuting and economic activity rate parameters and therefore to the population resident in Bridgend.

3.18   Application of these assumptions to each scenario across the 2018–2033 plan period results in a range of employment growth outcomes that varies from 4 per year under the **WG 2014-Principal** scenario, to an increase of 502 per year under the **Dwelling-Led 5Yr** scenario (Figure 16).
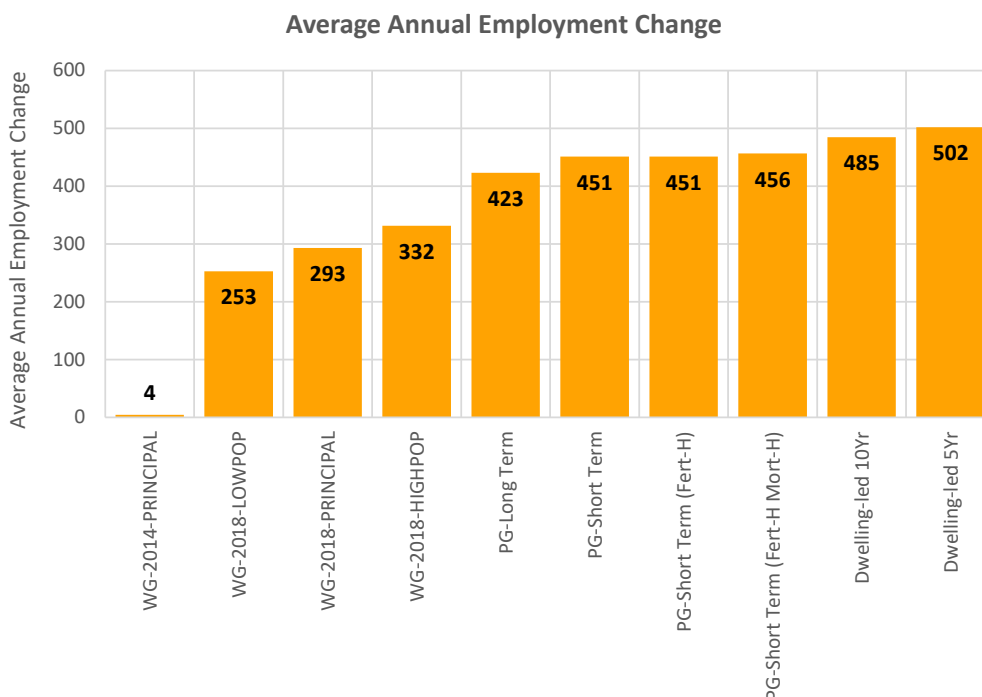

Figure 16: Bridgend Average Annual Employment Growth Scenarios (2018–2033)

3.19   The age-structure differences between the 2014-based round of projections and the latest suite of 2018-based output presented here, result in a more positive impact upon labour force projections, with higher growth evident in the younger adult age-groups over the LDP plan period.

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4 Summary

Growth Outcomes

4.1   Bridgend Council is in the process of updating its LDP. As part of this process, the Council has sought to collate the latest demographic evidence to inform its housing growth options. Bridgend's recent profile of population growth has been characterised by relatively high net in-migration from other parts of the SE Wales region, in particular. So even with the introduction of dampened assumptions on fertility and mortality in the latest round of WG projections, its growth outlook is positive relative to the WG's 2014-based evidence.

4.2   POPGROUP technology has been used to configure a suite of growth scenarios for Bridgend. Under each scenario, population, household, migration, dwelling and employment growth is presented over a 2018–2033 plan period.

4.3   Under each scenario, household growth has been estimated using household membership rate assumptions from the WG's 2018-based household projection model, in combination with a dwelling vacancy rate of 4.8% for Bridgend.

