

MONMOUTHSHIRE DEMOGRAPHIC UPDATE

2022-based Welsh Government Projections
& Implications for the RLDP

September 2026

EDGE
ANALYTICS

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

Context & Requirements

- E.1 Monmouthshire County Council submitted its Replacement Local Development Plan (RLDP) to the Welsh Government (WG) and Planning Environment Decisions Wales in November 2025. The RLDP sets out a housing requirement of 5,400 over the 2018–2033 plan period and a jobs target of 6,240. These figures relate to the Local Planning Authority (LPA), which is the area of Monmouthshire Unitary Authority (UA) that excludes the Bannau Brycheiniog National Park.
- E.2 The RLDP targets were based on a demographic study undertaken by Edge Analytics in 2021. Using a range of statistics, Edge Analytics developed population growth scenarios for Monmouthshire LPA and UA using its in-house forecasting models and an industry-standard modelling approach. These scenarios provided an estimate of the potential future population, household, dwelling, labour force, and employment growth in Monmouthshire between 2018 and 2033.
- E.3 The council selected a long-term migration trend scenario as its preferred option for the RLDP. Importantly, this '*RLDP scenario*' applied a series of what were referred to as 'policy on' adjustments, changing the underpinning **migration**, **household**, and **commuting** assumptions. Specifically, the adjustments considered:
- An increase in migration from Bristol and South Gloucestershire resulting from the removal of the Severn Bridge tolls
 - Higher levels of household growth in young adults (aged 19–34) to address any issues related to lower or 'suppressed' levels of household growth due to, for example, worsened housing affordability
 - A gradual reduction in the proportion of the resident labour force commuting out of Monmouthshire to other local authorities.
- E.4 Since the evidence was produced, WG released its **2022-based population and household projections** for local authorities in Wales, providing an updated official picture of potential future growth in Monmouthshire between 2022 and 2047. These projections, which are based on past trends, have replaced the previous 2018-based projections, which helped to inform the 2021 Edge Analytics study.
- E.5 The 2022-based WG projections result in **higher population and household growth** than the previous projections. This is a result of changes to the methodologies used by WG, as well as changing demographic trends and updated historical population data that is used to generate the projections.
- E.6 Prior to the RLDP Examination, the Inspector asked the council to evaluate whether the adjustments that were applied in the RLDP scenario should be applied to the 2022-based WG 'Principal' (or central) projection.

- E.7 The council therefore commissioned Edge Analytics to provide a technical response to the Inspector's question. **This Executive Summary provides a non-technical summary of the analysis and conclusions.**

Demographic Review

- E.8 To assist in answering the Inspector's questions, Edge Analytics has collated and analysed a range of demographic data, including the latest population statistics and official projections for Monmouthshire. Using Edge Analytics population forecasting models, the 2022-based WG official projection has been compared to the *RLDP scenario* and a range of updated trend scenarios, based on the latest demographic trends. Note that the evidence and scenarios presented by Edge Analytics in this report relate to the **Unitary Authority** of Monmouthshire (not the LPA).

Migration Adjustments

- E.9 To determine whether the **migration adjustments** used in the *RLDP scenario* to model an increase in migration from Bristol and South Gloucestershire should be applied to the WG projection, Edge Analytics has undertaken a review of the official projections and the latest population statistics for Monmouthshire.
- E.10 The population projections produced by WG (and those produced by Edge Analytics) are based on migration, fertility and mortality assumptions calculated from the historical population data. The source of this is the mid-year population estimates (MYE) and 'components of change' (births, deaths, migration) published annually by the Office for National Statistics (ONS).
- E.11 The MYE show that historical population change in Monmouthshire between 2001 and 2025 has been driven by a **higher number of deaths than births** (linked to the relatively elderly profile of the population in Monmouthshire), as well as **migration from elsewhere in the UK** (internal migration). Internal migration peaked between 2019/20 and 2022/23. Migration from overseas (international migration) is relatively low in Monmouthshire, although it did increase between 2021/22 and 2022/23. Across the UK, between 2021 and 2024, net international migration reached levels not seen before. Since then, levels have dropped.
- E.12 Following a Census, the ONS reviews its MYE between the latest and previous Census and adjusts (or 'rebases') them to **better align the population estimates**. In Monmouthshire, the 2021 Census population estimate was *lower* than expected, meaning that the previous MYE over-estimated population growth between 2011 and 2021 (note that these 'previous' MYE were the ones that were used to generate the population growth scenarios in the 2021 Edge Analytics study).
- E.13 The ONS therefore published new MYE for 2012 to 2021. Some of the differences between the old ('previous') and new ('rebased') MYE were a result of changes to the migration estimates; migration is the most challenging driver of population change to estimate (particularly international migration). However, there is an element of population change between 2011 and 2021 that the ONS has not been able to associate with any of the components of change. This is referred to as '**Unattributable Population Change**' or UPC. Edge Analytics considers that UPC is most likely associated with migration.

- E.14 The 2022-based WG population projections are based on MYE data up to 2022, including the rebased MYE. It is assumed WG *excludes* UPC from the historical estimates. This means that the official projection results in a relatively **higher level of population growth** as the population decline implied by the UPC adjustment is ignored. The 2022-based WG projections are also based on the period of higher migration seen in Monmouthshire between 2019 and 2023.
- E.15 Regarding migration from Bristol and South Gloucestershire, the MYE evidence shows an increase in migration from these authorities to Monmouthshire following the removal of the Severn Bridge tolls in 2018. The growth peaked in 2021 and 2022 and has since reduced.
- E.16 On this basis, it was not considered necessary to apply any adjustments to the 2022-based WG projection as the future growth assumptions underpinning it are already based on this period of higher growth.

Household Growth Adjustments

- E.17 To establish whether it is appropriate to apply adjustments to the 2022-based WG projection to take account of ‘suppressed’ household formation, Edge Analytics compared the 2018-based and 2022-based household projections, and the assumptions that underpin these, as well as looking at a range of data on household characteristics.
- E.18 Within the *RLDP scenario*, future levels of household growth were calculated using assumptions from the official 2018-based WG household projection. This projection assumed that over time, the proportion of young adults living in smaller households would decline. It was suggested that this was a result of the pressures that young adults face when buying or renting their own home due to continued worsening affordability (e.g. young adults potentially not able to move out of house shares/family homes into their own homes). Adjustments were therefore made in the young adult age groups (19–34) to model an increase in the number of smaller households.
- E.19 In the latest 2022-based WG household projection, the changes in the proportions of smaller households in young adult age groups are not as large as in the 2018-based projection; the rates either decline slightly or increase slightly. Whilst this might suggest an improvement in household formation, it possibly reflects reducing fertility rates and people having fewer children. There are many factors that influence household size and structure through time and at different life stages. Data on household overcrowding, ‘concealed’ families (such as a young couple living with elderly parents) and housing affordability all suggest that conditions have continued to worsen, particularly for younger households.
- E.20 Therefore, adjustments have been applied to the 2022-based WG household assumptions to model an increase in the proportion of smaller households in the younger age groups. These adjustments are relatively modest but result in an increase in the number of households formed when applied to the 2022-based WG projection.

Commuting Adjustments

- E.21 In the *RLDP scenario*, a gradually reducing net out-commute from Monmouthshire was modelled, reducing the proportion of the resident labour force that commuted out of

Monmouthshire for work. The commuting assumptions were calculated from 2001 and 2011 Census data.

- E.22 Although 2021 Census data on commuting is now available, ONS cautions against reliance on this due to the timing of the Census during the COVID pandemic. The restrictions on population mobility throughout the lockdowns and easing of these mean that the commuting patterns estimated do not reflect 'normal' conditions. The 2021 Census data suggested that the out-commute from Monmouthshire had reduced considerably.
- E.23 On the basis of this uncertainty, the assumptions used in the RLDP scenario have been applied, as well as a second set of assumptions that model a higher reduction in out-commuting between 2018 and 2033.

Demographic Scenarios

- E.24 To model the impacts of the identified household and commuting adjustments, Edge Analytics has used its suite of forecasting models (VICUS) to produce a range of population growth scenarios for Monmouthshire for comparison with the *RLDP scenario*. For each scenario, an estimate of the potential future population, household, dwelling, labour force, and employment growth in Monmouthshire between 2018 and 2033 is calculated.
- E.25 This includes the official 2022-based WG population projection (referred to in the modelling as *WG-2022*), the previous 2018-based WG projection (*WG-2018*) and two alternative *Trend* scenarios that use the latest MYE evidence up to 2025. The reason the *Trend* scenarios have been produced is the reliance of the 2022-based WG projection on a period of relatively high growth (which the MYE data suggests has reduced since then), as well as the fact that it appears the UPC adjustment has been ignored (resulting in higher growth than past trends imply). The *Trend* scenarios use a short-term (*Trend-5yr*) and a longer-term (*Trend-15yr*) migration trend.
- E.26 The scenario outcomes are summarised in the table below. Note that the assumptions in the *WG-2018* and *RLDP* scenario remain unchanged from the 2021 Edge Analytics study.

Table E1: Monmouthshire modelling outcome summary, 2018–2033

Scenario	Population % Growth 2018–2033	Household % Growth Range 2018–2033	Dwelling Growth Range (dwellings per year)	Labour Force % Growth 2018–2033	Employment Growth Range (employment per year)
<i>RLDP Scenario</i>	10.9%	13.8%	387	11.9%	416
<i>WG-2022</i>	10.7%	14.3-14.8%	398-411	10.0%	332-451
<i>Trend-5yr</i>	8.9%	12.6-13.0%	349-361	8.7%	298-415
<i>Trend-15yr</i>	6.7%	10.5-11.0%	293-304	6.0%	226-338
<i>WG-2018</i>	4.9%	6.8%	191	5.0%	222

Note: Dwelling growth has been calculated from the household growth outcomes using a 'dwelling vacancy rate' of 4.5%, derived from Census statistics.

- E.27 Note that there are **two household and dwelling growth outcomes** for the *WG-2022* and *Trend* scenarios because of the two different household growth assumptions applied: the lower outcome results from the unadjusted 2022-based household assumptions and the higher outcome results from assuming a higher number of smaller households in the young adult age groups.
- E.28 There are also **two different employment growth outcomes** because of the two different commuting profiles applied. The lower outcome results from a modest reduction in out-commuting (the same assumptions as applied in the RLDP scenario) and the higher outcome from assuming a larger reduction in the net out-commute.
- E.29 Also note that the labour force growth in the *WG-2022* and *Trend* scenarios has been calculated using economic activity rates from the 2021 Census; the 2021 study (and therefore the *RLDP scenario*) use the slightly *higher* 2011 Census economic activity rates. These assumptions have been updated due to the changes to the state pension age that have occurred and continued lower levels of economic activity, particularly in the younger adult age groups.
- E.30 **Note that the scenarios outcomes are a result of the assumptions applied.** If household growth happened at a higher rate than that modelled here (for example, as a result of improved affordability and housing growth), then the dwelling growth outcomes would be higher. The same logic applies to the labour force assumptions: if economic activity rates were to increase in combination with a reduced net out-commute, the employment growth outcomes would be higher.

Summary Comments & Conclusions

- E.31 The 2022-based WG *Principal* population projection (*WG-2022*) produces a slightly *lower* level of population growth compared to the *RLDP scenario* but higher household and dwelling growth outcomes. This is a result of the different population profiles, and the different household growth assumptions applied.
- E.32 The dwelling growth figure of the *RLDP scenario* (387 per year) is slightly *lower* than the range implied by the *WG-2022* scenario (398–411). The employment growth outcome of the *RLDP scenario* (416 per year) sits within the range implied by the *WG-2022* scenario (332–451).
- E.33 Whilst these similarities offer reassurance that the RLDP requirement remains appropriate, **it is important to acknowledge the limitations of the 2022-based WG projections.** The official projection is based on relatively high levels of historical migration that are unlikely to return (at least in the short-term). The official projection also does not adequately reflect the historical growth profile in Monmouthshire due to the exclusion of the UPC adjustment.
- E.34 For these reasons, the *Trend-5yr* scenario is considered a more appropriate short-term population trend projection than the *WG-2022* scenario as it is better aligned with recent trends.
- E.35 Whilst the *Trend-5yr* population growth outcome is lower than the *RLDP scenario* (8.9% vs. 10.9%), and the resulting dwelling and employment outcomes are lower, **the range in the outcomes highlights the sensitivity of the modelling to changes in the underpinning assumptions.**

- E.36 It is entirely possible that household growth may increase to levels higher than those modelled here, for example through improved affordability and housing growth; this would *increase* the dwelling growth outcome of the *Trend-5yr* scenario.
- E.37 Furthermore, there is uncertainty around levels of economic activity and commuting patterns. If rates of economic activity were to return to 2011 levels, for example, the resident labour force would be larger and able to support a higher level of employment growth than that modelled here.
- E.38 On balance, the evidence collated and analysed in this report suggests that the RLDP housing and employment targets remain appropriate for Monmouthshire and that the 2022-based WG Principal projection should be treated with caution.