4.4   Over the 2018–2033 plan period, population growth of 3.3% to 10.9% is estimated under the range of scenarios, with a corresponding household growth of 6.3% to 12.7%. The associated average annual dwelling growth ranges from +271 to +549 dpa (Figure 17).
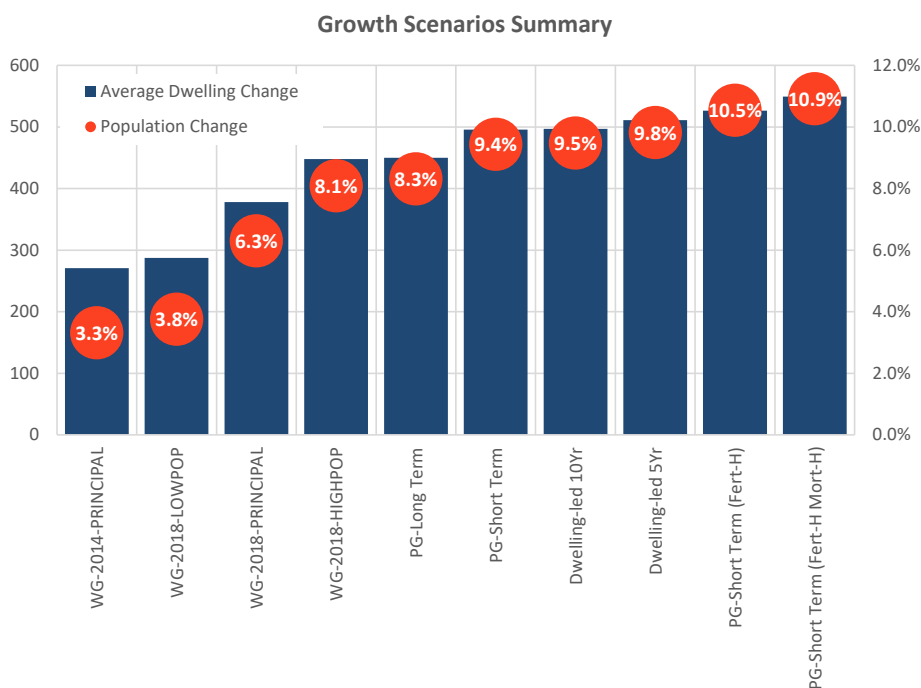
Figure 17: Bridgend Growth Scenarios Summary (2018–2033)

LDP Development and COVID-19

4.5   The updated growth scenarios, presented as evidence to inform the replacement LDP for Bridgend, have been formulated at a time of extraordinary social and economic upheaval. Following the political turbulence of Brexit, the global COVID-19 pandemic has resulted in an unprecedented interruption to the daily lives of all UK citizens.

4.6   The latest round of WG population projections have introduced a dampened outlook for fertility and mortality, with the recovery from COVID-19 likely to confirm this, at least in the short-term. At the same time, the future impact of international migration is highly uncertain due both to the COVID-19 impact and with the impending introduction of the UK's new points-based system for immigration control.

4.7   The UK government has implemented unprecedented labour market interventions in an effort to mitigate the worst effects of the crisis, protecting incomes and providing a platform for economic recovery. But UK GDP is forecast to decline substantially during 2020, with the last two quarters of negative growth placing the country officially 'in recession'.

4.8   A smooth exit from the COVID-19 lockdown will require no second wave of infections. Whatever the trajectory, economic recovery will not be uniform across industry sectors and across geographical areas. Food service, retail, hotels, transport and the construction industry have been particularly badly affected. In line with previous economic recessions, it is likely that people on lower wages are going to be hardest hit by the economic impacts of a COVID-19-induced recession, with longer-lasting impacts upon economic inequalities and the geographical concentrations of income deprivation.

4.9   Planning for the future development of housing at such a moment, presents a real challenge. The gradual easing of the COVID-19 social restrictions will see businesses and communities adapting to different rules and guidelines for all aspects of daily life, including workplace activities, retailing, travel, education, healthcare, and leisure activities. The housing industry will be a critical component of the economic bounce-back and a key driver of the future growth and distribution of population.

4.10   The Minister for Housing and Local Government has emphasised that the planning system remains at the heart of shaping Wales' future, ensuring that the principles of sustainable development are not sacrificed in the pursuit of economic recovery at any cost[4]. The forthcoming completion of the postponed new National Development Framework (NDF) remains critical to framing regional development in Wales, post-pandemic, and Planning Policy Wales (PPW 10) provides the guiding principles and policies to help drive recovery[5].