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I INTRODUCTION

Context

- 1.1 Monmouthshire County Council (MCC) submitted its Replacement Local Development Plan (RLDP) to the Welsh Government (WG) and Planning Environment Decisions Wales (PEDW) for examination on 7th November 2025. The RLDP identifies a housing requirement for Monmouthshire **Local Planning Authority (LPA)**¹ of **5,400** over the 2018–2033 plan period (360 dwelling per year), increased to **6,210** homes (414 per year) with a 15% flexibility allowance. The provision of **6,240** jobs is also identified.²
- 1.2 The RLDP housing requirement was based on a demographic study undertaken by Edge Analytics in 2021.³ For this study, a demographic profile of Monmouthshire was produced, along with a range of population growth scenarios developed using POPGROUP forecasting technology. Scenarios were generated for the **Unitary Authority (UA)**, i.e. including the part of Bannau Brycheiniog National Park that falls within Monmouthshire, as well as for the **LPA** (i.e. excluding the National Park). For each scenario, population (births, deaths, migration), household and dwelling, and labour force and employment outcomes were produced.
- 1.3 The scenarios drew their underpinning population growth assumptions from the then-latest mid-year population estimates (MYE) and associated ‘components of change’ statistics (births, deaths, migration) from the Office for National Statistics (ONS). The 2018-based WG population and household projections provided the official benchmark as the latest government projections for Monmouthshire at the time. Household growth assumptions were derived from the WG household projections, and labour force assumptions derived from the Census.
- 1.4 From the evidence base, the council identified the *PG Long Term Adj (5yr) (MR, CR_R)*⁴ scenario as its preferred RLDP option (referred to in this report as the ‘*RLDP scenario*’). This scenario resulted in an estimated 10.9% growth in the population over the plan period (2018–2033), compared to 4.9% under the 2018-based WG *Principal* projection. Note that in this report, any reference to the RLDP scenario refers to the UA-level scenario (rather than the LPA scenario).
- 1.5 The *RLDP scenario* is trend-based but had a series of ‘**policy-on**’ assumptions applied, in relation to **migration**, **household formation**, and **commuting**.
- 1.6 Since this evidence was produced, **Welsh Government has released its 2022-based population⁵ and household⁶ projections for local authorities**. These projections are the first to take account of the 2021 Census and are informed by what are referred to as the ‘rebased’

¹ The LPA covers the area of Monmouthshire Unitary Authority (UA) outside the Bannau Brycheiniog National Park. All statistics and analysis presented in this report refer to the full Unitary Authority unless specified otherwise.

² MCC [RLDP Submission](#)

³ Edge Analytics (November 2021) [Monmouthshire: Updating the Demographic Evidence](#)

⁴ PG is the abbreviation for POPGROUP, the demographic forecasting model previously used by Edge Analytics.

⁵ WG (November 2025) [Local Authority Population Projections: 2022-based](#)

⁶ WG (November 2025) [Local Authority Household Projections: 2022-based](#)

MYE. These MYE, released by the Office for National Statistics (ONS) in November 2023⁷, better align the 2011 and 2021 Census population estimates.

1.7 MCC has prepared a Position Paper on the 2022-based Welsh Government projections, concluding that these are 'closely aligned' with the RLDP growth strategy and that the Deposit Plan represents *"a sustainable and deliverable level of growth"*.⁸

1.8 The Inspector has shared a number of pre-hearing questions with the council, one of which is:

"Should the 'policy on' adjustments used in deriving the Plan's housing and employment growth levels be applied to the [Welsh Government's] 2022-based population and household projections? If not, why?"

1.9 To address this, the council has commissioned Edge Analytics to review the available data and provide a technical response to the Inspector's question.

RLDP Scenario

1.10 From the range of demographic growth scenarios presented in the 2021 Edge Analytics report, the council selected the *PG Long Term Adj (5yr) (MR, CR_R)* scenario to inform the RLDP (note that in this report, this scenario is referred to as the '*RLDP scenario*'). This scenario was based on the Edge Analytics *PG Long Term* scenario, which is trend-based.

1.11 The population forecasting models used by Edge Analytics adopt a 'cohort component' methodology, which produces population projections by single year of age and sex using assumptions related to fertility, mortality and migration (internal and international in- and out-flows). These assumptions are derived from historical trends.

1.12 Alongside the main population model is a 'derived forecast' model, which provides a 'membership rate' model for household and dwelling projections, and an economic activity rate model for labour force and employment projections. Note that this forecasting methodology is comparable to that used by the ONS, WG and other statistical agencies.⁹

1.13 Figure 1 summarises the methodology by which a trend scenario is produced in the forecasting models.

1.14 Within the baseline *PG Long Term* scenario on which the *RLDP scenario* was based, migration assumptions were derived from a long-term MYE history (2001/02–2019/20) and fertility and mortality assumptions from the 2018-based WG *Principal* projection.

⁷ ONS (November 2023) [Rebasing of mid-year population estimates following Census 2021, England and Wales](#)

⁸ MCC (March 2026) [WG Population and Household Projections and Housing Needs Updates Position Paper](#)

⁹ See Appendix A for further detail on the Edge Analytics forecasting methodology and the 2021 Edge Analytics study for further information on the RLDP scenario assumptions.

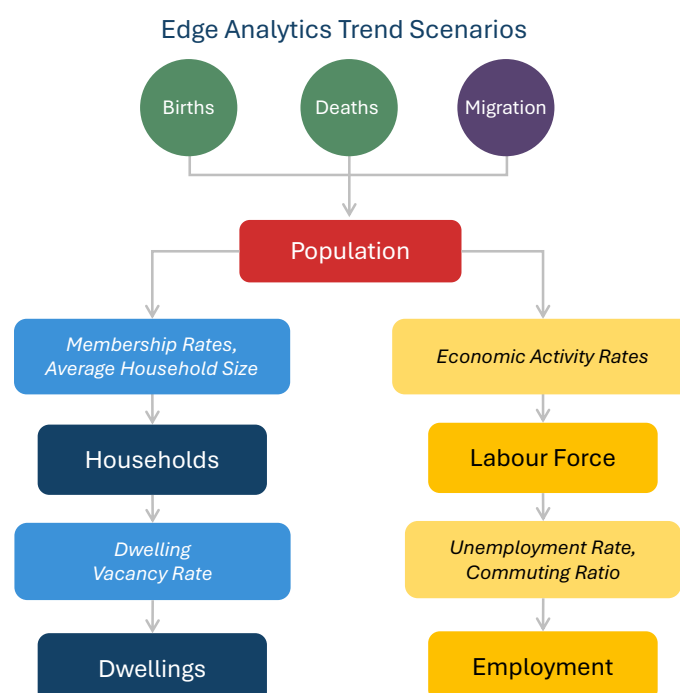


Figure 1: Trend scenario methodology

1.15 The following additional ‘**policy-on**’ adjustments were applied to produce the *RLDP scenario*:

- An increase in **in-migration** from Bristol and South Gloucestershire (above the long-term trend), modelling the potential impact of the removal of the Severn Bridge tolls in 2018. The scenario utilised a *Long Term* migration history (2001/02–2019/20 period) with the internal (domestic) in-migration rates uplifted based on the latest 5-year migration history from Bristol and South Gloucestershire (*Adj (5yr)*).
- Improvements to the rates of **household formation** in the young adult age groups (19–34) to address ‘suppression’ in the household membership rates (*MR*) within the 2018-based *WG* household projections. Rates in these age groups were returned to their respective 2001 values between 2018 and 2033, resulting in higher levels of household growth.
- An adjusted **commuting ratio** profile modelling a reducing net out-commute (*CR_R*) over the plan period, thereby increasing the level of employment that could be supported within Monmouthshire. The 2011 Census commuting ratio of 1.12 was applied, reducing to 1.10 by 2033.

1.16 The UA outcomes of the *RLDP scenario* are summarised in Table 1 alongside the unadjusted *PG Long Term* scenario, and the 2018-based *WG Principal* official benchmark from the 2021 study. The impact of the migration adjustments is evident in the population growth outcome: with increased in-flows from Bristol and South Gloucestershire, population growth increased from 6.4% under the *PG Long Term* scenario to 10.9%.

- 1.17 With higher levels of population growth and improved rates of household formation, household growth was boosted to 13.8%, compared to 8.0% under the *PG Long Term* scenario. The gradually reducing net out-commute, in combination with a higher level of population growth, *increased* the level of employment that could be supported in Monmouthshire.

Table 1: Edge Analytics 2021 Monmouthshire *UA* scenario summary

Scenario	Change 2018–2033				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Employment
RLDP Scenario	10,285	10.9%	5,548	13.8%	1,068*	387	416
PG Long Term	5,988	6.4%	3,189	8.0%	805	223	205
WG-2018 (Principal)	4,584	4.9%	2,732	6.8%	726	191	160

Source: Edge Analytics 2021. *Net internal migration = 921 per year and net international 147 per year.

Approach & Report Structure

- 1.18 In determining whether it is appropriate to apply the previous (or updated) **migration**, **membership rate**, and **commuting** adjustments to the 2022-based WG projections, the following must be considered:
- Do the ‘policy-on’ **adjustments** that were applied in the 2021 Edge Analytics study remain relevant?
 - Does the 2022-based WG *Principal* **population projection** imply a higher level of in-migration from South West England compared to the RLDP scenario? What does the latest migration data suggest has happened since 2022?
 - Does the 2022-based WG *Principal* **household projection** result in growth outcomes similar to those produced using the 2018-based projections that underpinned the previous study? Do the latest projections imply that household formation in the young adult age groups has been and will continue to be ‘suppressed’?
 - Does the latest evidence on labour force and employment suggest that the relatively high net out-commute from Monmouthshire assumed in the previous study has continued?
- 1.19 This report combines a **demographic review** with **demographic forecasting**, to answer the Inspector’s ‘policy-on adjustments’ question and to provide the Council with the latest demographic evidence ahead of Examination.
- 1.20 This report is structured as follows.
- 1.21 In **Section 2**, an overview of the 2022-based WG population projections is provided, with comparison made to the previous 2018-based WG projections. The underpinning demographic

assumptions are summarised, with a focus on internal migration between Monmouthshire and South West England (specifically Bristol and South Gloucestershire).

- 1.22 As well as the 2022-based WG projections, since the 2021 Edge Analytics study was completed, three further years of post-Census MYE evidence has been published.¹⁰ This, combined with the rebased MYE, provides an updated profile of historical population growth for Monmouthshire compared to the that used in the 2021 Edge Analytics Report.
- 1.23 **Section 3** presents the 2022-based WG household projections, with a specific focus on the underpinning **membership rates** and the differences between these and the previous 2018-based projections that informed the previous study.
- 1.24 In **Section 4**, the latest **commuting** evidence is presented, together with the latest evidence on labour force characteristics.
- 1.25 At the end of each of these Sections (2–4), there are conclusions on the appropriateness of the relevant ‘policy-on’ adjustments for the 2022-based WG projections.
- 1.26 In **Section 5**, the 2022-based WG projections are presented for the 2018–2033 MCC Plan Period, with the identified adjustments applied where appropriate. Given the time that has elapsed since the 2021 Edge Analytics study was completed, recent demographic shifts, and data updates, the official 2022-based projections are benchmarked against two alternative migration trend scenarios. Note that this scenario evidence has been produced for the Unitary Authority area only.
- 1.27 **Section 6** summarises the analysis and the implications for the RLDP targets.
- 1.28 The **Appendices** provides detail on the Edge Analytics forecasting methodology.

¹⁰ ONS [Population estimates](#)

2 MIGRATION

Introduction

- 2.1 To establish whether it is appropriate to apply any adjustments to the migration assumptions of the 2022-based WG *Principal* projection requires a scrutiny of the data and assumptions that underpin the official projections, and a consideration of the projections within the wider demographic context of Monmouthshire.
- 2.2 Since the 2021 Edge Analytics study was completed, the UK has seen significant changes to demographic trends. Fertility rates continue to decline¹¹, and population ageing continues to shift the balance between the working age and retired populations. International (i.e. overseas) migration reached unprecedented levels between 2021 and 2024, although recent UK estimates show that net international migration has returned to pre-2021 levels. The COVID-19 pandemic and the introduction (and subsequent easing of) restrictions impacted population mobility and patterns of migration, both internal and international.
- 2.3 This section therefore summarises the **2022-based WG population projections** and the **MYE evidence** that has been used to inform these. Comparison is made to the previous 2018-based round of projections, which provided the official benchmark in the 2021 Edge Analytics study, and to the MYE evidence that informed the *RLDP scenario*.
- 2.4 Since the 2022-based projections were released, a further 3 years of MYE evidence has also been published (up to mid-year 2025). Although not specifically requested by the Inspector, due to the time that has elapsed since the 2021 Edge Analytics study and the demographic shifts and data releases that have occurred over this time, the latest MYE evidence is also presented below.
- 2.5 At the end of this section, specific attention is given to the internal migration data that informed the 2022-based WG projections and the migration flow data between Monmouthshire and South West England.

WG Population Projections

Overview

- 2.6 Released in November 2025, the 2022-based WG local authority population projections provide statistics on the future potential size and structure of the population between 2022 and 2047. As in previous rounds, a *Principal* scenario and a range of population projection variants have been produced by WG (Table 2). Each scenario has a 2022 MYE base year of 90,049 people.¹² WG has derived future fertility, mortality and migration assumptions from the historical MYE evidence up to mid-year 2022.

¹¹ ONS (2026) [Births in England and Wales: 2025](#)

¹² Note that the 2022 MYE was revised by ONS in July 2026; the current 2022 MYE is 94,038 for Monmouthshire. The 2022 MYE that provides the base year to the 2022-based Welsh Government projection is 94,049.

Table 2: Welsh Government projection variants

Scenario Variant	Description
Principal	Principal ‘central’ projection, using 5-year migration trends (internal and international) and 5-year fertility and mortality trends.
High population	High fertility and high life expectancy, migration assumptions aligned with the principal projection.
Low population	Low fertility and low life expectancy, migration assumptions aligned with the principal projection.
10-year migration	10-year average migration (internal and international).
15-year migration	15-year average migration (internal and international).
Zero migration	Natural change only (the balance between births and deaths).

Source: WG. Note that in June 2026, WG republished the *High Population* and *Low Population* scenario variants due to a “*small error in the national population variant projections that were used*”.

- 2.7 As of September 2026, WG is yet to release its technical methodology report for its projections. The information summarised below is therefore based on the available information published by WG or provided via direct communication.

Population Growth Profile

- 2.8 Between 2022 and 2047, population growth in Monmouthshire (UA) is projected to range from -14% under the *Zero migration* scenario, to 23.4% under the *High population* variant. The *Principal* projection results in **16.6% growth over the 25-year projection period** (Figure 2). This is higher than the previous 2018-based *Principal* projection, which resulted in 7.5% population growth over its 25-year projection period (2018–2043).
- 2.9 The differences between the 2018-based and 2022-based projection outcomes are the result of **changes to demographic trends**, the **rebasings of the historical MYE**, as well as **changes to the methods** used to generate the projections.¹³ With no technical methodology document available, it is not possible to provide detailed commentary on any methodological changes that have been made in the 2022-based round of projections.
- 2.10 Regarding the underpinning MYE evidence, the previous 2018-based projections were based on the pre-Census and now out-dated MYE, whereas the 2022-based projections were informed by the rebased intercensal MYE, as well as utilising the post-Census 2022 MYE as the projection base year (further information on the MYE for Monmouthshire is provided below).
- 2.11 The components of change for the 2018-based and 2022-based *Principal* projections are summarised in Figure 3. Both projections draw their assumptions from a five-year MYE history up to the relevant base year; the histories are therefore included for reference (with lighter shading).

¹³ WG (November 2025) [Local authority population projections: 2022-based](#)

2022-based Welsh Government Population Projections: Monmouthshire

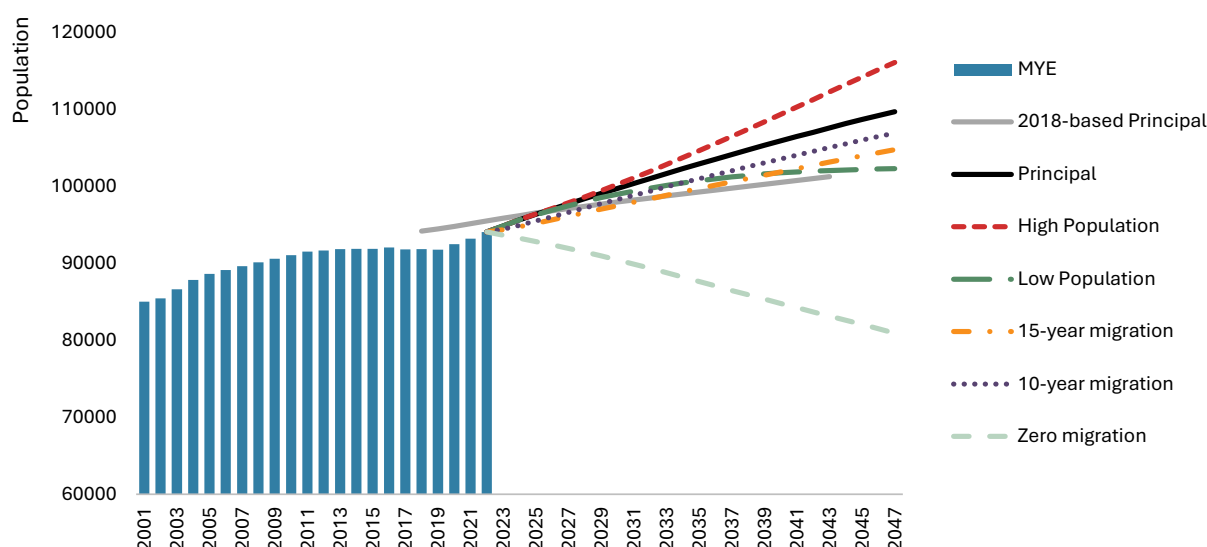


Figure 2: WG 2022-based population projections & ONS MYE, Monmouthshire

Source: ONS, WG. Note that the 2018-based Principal projection has a different starting point as it was based on now-outdated MYE evidence (further information is provided below).

WG Principal Projections: Components of Change

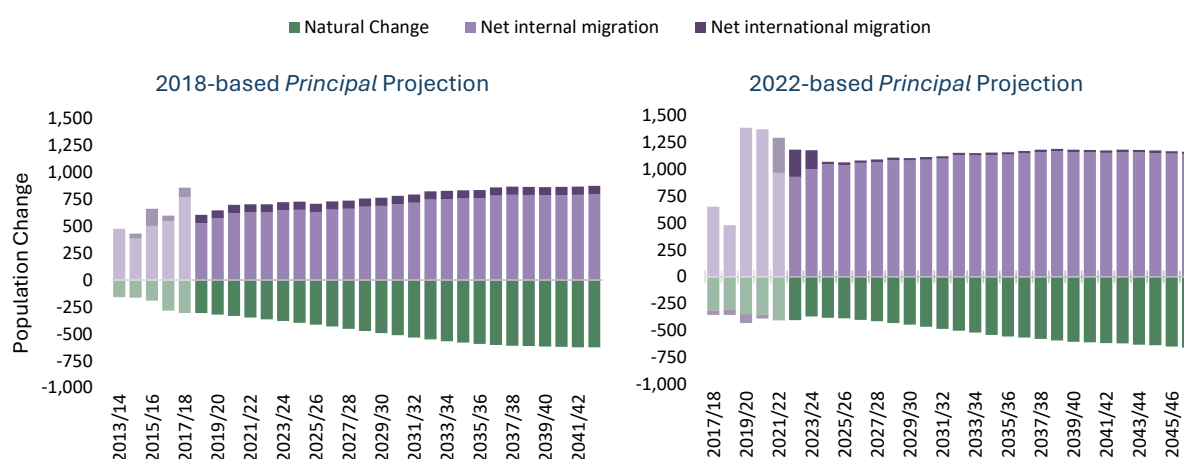


Figure 3: Principal projection comparison: 2018-based and 2022-based components, Monmouthshire

Source: WG. Note: UPC refers to unattributable population change.

2.12 With higher levels of net **internal** migration (i.e. domestic migration to/from elsewhere in the UK) in the years preceding 2022, the 2022-based *Principal* projection projects higher net internal migration than the 2018-based projection over the 25-year projection period (Table 3). Population loss through **natural change** (the balance between births and deaths) is slightly higher under the 2022-based projection as deaths are projected to continue to exceed the number of births.

2.13 Net **international migration** is projected to contribute little to population growth in Monmouthshire, but is *lower* under the 2022-based projection, a result of the lower levels of net international migration in the historical MYE that informed the projection. Note that in the 2022-

based projection, between mid-2022 and mid-2024, WG has aligned the international migration figures with the then-latest official migration estimates from ONS (rather than applying a trend-based migration figure from 2022).¹⁴

Table 3: 25-year growth comparison: *Principal* population projections, Monmouthshire

Principal Projection	Population Growth		Average per year	
	Change	% Change	Natural Change	Net Migration
2018-based (2018–2043)	7,088	7.5%	-495	778
2022-based (2022–2047)	15,626	16.6%	-522	1,147

Source: WG

Mid-Year Estimates

- 2.14 The 2022-based WG population projections are underpinned by the MYE up to mid-year 2022. This includes the ‘rebased’ 2012–2021 MYE produced by ONS following the 2021 Census. Within the 2021 Edge Analytics study, the un-rebased ‘previous’ MYE informed the demographic scenarios, which drew their assumptions from the MYE history up to mid-year 2020. These previous MYE also informed the 2018-based WG projections.

Rebased MYE

- 2.15 The size and structure of the UK population is estimated by the ONS each year in its MYE. The MYE are key official statistics and are used to inform the derivation of population projections, including those produced by WG and ONS (and Edge Analytics).
- 2.16 The MYE are produced by ‘rolling-forward’ the population from a Census estimate to mid-year, by adding the births and subtracting the deaths (i.e. natural change), and estimating the levels of in- and out-migration, both internal (domestic) and international (overseas). In subsequent years, the same process is applied to produce each MYE until another Census is carried out.
- 2.17 Following a Census, the ONS completes a reconciliation and rebasing exercise, adjusting the components of change and MYE to better align the Census estimates. A level of ‘drift’ is expected between the rolled forward MYE and the subsequent Census. **In Monmouthshire, the 2021 Census estimate of 92,597 was lower than the population implied by the rolled-forward MYE** (Figure 4). This is a pattern that was seen across Wales, with the exception of Newport and Wrexham where the Census population was higher than that implied by the MYE. In Monmouthshire, the overestimation in the rolled-forward MYE resulted in a *downward* revision to the intercensal MYE.

¹⁴ The same approach has not been taken in the WG 10-year migration and 15-year migration scenarios, where fixed international migration assumptions (derived from a 10-year and 15-year historical period respectively) have been applied from 2022 onwards. Note also that since the 2022-based WG projections were produced, ONS has revised the MYE international migration estimates, resulting in a slight upwards adjustment to the estimates for Monmouthshire between mid-2022 and mid-2024.

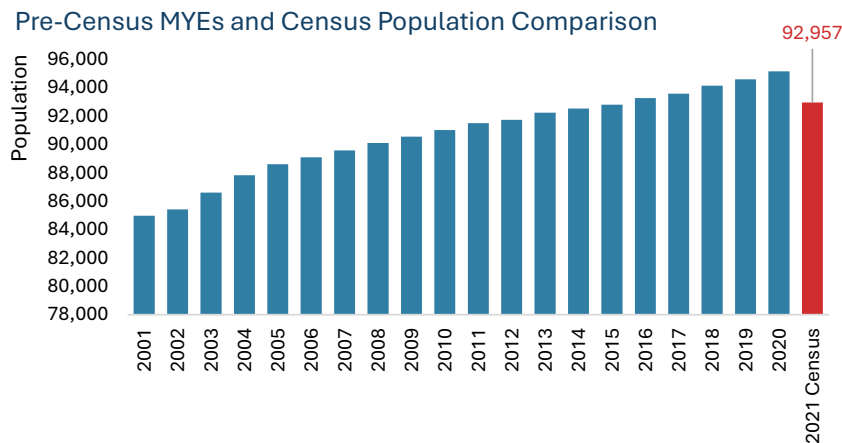


Figure 4: Monmouthshire pre-Census MYE and 2021 Census population

Source: ONS

- 2.18 The rebased MYE for Monmouthshire are compared to the previous non-rebased MYE profile in Figure 5. The latest post-Census MYE are also included. Not only were the intercensal MYE revised downwards, but there was a slight population *decline* in Monmouthshire between 2014 and 2019. Between 2019 and 2023, however, the population grew at a rate not seen in Monmouthshire since the early 2000s. Since 2023, the population growth rate has slowed, averaging 0.2% per year since mid-year 2023.