4.11   Currently, there is insufficient evidence to inform an assessment of the COVID-19 impact upon long term demographic trends. The latest scenario evidence provides a timely and robust suite of outcomes from which Bridgend Council can consider its LDP options, reviewed and scrutinised in the light of social, economic and demographic changes that will result from the post-COVID-19 recovery.

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[4] Letter from Julie James, Minister for Housing and Local Government to Local Authority Leaders and Chief Executives, July 7, 2020.
[5] Building Better Places - Placemaking and the COVID-19 recovery, July 2020

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Appendix A
POPGROUP Methodology

A.1   Demographic forecasts have been developed using the POPGROUP suite of products. POPGROUP is a family of demographic models that enables forecasts to be derived for population, households and the labour force, for areas and social groups. The main POPGROUP model (Figure 18) is a cohort component model, which enables the development of population forecasts based on births, deaths and migration inputs and assumptions.

A.2   The Derived Forecast (DF) model sits alongside the population model (Figure 19) providing an associated model for both household and labour-force projections and the basis for the dwelling-led and employment-led scenario options.

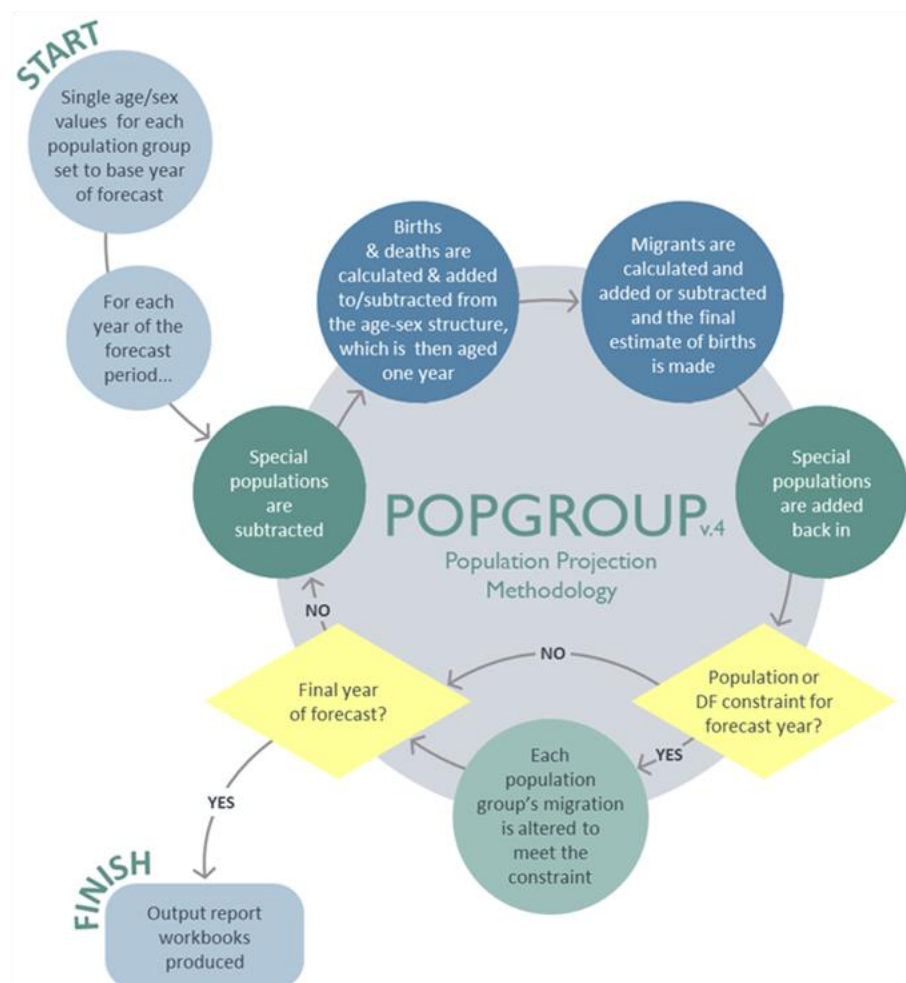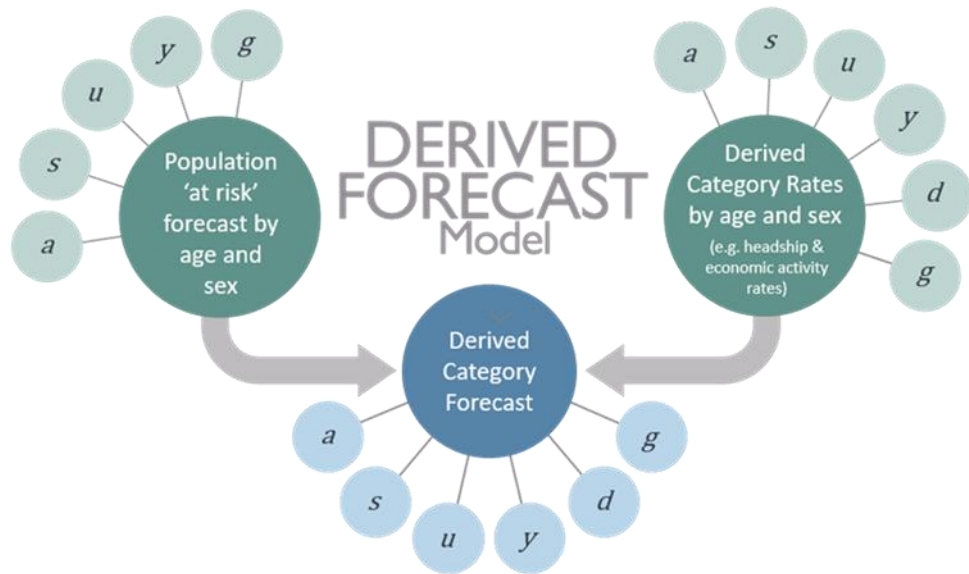A.3   For further information on POPGROUP, please refer to the Edge Analytics website: www.edgeanalytics.co.uk.