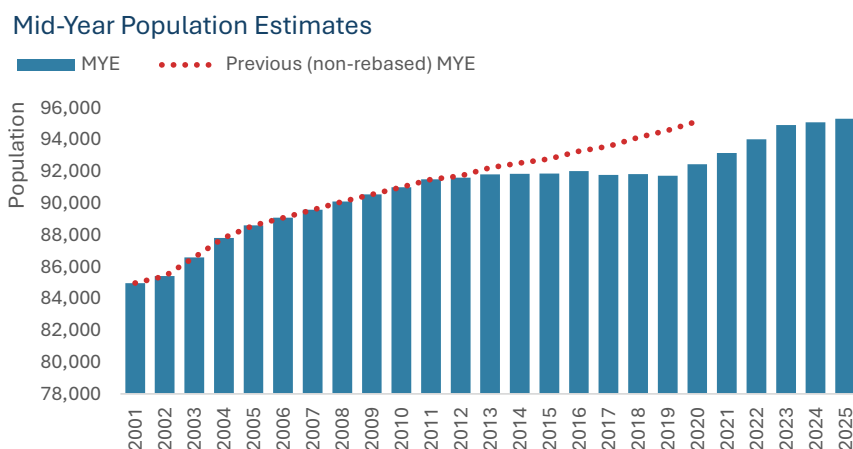


Figure 5: Monmouthshire MYE 2001–2025

Source: ONS

- 2.19 As of mid-year 2025, the population of Monmouthshire is estimated at **95,329**. Note that this is *lower* than the projected 2025 population under the 2022-based WG Principal projection, which was 96,327.
- 2.20 In July 2026, the Chief statistician for Wales highlighted the population reduction seen in Wales in the 2025 MYE and drew attention to the differences between the local authority projections, the National projections and the MYE.¹⁵ In light of these differences, WG has announced plans to “*start updating [the] projections from this autumn. This will include exploring whether [WG]*

¹⁵ WG (2026) [Chief statistician's update: latest population estimates and our plans to update projections](#)

need to make any changes to [the] methods to ensure coherence with the latest estimates and projections from the ONS”.

Components of Change

2.21 The components of change profiles for the previous (un-rebased MYE) and rebased MYE are illustrated in Figure 6, together with the latest available MYE up to mid-year 2025. The 5-year period which informed the 2018 and 2022 WG *Principal* projections are highlighted for reference. Note that the 2001–2011 MYE history remains unchanged between the top and bottom charts.

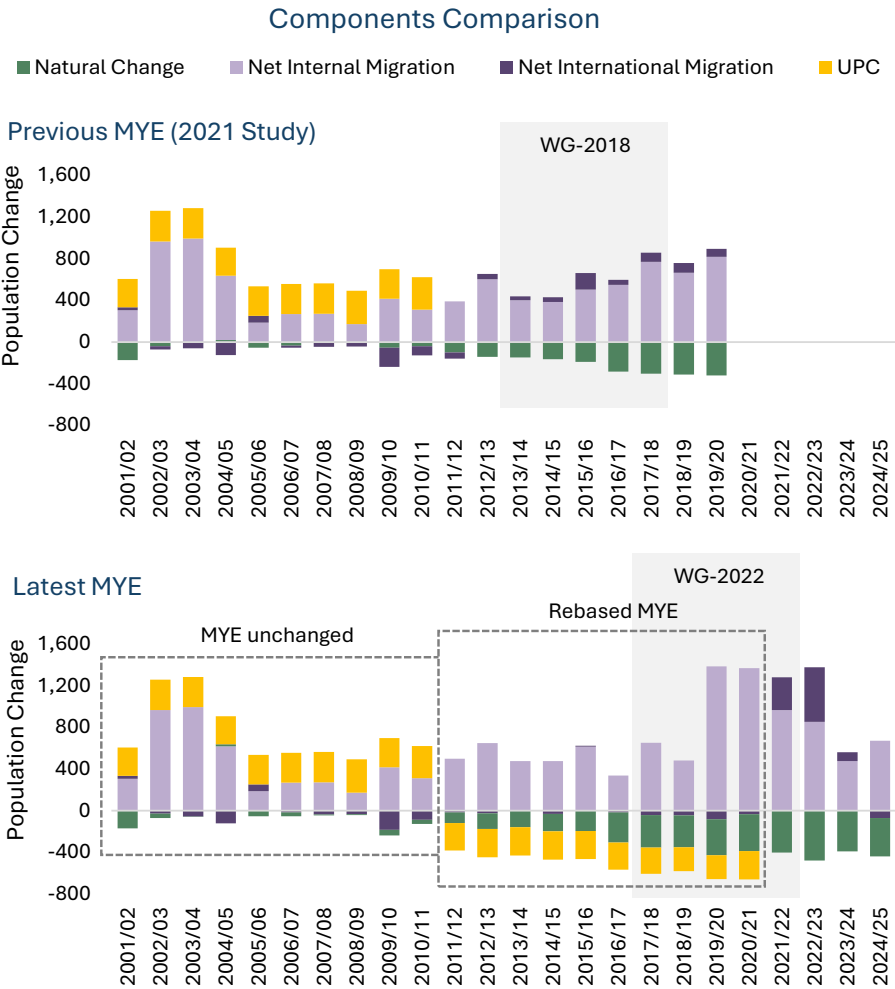


Figure 6: Monmouthshire components of change comparison

Source: ONS. Note that the grey shaded boxes illustrate the 5-year history that informed the official WG projections.

2.22 At a national level, the differences between the previous MYE and the rebased MYE are largely attributed to international migration flows, which are consistently the most challenging aspect of population change to estimate. At a regional and local authority-level, the misestimation of internal migration also contributes to the observed differences. Natural change is typically subject to limited revisions during the rebasing exercise as births and deaths are recorded in each year (in Monmouthshire, the difference between the rebased and ‘previous’ natural change estimates totals -63 only).

UPC

- 2.23 Within the rebased MYE history is an unattributable population change (UPC) component, which is residual population growth not assigned to any one of the components of change (but is necessary for the population estimates to align). ONS considers it likely that UPC is associated with migration, either internal and/or international, although it does not assign it to any flow in particular.
- 2.24 As illustrated in the top chart of Figure 6 (previous page), between 2001 and 2011 in Monmouthshire, the UPC adjustment was *positive* (the 2011 Census population was higher than the rolled-forward estimates). Between 2011 and 2021, the UPC adjustment was *negative*, a result of the 2021 Census estimate being *lower* than the rolled-forward MYE (as outlined above).
- 2.25 **Edge Analytics routinely includes the UPC adjustment in the historical international migration estimates**, as this is the component of change that is the most challenging to estimate. This approach was taken in the Edge Analytics 2021 study, as well as in this demographic update (see Section 5). Whilst UPC may not wholly be a result of the mis-estimation of international migration (e.g. there could also be mis-estimation of internal migration, or issues with the Census estimates), it could be accounted for within any of the historical components of change and the overall impact on a projection would be similar. **Neglecting to account for UPC within trend projections risks misrepresenting the historical profile of growth in an area.**¹⁶
- 2.26 Although not explicitly stated within the published information on the 2022-based subnational population projections, it is assumed that the UPC adjustment has not been included in the calibration of future growth assumptions. This would align with the previous projections produced by Welsh Government.¹⁷ The implications of this are discussed further in the Section 5 of this report.

International Migration

- 2.27 In the previous MYE, on which the 2021 Edge Analytics study was based, net international migration contributed to population *growth* in Monmouthshire, averaging 60 per year (see Figure 6). In the rebased MYE, however, net international migration overall contributed to population *decline* over the comparable time period, averaging -29 per year.
- 2.28 Post-Census, in 2021/22 and 2022/23, net international migration contributed to population growth in Monmouthshire, at a level not seen over the historical period (Figure 7).
- 2.29 The post-Census growth in net international migration mirrors changes seen at a regional and national level: between 2021 and 2024, the UK saw **unprecedented levels of net international migration**, peaking at around 940,000 in 2023.¹⁸ This growth was linked to migration through humanitarian routes (e.g. the Russia-Ukraine war), non-EU work-related migration in the health and social care sector and an increase in the number of dependents arriving with non-EU

¹⁶ GLA (2025) [ONS 2022-based Subnational Projections](#)

¹⁷ WG (2017) [Subnational population projections for Wales](#)

¹⁸ ONS (2026) [Long-term international migration, provisional: year ending December 2025](#)

workers on long-term work visas.¹⁹ The ONS highlights that pent-up demand for study following the COVID-19 pandemic also impacted the net migration figures.

2.30 Since the peak, net UK migration has dropped to 171,000 as of year ending December 2025, a trend generally mirrored at local authority level. This decrease is linked to a reduction in the number of people arriving on work and study visas, an increase in emigration, and changes to the rules around international students bringing dependents.

2.31 In the latest 2024/25 data, net international migration to Monmouthshire was negative, at -71.

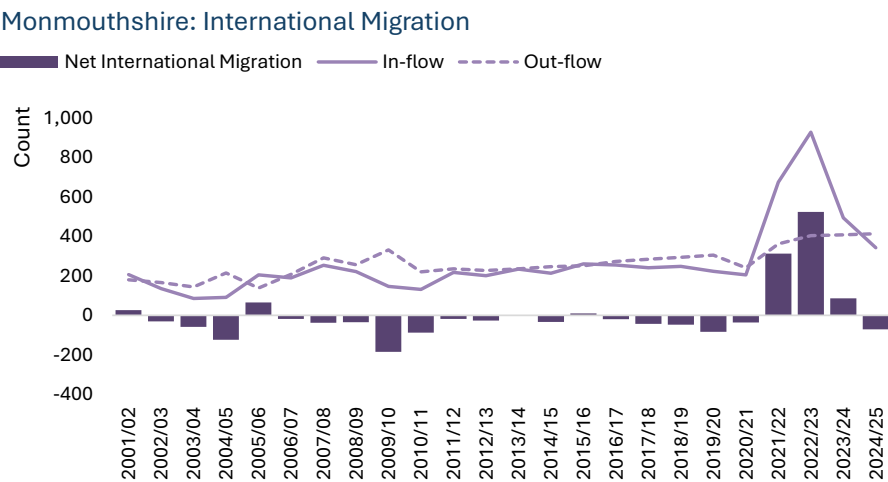


Figure 7: Monmouthshire, net international migration

Source: ONS. Note that the figures illustrated do not include UPC.

Internal Migration

2.32 In the rebased MYE, net internal (i.e. domestic) migration in the intercensal period increased from an average of 565 per year to 618 per year in Monmouthshire. The figures were revised *upwards* between 2011/12 and 2015/16, and *downwards* between 2016/17 and 2018/19 (Figure 9).

2.33 Post-Census, however, net internal migration increased, peaking at approximately 1,380 in 2019/20 and 2020/21, i.e. in the time-period that informed the 2022-based WG *Principal* projection. Indeed, the five-year period up to mid-year 2022 saw an average annual net internal migration figure of over 970, higher than the long-term average of 600 per year (2001/02–2024/25). This data has been used by WG to derive its future internal migration assumptions, resulting in net internal migration averaging over 1,100 per over the 2022–2047 projection period.

¹⁹ ONS (Nov 2023) [Long-term international migration, provisional: year ending June 2023](#)

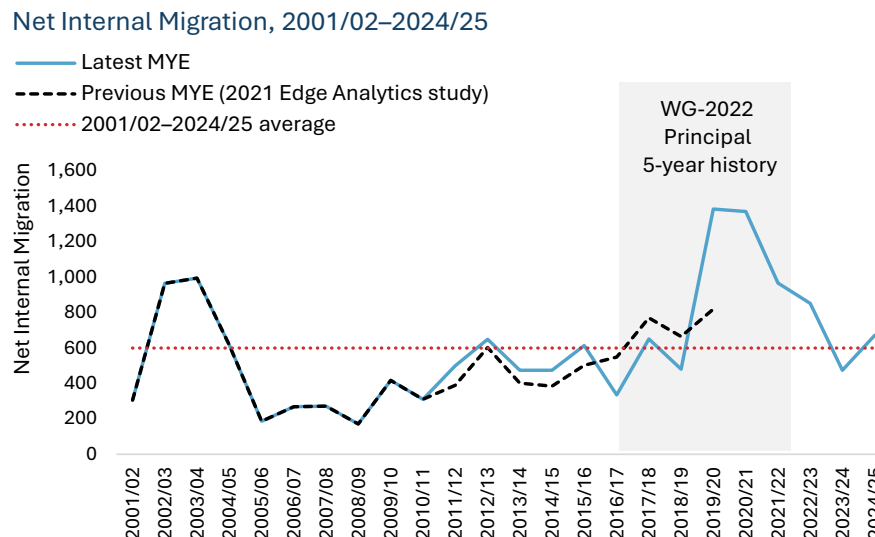


Figure 8: Monmouthshire net internal, previous vs. latest

Source: ONS

2.34 Since the peak, net internal migration has reduced in Monmouthshire, reaching 672 in 2024/25.

2.35 The net picture masks the substantial in- and out-flows seen in Monmouthshire, which have averaged 4,800 and 4,200 per year respectively (Figure 9). The recent decline in net internal migration has been driven by a reduction in the inflow to Monmouthshire.

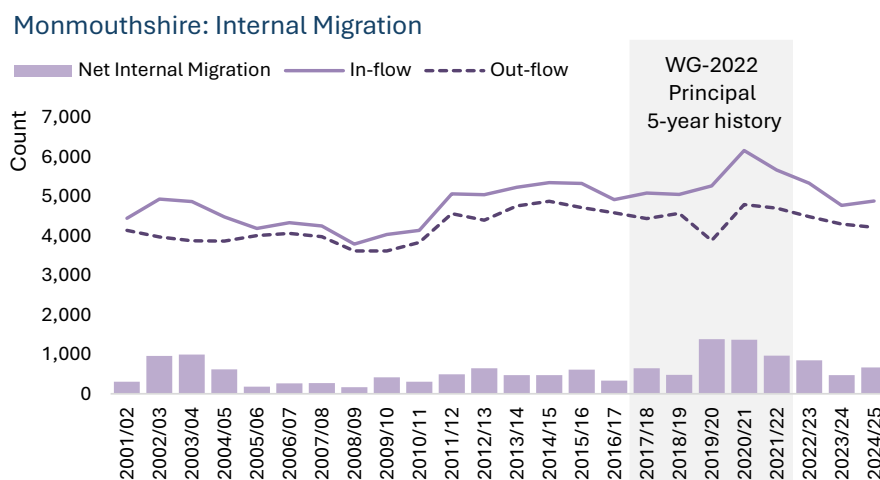


Figure 9: Monmouthshire, net internal migration

Source: ONS

Migration from South West England

- 2.36 Within the 2021 Edge Analytics study, ‘policy-on’ adjustments were applied to the internal migration assumptions to model an increased in-flow from **Bristol and South Gloucestershire**, which connect to Monmouthshire via the Severn Bridge. It was hypothesised that the removal of the bridge tolls would encourage people to move to Monmouthshire, attracted by the relatively lower house prices and increased commuting opportunities.
- 2.37 The MYE used to inform the 2021 Edge Analytics study extended to mid-year 2020 and, as outlined above, were the ‘previous’ now out-dated MYE. It is these MYE to which the adjustments were applied in the RLDP scenario.
- 2.38 Whether or not it is appropriate to apply the same (or comparable) adjustments to the 2022-based WG *Principal* projection depends on the extent to which the rebased and latest MYE (which informed the 2022-based projections) reflect an uplift in migration from these areas.
- 2.39 The latest ‘origin-destination’ migration data from ONS has therefore been used to quantify the level of in-, out- and net-migration with South West England in the latest MYE up to the 2022 WG base year, as well as providing commentary on the post-2022 changes.

Origin-Destination Flows

- 2.40 Over the full 2001/02–2024/25 time period, the top 10 in- and out- average annual migration flows are summarised in Table 4 for Monmouthshire. Both Bristol and South Gloucestershire feature in the top 10 in-flows, contributing an average of 253 and 201 people per year to Monmouthshire’s population respectively. Bristol also features in the top-10 out-flows, at a loss of 145 people per year. Whilst not in the top 10 outflows, there has been, on average, a loss of 80 people per year from Monmouthshire to South Gloucestershire.

Table 4: Origin-destination top 10 in- and out-flows (average per year, 2001/02–2024/25)

Top Ten <u>Inflows</u> to Monmouthshire		Top Ten <u>Outflows</u> from Monmouthshire	
<i>average 2001/02–2024/25</i>		<i>average 2001/02–2024/25</i>	
Newport	422	Newport	387
Forest of Dean	338	Forest of Dean	315
Cardiff	289	Cardiff	278
Torfaen	270	Torfaen	240
Bristol	253	Herefordshire	208
South Gloucestershire	201	Blaenau Gwent	169
Herefordshire	201	Bristol	145
Blaenau Gwent	165	Powys	132
Powys	126	Swansea	98
Caerphilly	123	Caerphilly	87

Source: ONS

- 2.41 On average, 5.3% of in-migration to Monmouthshire has been from Bristol and 4.2% from South Gloucestershire over the 2001/02–2024/24 period. However, these averages mask the increases that have been seen in recent years.
- 2.42 Internal migration between Monmouthshire and Bristol and South Gloucestershire is illustrated in Figure 10.

Monmouthshire: Net Internal Migration to/from Bristol & South Gloucestershire

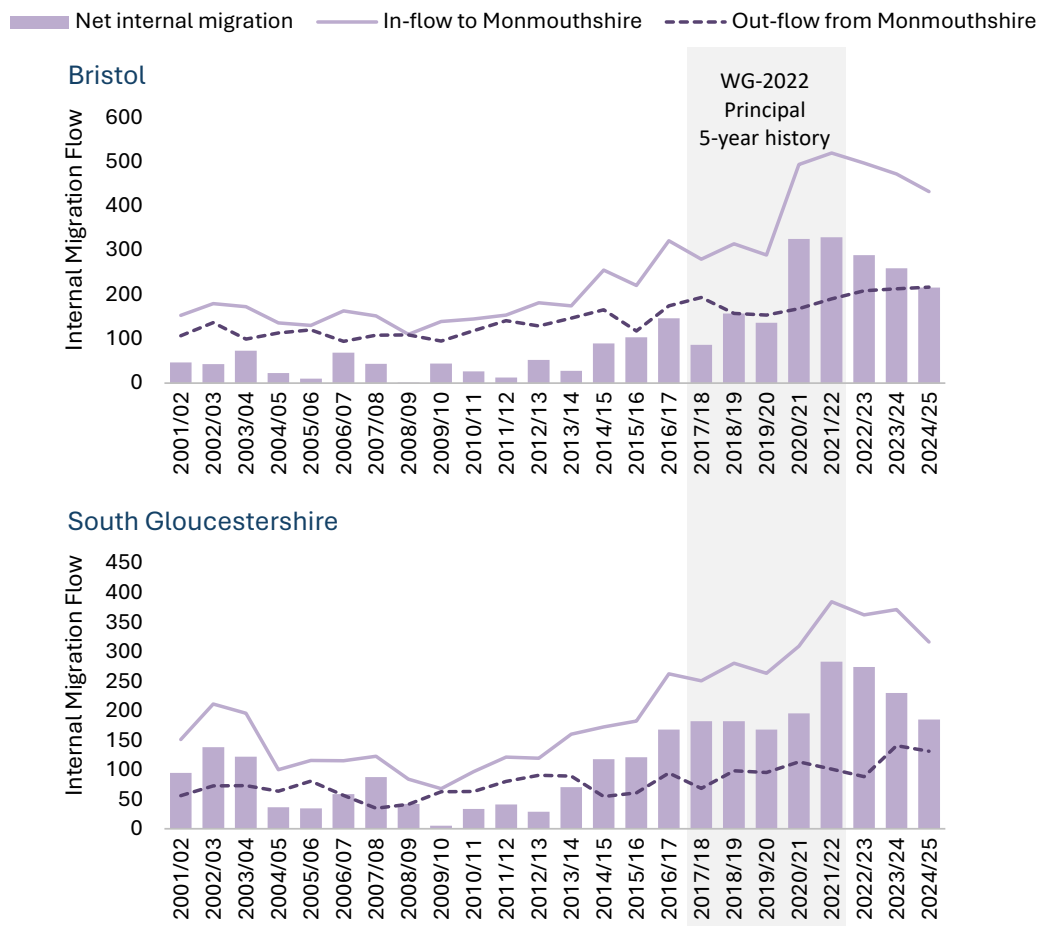


Figure 10: Monmouthshire internal migration flows with Bristol and South Gloucestershire

Source: ONS

- 2.43 In the five years preceding the WG 2022 projection base year (shaded in grey in Figure 10), the in-flows from both areas **increased**, whereas the outflows from Monmouthshire remained relatively static. Whilst there are multiple factors that influence why people move, the increase in migration did occur in the years following the removal of the Severn Bridge tolls. The increase also coincides with the easing of the COVID-19 pandemic restrictions and the UK-wide stamp duty ‘holiday’ (which ended in June 2021).
- 2.44 The increase in the in-flows and relatively static outflows resulted in growth in the net population gain from each district, averaging +207 per year from Bristol and +202 per year from South Gloucestershire between 2017/18 and 2021/22, compared to an average of +126 and +164 per year in the 5-year period preceding the 2020 base year of the 2021 Edge Analytics study.

- 2.45 The inflow from Bristol between 2017/18 and 2021/22 represented around 7.0% of the total inflow to Monmouthshire, and from Gloucestershire, approximately 5.5%. This corresponds to an annual average inflow of 379 and 298 per year respectively, higher than the long-term averages over the full 2001/02–2024/25 time period.
- 2.46 The migration inflow peaked in 2021/22, at 519 from Bristol and 384 from South Gloucestershire. Importantly, **since then, the inflows and resulting net migration from each district to Monmouthshire have decreased.**

Conclusions

- 2.47 Based on the above analysis, **it is not considered necessary to apply any migration adjustments to the 2022-based WG Principal projection:** the five-year period from which the *WG Principal* projection draws its assumptions captures a higher in-flow from these authorities. Furthermore, the latest evidence suggests the inflows (and net gain) have reduced; in the latest year (2024/25), the out-flow to these authorities has also increased to the highest level seen over the historical time period.
- 2.48 Acknowledging the **highly variable MYE history** in Monmouthshire, in terms of both net internal and international migration, and the recent reductions in both, two up-to-date **migration trend scenarios** have been developed by Edge Analytics in Section 5 for comparison with the 2022-based WG projection.

3 MEMBERSHIP RATES

Introduction

- 3.1 Within the 2021 Edge Analytics study, adjustments to the household ‘membership rates’ were applied in the RLDP scenario to model a higher level of household growth in the young adult age groups.
- 3.2 To establish whether it is appropriate to apply comparable adjustments to the 2022-based WG projections requires a comparison of the 2018-based and 2022-based household projections, and the membership rates that underpin each of these.
- 3.3 In this Section, the WG household projection methodology is summarised, followed by an overview of the 2022-based projections and a comparison with the earlier 2018-based projections. Following this, the underpinning membership rates are presented. A range of data has been considered to help inform the discussion around ‘suppressed’ household formation. The conclusions to this Section summarise the adjustments made to the 2022-based rates within the demographic forecasting presented in Section 5.