Figure 18: POPGROUP Population Projection Methodology

$$D_{a,s,u,y,d,g} = \frac{P_{a,s,u,y,g} \; R_{a,s,u,y,d,g}}{100}$$

D	Derived Category Forecast	y	Year
P	Population 'at risk' Forecast	d	Derived category
R	Derived Category Rates	g	Group (usually an
a	Age-group		area, but can be an
s	Sex		ethnic group or
u	Sub-population		social group)

Figure 19: Derived Forecast (DF) methodology

Appendix B Data Inputs & Assumptions

Population

B.1 In each scenario, historical population statistics are provided by the ONS mid-year population estimates (MYEs), with all data recorded by single year of age and sex. MYEs are used up to the respective base years of each scenario. From the base year onwards, future population counts are estimated by single year of age and sex to ensure consistency with the official projections. For the PG and dwelling-led scenarios, the latest ONS MYE data (2019) is used as the base year population.

Births & Fertility

B.2 In each scenario, historical mid-year to mid-year counts of births by sex have been sourced from the ONS MYEs. Under the WG scenarios, historical births counts have been used until each scenario's base year.

B.3 For the dwelling-led and PG scenarios, birth counts are used from 2001/02 to 2018/19. From 2019/20, an area-specific and age-specific fertility rate (ASFR) schedule is derived from the 2018-based National Population Projections (NPP) for Wales.

B.4 In combination with the 'population-at-risk' (i.e. all women between the ages of 15-49), these ASFR assumptions provide the basis for the calculation of births in each year of the forecast period.

B.5 In each of the WG scenarios, the future counts of births are reproduced from the base year onwards to ensure consistency with the respective population growth outcomes.

Deaths & Mortality

B.6 In each scenario, historical mid-year to mid-year counts of deaths by sex and 5-year age group have been sourced from the ONS MYEs. Under the WG scenarios, historical deaths counts have been used until each scenario's base year.

B.7 For the dwelling-led and PG scenarios, death totals are used from 2001/02 to 2018/19. From 2019/20, an area-specific and age-specific mortality rate (ASMR) schedule is derived from the latest 2018-based NPP.

B.8 In each of the WG scenarios, the future counts of deaths are reproduced from their base year onwards to ensure consistency with the respective population growth outcomes.