WG Household Projections

Methodology

- 3.4 The official Welsh Government household projections provide an indication of number of households and their composition over a 25-year period. The projections are underpinned by the official population projections and household assumptions derived from successive Censuses.
- 3.5 Released in November 2025, the 2022-based Welsh Government local authority household projections provide statistics on the future potential number and type of households that might form between 2022 and 2047. As Welsh Government states, the household projections *“are not forecasts, and do not attempt to predict the impact that future government policies, changing economic circumstances or other factors, such as the number of homes built, may have on the number of households.”* Instead, the projections estimate the households that could form if recent population growth trends were to continue, and households were to continue to form as they did between the Censuses.²⁰
- 3.6 For the 2022-based round of population and household projections, Welsh Government has revised its forecasting methodology, using data from the past three Censuses to generate the household ‘membership rates’, whereas the previous 2018-based projections used only the 2001 and 2011 Censuses.²¹

²⁰ WG (June 2026) [Local authority household projections: 2022-based](#)

²¹ WG 2025 [Chief Statistician’s update: new local authority population and household projections](#)

3.7 As with the population projections, the technical methodology documentation for the household projections is yet to be published. From the information that is available, the 2022-based household projection methodology can be summarised as follows:²⁰

- **Household membership rates** are calculated from historical Census data for each year from mid-2022 to mid-2047. Welsh Government states that a ‘modified two-point exponential model’ was used to produce two sets of membership rates from the 2001 and 2011, and 2011 and 2021 Censuses. A weighted combination of these two sets of rates was then used to generate the final set of membership rates (75% weighting for 2011–2021 and 25% for 2001–2011).
- The **private household population** is estimated by age and sex by subtracting the communal establishment population (e.g. care homes, prisons) from the usually resident population.
- The membership rates are applied to the private household population to estimate the size and structure of the household population. To this, household size assumptions are applied and the results aggregated by age group, sex and household type to give the **projected total number of households**.

3.8 Note that **there is only one set of membership rates** within each round of projections for each local authority in Wales. WG has applied the same membership rate, communal population and average household size assumptions to each of the 2022-based variant population projections to generate the corresponding variant household projections.

3.9 The different household growth outcomes associated with each 2022-based variant are therefore a result of the different levels of population growth in each corresponding scenario (rather than differences in the underpinning membership rates, communal population, and average household size assumptions).

Household Growth Profile

3.10 The 2022-based *Principal* projection results in household growth of 20.3%, equivalent to an additional 8,363 households over the 2022–2047 projection period (Table 5, Figure 11). Over its 25-year projection period, the 2022-based projection results in a *higher* level of household growth compared to the 2018-based projection (2018–2043), as illustrated in Figure 11.

3.11 The differences between the two rounds of projections are a result of the **methodological changes** (i.e. the updated membership rate methodology) and **demographic changes** in the underpinning population projections.

3.12 In the 2018-based *Principal* projection, average household size was projected to be higher than under the 2022-based *Principal* projection, starting at 2.30 in 2018 and reducing to 2.26 by 2043 (Table 5). In comparison, average household size in the 2022-based projections starts at 2.25 in 2022 and reduces to 2.17 by 2027, representing a greater decline in average household size than the previous projection.

Table 5: 25-year growth comparison: *Principal* household projections, Monmouthshire

Principal Projection	Household Growth		Household Population Growth		Average Household Size		
	Change	% Change	Change	% Change	Start	End	Change
2018-based (2018–2043)	3,744	9.3%	6,582	7.1%	2.30	2.26	-0.05
2022-based (2022–2047)	8,363	20.3%	15,171	16.4%	2.25	2.17	-0.07

Source: WG

2022-based Welsh Government Household Projections: Monmouthshire

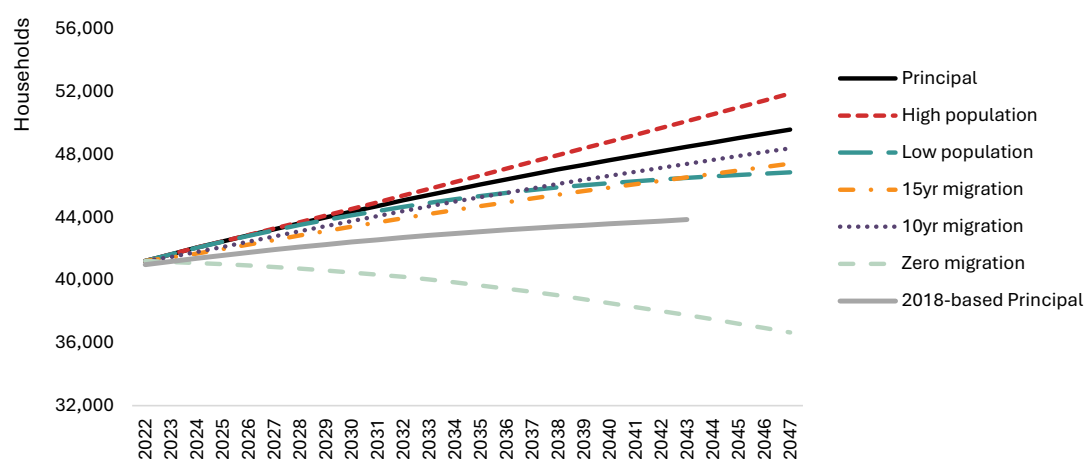


Figure 11: WG 2022-based household projections, Monmouthshire

Source: WG

- 3.13 The result of these differences, combined with the different underpinning population projections, is that the 2022-based *Principal* projection estimates an overall higher growth in the number of smaller households compared to the previous 2018-based projection (Table 6, Figure 12).

Table 6: Household Growth by size comparison: *Principal* projections, Monmouthshire

	2018-based Principal				2022-based Principal			
	2018	2043	Change	% Change	2022	2047	Change	% Change
1 person	11,471	13,374	1,902	17%	12,355	16,108	3,753	30%
2 person	15,387	16,625	1,238	8%	15,943	18,656	2,713	17%
3 person	6,031	6,375	345	6%	6,167	7,544	1,377	22%
4 person	4,977	5,147	170	3%	4,836	5,502	666	14%
5+ person	2,248	2,337	90	4%	1,921	1,774	-146	-8%
Total	40,114	43,859	3,744	9%	41,222	49,584	8,363	20%

Source: WG

Household Growth by Household Size:
2018-based vs. 2022-based Principal projection

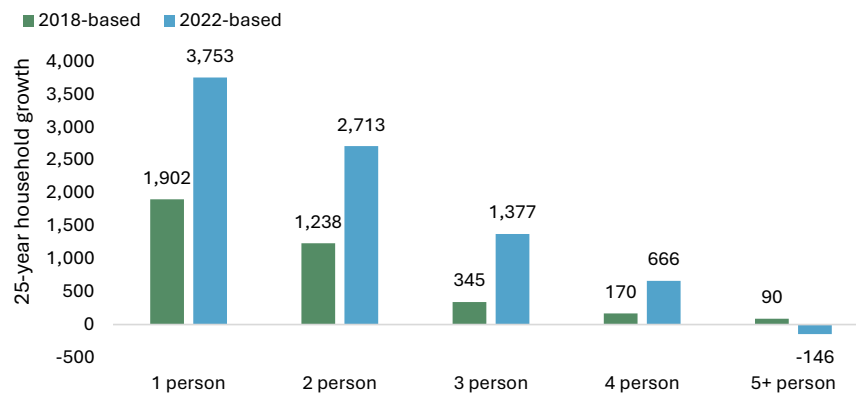


Figure 12: Household growth comparison by household size, Monmouthshire

Source: WG

- 3.14 In 5+ person households a slight decline is projected. The largest growth is in 1-person households, at 30% over the 25-year projection period, compared to 17% under the 2018-based projection.

Membership Rates Comparison

- 3.15 Membership rates are defined by sex and 5-year age groups (ages 0 to 85+). Within each age group, the proportion of the household population that falls into each of the household type (size) categories is defined in each year of the projection period. For each age group, for males and females separately, the proportions sum to 100%. The table below provides an example of this for the 25–29 age group for Monmouthshire from the 2022-based projection.

Table 7: Membership rates for ages 25 to 29 (2022 to 2047), Monmouthshire

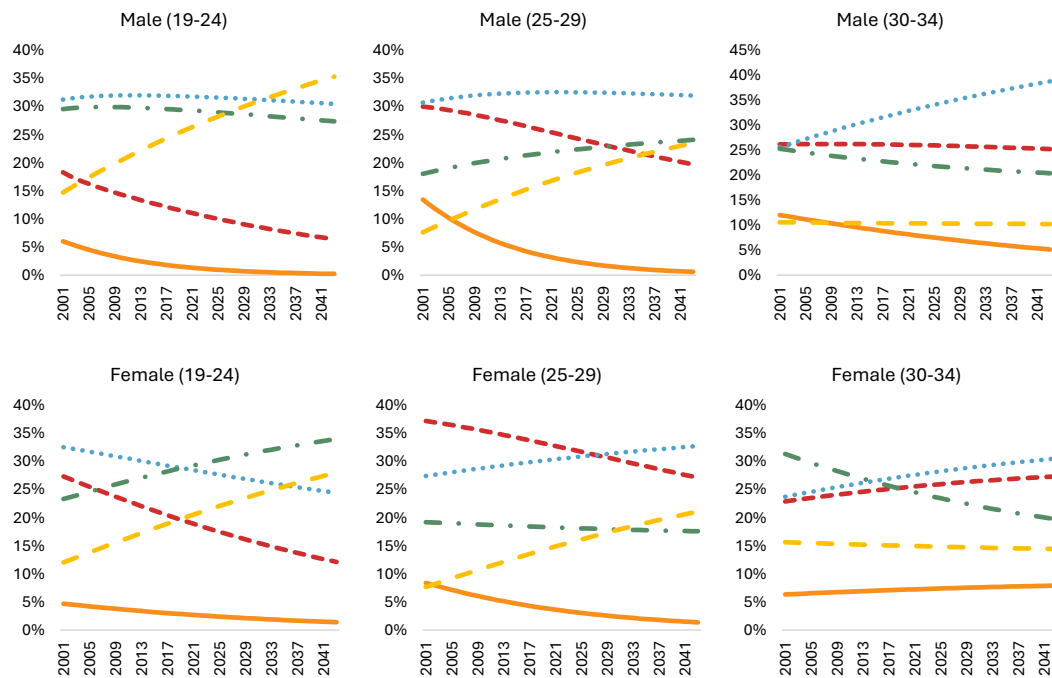
Household Type	Males aged 25–29			Females aged 25–29		
	2022	2047	Change	2022	2047	Change
1 person	6.6%	7.6%	0.9%	6.0%	7.1%	1.1%
2 person (No children)	29.9%	32.6%	2.7%	29.5%	26.9%	-2.7%
2 person (1 adult, 1 child)	0.4%	0.7%	0.3%	5.4%	6.2%	0.8%
3 person (No children)	21.3%	19.6%	-1.7%	14.2%	17.0%	2.8%
3 person (2 adults, 1 child)	9.7%	7.8%	-1.9%	12.0%	9.4%	-2.6%
3 person (1 adult, 2 children)	0.0%	0.0%	0.0%	3.5%	3.7%	0.2%
4 person (No children)	14.6%	18.3%	3.8%	8.6%	13.5%	4.9%
4 person (2+ adults, 1+ children)	5.7%	2.6%	-3.1%	9.0%	5.2%	-3.8%
4 person (1 adult, 3 children)	0.0%	0.1%	0.1%	1.3%	1.1%	-0.2%
5+ person (No children)	5.8%	6.1%	0.3%	3.4%	4.6%	1.2%
5+ person (2+ adults, 1+ children)	6.0%	4.6%	-1.4%	6.9%	5.3%	-1.7%
5+ person (1 adult, 4+ children)	0.0%	0.0%	0.0%	0.2%	0.1%	-0.1%
TOTAL	100%	100%	-	100%	100%	-

Source: WG. Note figures may not sum due to rounding.

- 3.16 In the 2021 Edge Analytics study, the 2018-based household projections provided the membership rate and average household size assumptions for each of the Edge Analytics scenarios.
- 3.17 Within the young adult age groups, the general pattern in the unadjusted 2018-based rates was a **continued decline in the proportion of smaller households** (particularly 1 and 2 person) from a **2001 Census high-point** (Figure 13²²). The proportion of 5+ person households was projected to *increase*, particularly in the 19–29 age groups. These changes reflected the assumptions used by WG at the time and the 2001 and 2011 Census data that informed that round of household projections.
- 3.18 The nature of the membership rates (being defined as proportions of people in each age group falling into each household size) add a level of complexity to identifying what ‘suppression’ looks like: is it a decline or growth in a certain household size? Furthermore, the need for the membership rates within each age group to sum to 100% means that increasing the proportions in one (or more) household size categories inevitably results in decline in the other categories within that age group.
- 3.19 In the *RLDP scenario*, the decision was taken to ‘return’ the 2018-based membership rates in the 19–34 age groups to their 2001 values by 2033, with the rationale being that the decline in the smaller household sizes over time could be indicative of ‘suppression’ (e.g. young adults potentially not able to move out of house shares/family homes into their own homes).
- 3.20 These adjustments resulted in growth in the proportion of smaller households and a reduction in the proportion of larger households in these age groups. When applied in the forecast modelling, the adjusted rates acted to *increase* the number of households formed compared to the original unadjusted 2018-based rates, through an increase in the number of smaller households.
- 3.21 The **2022-based membership rates** for the comparable young adult age groups are presented alongside the 2018-based unadjusted rates in Figure 13 (the full profile of 2022-based membership rates is included within the Appendix to this report). Without the detailed technical methodology from WG, it is difficult to compare the 2018 and 2022 models or provide commentary on the reasons for the differences. It is, however, clear the membership rates are different under the 2022-based projections.
- 3.22 This is particularly evident in the smaller 1-, 2- and 3-person household proportions, which in the younger adult age groups **do not decline at the same rate** as in the 2018-based projections, or remain relatively static over time (Figure 13). The most notable difference is the increase in the proportion of 2-person households in the 25–34 age groups for males and 30–34 group for females. Whilst the proportion of the largest 5+-person households was projected to *increase* in the 2018-based projections, the reverse is true in the 2022-based projections (with the exception of the young adult females where the proportion remains relatively static).

²² Within each age group, the household types are defined as in Table 7 – the rates have been summed across each household size to produce the illustrations in Figure 13.

WG 2018-based Membership Rates, ages 19–34, 2001–2043



WG 2022-based Membership Rates, ages 19–34, 2001–2047

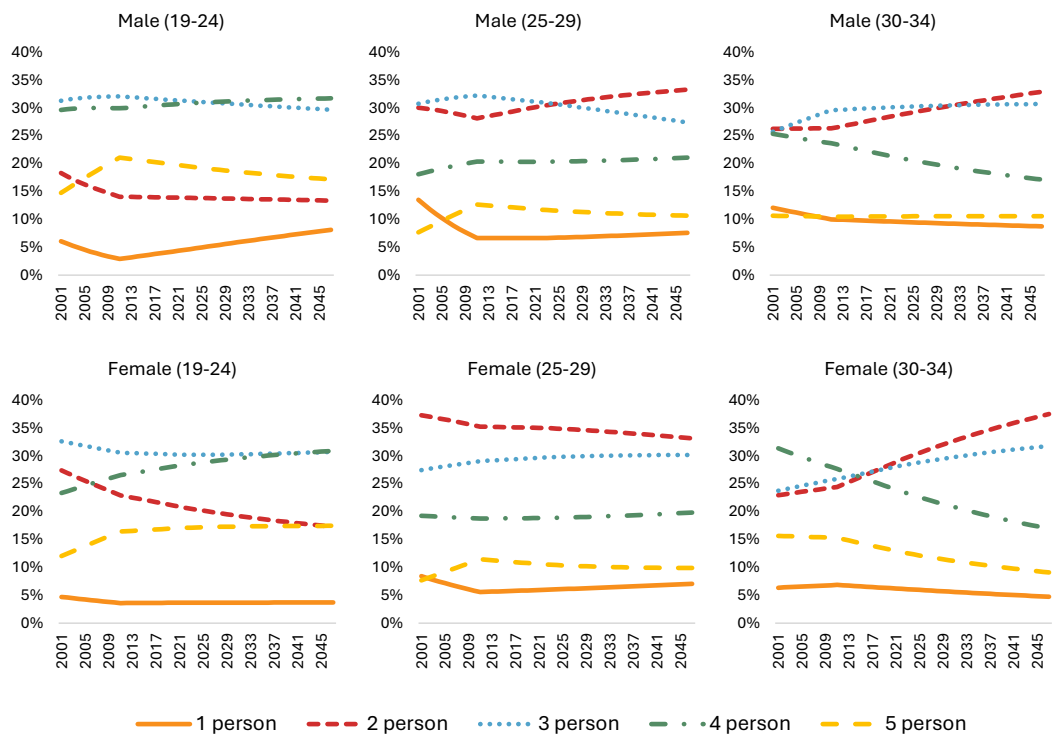


Figure 13: Monmouthshire membership rate comparison, ages 19–34

Source: WG, Edge Analytics. Note that the membership rate history has been modelled by Edge Analytics using Census and official projection data.

Suppressed Household Formation?

- 3.23 The projected changes to the 2018-based and 2022-based membership rates over time reflect the Census data that WG has used to inform their projections. The trend-based nature of the household projections means that if household formation has historically been ‘suppressed’ or ‘constrained’, then this will be carried forwards in the projections.^{23, 24}
- 3.24 If the same rationale that applied to the 2018-based rates were to be applied to the 2022-based rates (i.e. that a decline in the proportion of smaller households is indicative of suppressed household formation), it could be inferred that the ‘suppression’ is perhaps not as pronounced under the 2022-based projections.
- 3.25 However, quantifying the extent to which household formation has been suppressed or identifying what an ‘appropriate’ profile of household occupancy would be for any given area is challenging: there are multiple factors that influence household formation and household occupancy through time and at different life stages.
- 3.26 For example, the reduced decline in the proportions of smaller households in the 2022-based membership rates may reflect improvements in household formation (e.g. young adults moving out of the family homes into their own households), or conversely, declining fertility rates and people starting families later (or a combination of the two across different age groups and in different areas).
- 3.27 A metric often used as an indicator of suppressed household formation is an increase in the **average household size**, or average household sizes that remain relatively static.²⁵ In Monmouthshire, however, Census statistics suggest that the average household size has *decreased* since 2001 from 2.37. A similar figure was estimated in 2011 (2.35). By 2021, this had reduced to 2.24, lower than the regional or national averages (Figure 14).

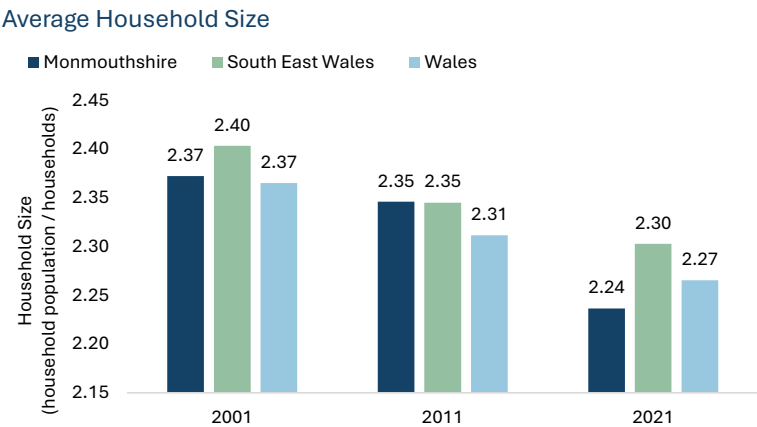


Figure 14: Census average household size
Source: ONS

²³ University of Liverpool Centre for Sustainable and Resilient Cities (2018) [Evaluating the validity of population and household projections](#)
²⁴ Welsh Government (2025) [Estimates of additional housing need \(2025-based\): quality report](#)
²⁵ Lichfields (2022) [Making sense\(sus\) of it](#), Savills (2022) [Census 2021: Households and Projections](#)

- 3.28
- This aligns with national trends and the expectation that with **population ageing** and declining fertility rates, a reduction in average household size results (as the older age groups tend to occupy smaller 1- or 2-person households and lower fertility rates result in smaller families). This is carried forwards in the 2022-based household projections, which project lower average household sizes compared to the 2018-based projections and show a continued reduction in average household size over time (as illustrated above in Table 5).
- 3.29
- Another frequently-cited indicator of suppressed household formation is an *increase* in **concealment and overcrowding**. The absolute number and proportion of concealed families (which are defined as a secondary family unit living within a multi-family household), have increased since 2001 in Monmouthshire and nationally (Figure 15). At UK level, the proportion of young adults living with parents has also increased; in 2025, 7.2 million adults aged 15 to 34 lived with their parents compared to 6.6 million in 2015. This represents an increase from 39.7% of young adults to 42.4% and reflects *“a trend of adults reaching milestones later in life”*.²⁶
- 3.30
- Overcrowding (where a household has fewer bedrooms than required) has, conversely, *decreased* since the 2011 Census, in line with national trends. This decline is likely, again, linked to the ageing of the population and a continued decline in fertility rates and associated reduction in average household size.

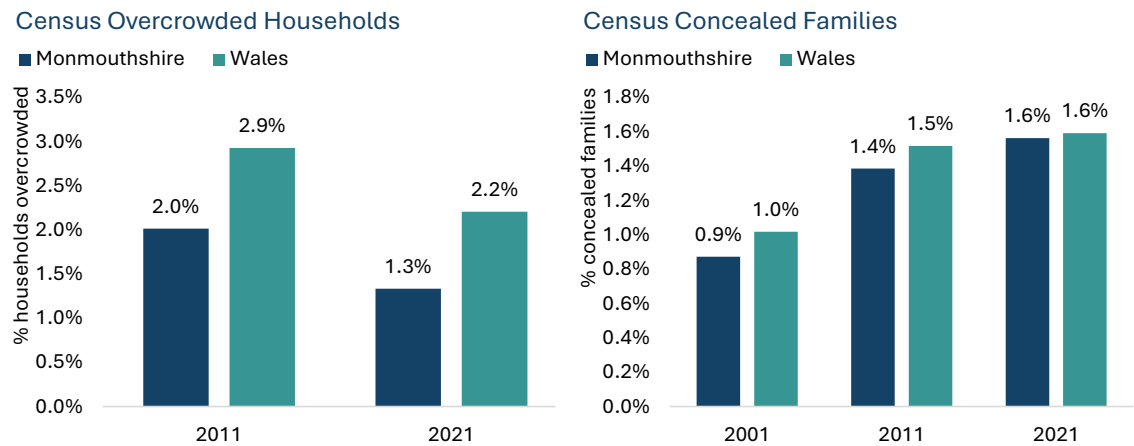


Figure 15: Census concealed families and overcrowded households

Source: ONS, 2011 Census Tables LC4108EW, 2021 Census Custom Table Builder. Note that it is not possible to produce comparable overcrowding statistics for the 2001 Census due to the way in which occupancy was measured.

- 3.31
- Although rates of overcrowding have decreased, when viewed by age, overcrowding remains highest in the younger adult age groups than in the older ages (Table 8). In Monmouthshire, 4.1% of the household population aged 25–34 was overcrowded at the 2021 Census, compared to 0.6% for ages 65+ (Table 8).
- 3.32
- The increase in rates of concealment over time and the generally higher rates of overcrowding in young adult households have occurred over a period of time that has seen worsening housing affordability and increased financial pressures, particularly on young adult households.

²⁶ ONS (2026) [Families and households in the UK: 2025](#)

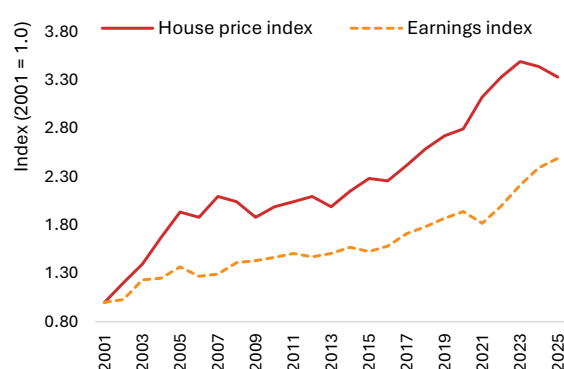
Table 8: 2021 Census overcrowding by age, Monmouthshire

Age Group	% of Household Population Overcrowded
15-24	5.6%
25-34	4.1%
35-44	2.9%
45-54	2.2%
55-64	1.1%
65+	0.6%

Source: ONS Census 2021 Custom Table Builder

- 3.33 In Monmouthshire, as with elsewhere in the UK, house price growth has outpaced the growth in earnings, leading to an increase in the affordability ratios (i.e. worsening affordability) (Figure 16). A decline in the proportion of owner-occupied households has also been seen between 2011 and 2021 in Monmouthshire (from 74% to 72%), whereas the proportion of private rented households has increased (from 12% to 14%). Although this data is not available for Wales, the age at which people buy their first home has increased to 34 in England, up from under 30 twenty years ago (English Housing Survey).