Internal Migration

B.9 In each scenario, historical mid-year to mid-year estimates of internal in- and out-migration by five-year age group and sex have been sourced from the 'components of change' data that underpin the ONS MYE statistics.

B.10   In the WG scenarios, these historical estimates are used up to each respective base year, with future counts of migrants specified to remain consistent with the corresponding projection.

B.11   Under the PG scenarios, an area and age-specific migration rate (ASMigR) schedule is derived from a number of years of historical internal migration data, which then determines the future number of internal in- and out-migrants for the remainder of the plan period. For the **PG Short Term** scenario, this is derived from six years of historical data (2013/14–2018/19), for the **PG Long Term** scenario, this is derived from the full eighteen years of historical data (2001/02–2018/19).

B.12   Under the **Dwelling-led** scenarios, future internal migration assumptions have been derived from the full eighteen-year historical period **(PG-Long Term),** with migration altered to meet annual dwelling growth requirements.

International Migration

B.13   Historical mid-year to mid-year counts of immigration and emigration by five-year age groups and sex have been sourced from the 'components of population change' data that underpin the ONS MYEs.

B.14   In the WG scenarios, these counts are used up to each scenario's respective base year, with future counts of migrants specified directly from the projection statistics.

B.15   In the **PG-Short Term** and **PG-Long Term** scenarios, historical counts of immigration are used from 2001/02 to 2018/19. From 2019/20 onwards, an ASMigR schedule of rates is derived from a six-year and eighteen-year international migration history respectively and used to distribute future counts by single year of age and sex.

B.16   For the **Dwelling-led** scenarios, future international migration assumptions are derived from the full eighteen-year historical period **(PG Long Term)**.

Households & Dwellings

B.17   A household is defined as, "*one person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area*". A dwelling is defined as a unit of accommodation which can either be occupied by one household or vacant.

B.18   Apart from the **Dwelling-led** scenario, the household and dwelling implications of each population growth trajectory have been estimated through the application of household membership rates, communal population statistics and a dwelling vacancy rate. These assumptions have been sourced from the 2011 Census and both the WG's 2018-based household projection model. In the **Dwelling-led** scenarios, these assumptions are used to determine the level of population growth required by the defined dwelling growth trajectory.

Membership Rates

B.19   The membership rates are used to calculate the proportion of the household population in each household category by age group and sex (Table 3), taken from the WG household model. The

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household population is converted into households using average household size assumptions, taken from the household model.

Table 3: WG Household Categories (Source: WG)

Household Category
1 person
2 person (No children)
2 person (1 adult, 1 child)
3 person (No children)
3 person (2 adults, 1 child)
3 person (1 adult, 2 children)
4 person (No children)
4 person (2+ adults, 1+ children)
4 person (1 adult, 3 children)
5+ person (No children)
5+ person (2+ adults, 1+ children)
5+ person (1 adult, 4+ children)

Communal Population Statistics

B.20   Household projections in POPGROUP exclude the population 'not-in-households' (i.e. the communal/institutional population). These data are drawn from the WG household projection. Examples of communal establishments include prisons, residential care homes and student halls of residence.

B.21   For ages 0-74, the number of people in each age group 'not-in-households' is fixed throughout the forecast period. For ages 75-85+, the population not-in-households varies across the forecast period depending on the size of the population.

Vacancy Rate

B.22   The relationship between households and dwellings is modelled using a 'vacancy rate', derived from the 2011 Census using statistics on households (occupied household spaces) and dwellings (shared and unshared). A vacancy rate of 4.8% for Bridgend has been applied and fixed throughout the forecast period. Using the vacancy rate, the 'dwelling requirement' of each household growth trajectory has been evaluated.

Labour Force & Jobs

B.23   The labour force and jobs implications of each population growth trajectory have been estimated through the application of three key economic assumptions: economic activity rates, commuting ratio and an unemployment rate.

Economic Activity Rates

B.24   Economic activity rates are the proportion of the population that are actively involved in the labour force, either employed or unemployed and looking for work.

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B.25   Economic activity rates by five-year age group (ages 16-89) and sex have been derived from Census statistics, with adjustments made in line with the Office for Budget Responsibility's (OBR) analysis of labour market trends in its 2018 Fiscal Sustainability Report[6] (Figure 20).
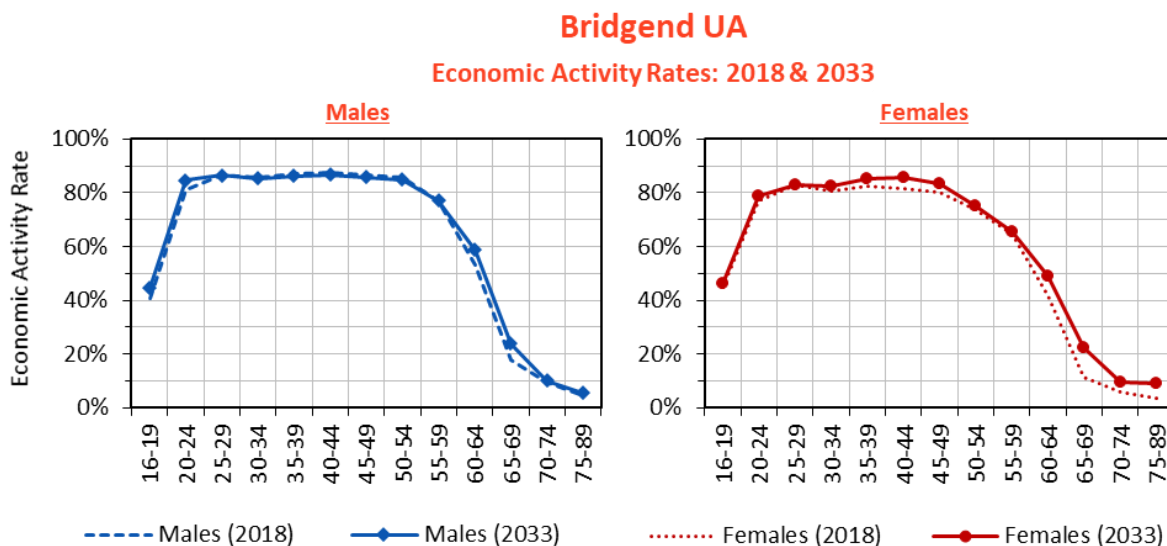

Figure 20: Economic Activity Rates for Bridgend (2018–2033)
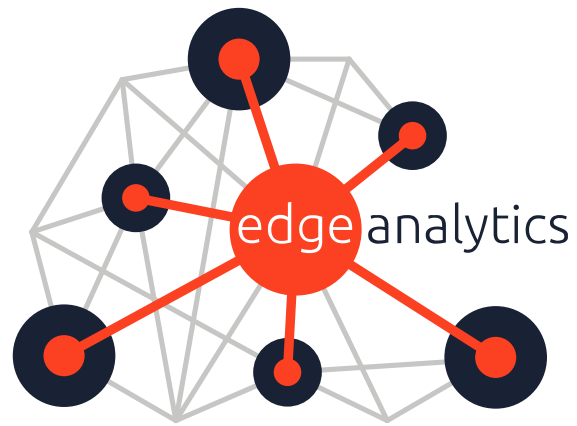
Commuting Ratio

B.26   The commuting ratio indicates the balance between the level of employment and the number of resident workers. A commuting ratio greater than 1.00 indicates that the size of the resident workforce exceeds the level of employment available in the area, resulting in a net out-commute. A commuting ratio less than 1.00 indicates that employment in the area exceeds the size of the labour force, resulting in a net in-commute.

B.27   The 2011 Census recorded 61,551 resident workers and a total of 60,767 people engaged in (workplace-based) employment in Bridgend. This results in a balanced commuting ratio of 1.01, a small net out-commute, which is applied in all scenarios and fixed throughout the forecast period.

Unemployment

B.28   The unemployment rate is the proportion of unemployed people within the total economically active population. Historical unemployment rates are sourced from ONS model-based estimates. For Bridgend, the 2019 rate of 4.0% has been applied in each scenario and fixed throughout the forecast period.

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[6] https://obr.uk/fsr/fiscal-sustainability-report-july-2018/