House Price vs. Workplace-based earnings index, Monmouthshire 2001–2025



Ratio of median house price to median gross annual workplace-based earnings, 2001–2025

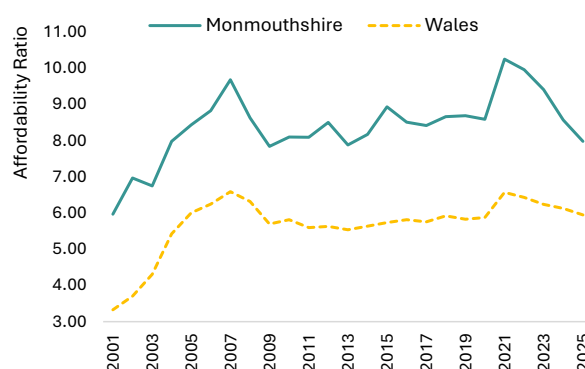


Figure 16: Monmouthshire housing affordability, 2001–2025

Source: ONS

Conclusions

- 3.34 Although it is not possible to quantify whether (and to what extent) the changes in the membership rates over time are indicative of suppressed household formation, the trend-based nature of the household projections would suggest that if suppression has occurred historically, this will be carried forwards in the WG projections.
- 3.35 Overall, the 2022-based household projection for Monmouthshire results in *higher* levels of household growth compared to the previous 2018-based projection. The profile of growth by household size is also different: the 2022-based projection results in overall higher growth in 1–4-person households compared to the 2018-based projection, but a decline in 5+-person households.

- 3.36 These differences are a result of demographic changes (including the considerably higher levels of population growth projected under the 2022-based projection) and changes to the household modelling methodology used by Welsh Government (the technical detail on which has yet to be released). A key change for this round of projections was the inclusion of data from the past three Censuses (2001, 2011 and 2021).
- 3.37 In the young adult age groups in the 2022-based membership rates, the proportions of 1-, 2- and 3-person households do not decline at the same rate as seen in the 2018-based projections, or they remain relatively static over time. Whilst this may to some extent indicate reduced ‘suppression’ (compared to the 2018-based projections), the differences are also likely driven by demographic changes such as declining fertility rates and smaller family sizes.
- 3.38 The range of data presented above highlights an increase in concealment since 2001, higher rates of overcrowding in young adult age groups compared to the older age groups, and worsening affordability.
- 3.39 Acknowledging this, and the continued (albeit reduced) decline in the proportions of smaller households in the 2022-based membership rates, it is considered entirely reasonable to apply adjustments to the 2022-based WG projections to model an increase in household growth.
- 3.40 However, unlike in the 2018-based rates, the rates in the 2022-based projection end year (2047) are not consistently lower than the respective 2001 values for each age/household group. This means that the same ‘return’ approach that was applied to the 2018-based rates is not appropriate for the 2022-based rates; in fact, the application of the same approach results in a *decline* in the number of households.
- 3.41 A number of alternatives have therefore been tested, each modelling an increase in the proportion of smaller households in the young adult age groups. In each test case, the end-year (2047) rate to ‘return’ to from the 2022 base year was derived from the maximum rate in that household category and age group over the full 2001 to 2047 time period. Adjustments were tested in different household sizes (e.g. only 1- and 2-person) and different age groups. All of the adjustments tested result in only modest increases in the levels of household growth compared to applying the unadjusted 2022-based rates.
- 3.42 The **final set of adjusted 2022-based membership rates** ‘return’ the proportions of 1-, 2-, and 3-person households to their respective highest points seen between 2001 and 2047. For 4- and 5+-person households, the residual proportion of growth in the end year (2047) has been distributed based on the original distribution in 2047.
- 3.43 Returning the rates by the end year of the projection period (and not the end year of the council’s plan period) aligns with the approach taken by Edge Analytics in membership rate ‘returns’ in other Welsh local authority studies, and with the household ‘headship rate return’ methodology applied in England. This results in consistency between areas (rather than rate adjustments applying across different time periods depending on the plan period).
- 3.44 Adjustments have been applied in the 19–39 age groups. Note that this extends the adjustments into one additional age group compared to the 2018-based adjustments (which applied in the 19–34 age group). The rates in the other age groups remain unadjusted. The decision to include

the 34–39 age acknowledges that the age at which people typically buy their first home has increased, as have the ages at which men and women have their first child.²⁷

3.45 In Section 5, the impact of these adjusted 2022-based membership rates has been evaluated.

²⁷ ONS (2026) [Fertility for those born in different years, England and Wales: 2024](#)

4 COMMUTING

Introduction

- 4.1 Within the 2021 Edge Analytics study, a **gradually reducing net out-commute** from Monmouthshire was modelled, reducing the proportion of the resident labour force that commuted out of Monmouthshire for work.
- 4.2 To determine whether the commuting ratio adjustments applied in the RLDP scenario should be applied to the 2022-based WG projections, the latest available labour force statistics for Monmouthshire have been collated. This includes the latest **economic activity rates** and available statistics on **commuting patterns**.

Modelling Methodology

- 4.3 The WG projections only provide population estimates (including births, deaths and migration) and household outputs (by sex and household size): **there are no official labour force or employment statistics associated with the official projections**. Therefore, Edge Analytics uses its in-house forecasting models (VICUS)²⁸ to model the size and structure of the labour force implied by the official projections, and by extension, the level of employment growth that can be supported in an area.
- 4.4 The size and structure of the **labour force**, as well as the level of **employment** that can be supported in an area, are derived from a population growth trajectory using three key assumptions: economic activity rates, an unemployment rate, and a commuting ratio (Figure 17).



Figure 17: Deriving labour force and employment outcomes

- 4.5 **Economic activity rates** are defined by age and sex. These are applied to the population to derive the size and structure of the labour force (i.e. the ‘economically active’ population). The labour force includes both those that are employed and those that are unemployed. The application of the **unemployment rate** therefore determines the number of unemployed people (and by extension, employed people).
- 4.6 The **commuting ratio** is applied to the employed people to calculate **employment** in the area. With a net in-commute, the level of employment in the area exceeds the number of employed

²⁸ Note that VICUS utilises the same population cohort component and ‘derived forecast’ methodology as the POPGROUP model previously used by Edge Analytics to develop demographic scenarios for Monmouthshire.

people. With a net out-commute the reverse is true: the number of employed people exceeds the level of employment. A commuting ratio under 1.0 implies a net in-commute whereas a ratio over 1.0 implies a net out-commute. Note that adjustments to the commuting ratio only impact the level of employment that could be supported in an area.

RLDP Scenario Assumptions

4.7 Within the Edge Analytics 2021 study, the following labour force assumptions were applied:

- **Economic activity rates:** Rates by five-year age group and sex were derived from 2011 Census data and were adjusted by Edge Analytics to reflect future changes to the State Pension age, drawing on the Office for Budget Responsibility's (OBR) labour market trend analysis in its 2018 Fiscal Sustainability Report.²⁹
- The **unemployment rate** was calculated from ONS model-based estimates³⁰, set at 2.6% throughout the plan period.
- The **commuting ratio** was derived from 2011 Census 'origin-destination' data, which recorded 43,210 resident workers and 38,458 people in employment in Monmouthshire.³¹ This produced a commuting ratio of 1.12 (resident workers/employment), illustrating a net out-commute.

4.8 In the *RDLP scenario*, the commuting ratio was adjusted to model a reduction in the net out-commute over time. The ratio was incrementally reduced from the 2011 Census figure of 1.12 to the 2001 Census figure of 1.10 by the end of the plan period (2033), representing a relatively modest reduction to a relatively high net out-commute.

4.9 This resulted in a higher level of employment growth compared to that derived with a fixed commuting ratio. No additional adjustments (above those outlined above) were applied to economic activity rates or the unemployment rate.

Data Updates

4.10 The above assumptions represented Edge Analytics' standard labour force assumptions at the time the study was undertaken. Since the 2021 study was completed, the following data has become available:

- 2021 Census economic activity rates, superseding the 2011 rates,
- 2025 OBR labour force participation survey³², providing updated state pension age adjustments,
- Continued data releases of the ONS mode-based unemployment estimates,
- 2021 Census commuting origin-destination flow data³³.

²⁹ OBR (2018) [Fiscal sustainability report – July 2018](#)

³⁰ ONS via Nomis, [model-based estimates of unemployment](#)

³¹ 2011 Census Table WU02UK

³² OBR [Forecasting participation trends: the cohort model](#)

³³ 2021 Census Table ODWP01EW_LTLA

Unemployment

4.11 Regarding **unemployment**, the latest model-based estimates from ONS suggest that the current unemployment rate in Monmouthshire (2.8%) is only slightly higher than the figure applied in the 2021 Edge Analytics study (2.6%). On this basis, and for methodological consistency, **the model-based estimates of unemployment** have continued to be used in the demographic forecasting presented in Section 5, updated to include the estimates up to 2025, as summarised on the chart below.

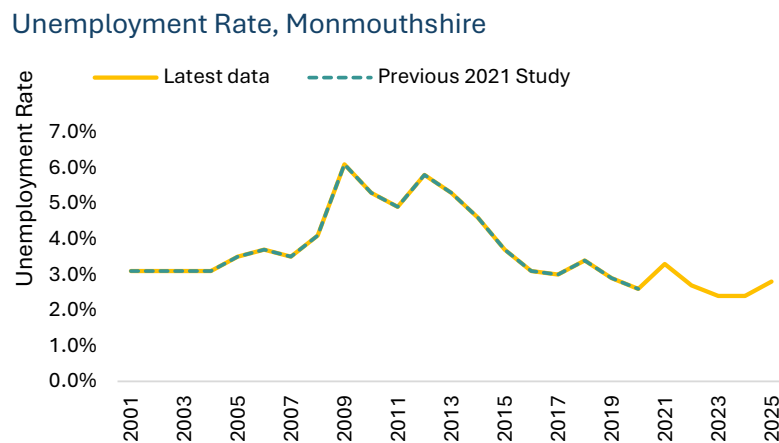


Figure 18: Model-based estimates of unemployment

Source: ONS APS

Economic Activity Rates

4.12 The 2021 Census **economic activity rates** are compared to the 2011 rates in Figure 19. For both males and females, the 2021 rates are *higher* in the 60–69 age groups, and *lower* in the youngest (16–24 age groups).

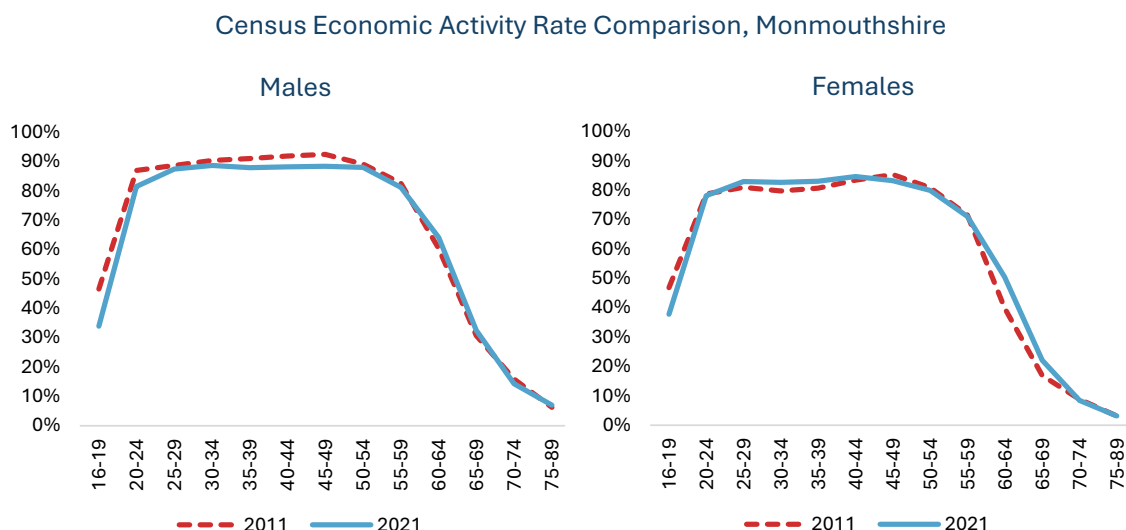


Figure 19: Census economic activity rate comparison

Source: ONS

- 4.13 Whilst the changes to the economic activity rates will reflect longer-term changes to labour force participation (e.g. such as those brought about by changing retirement patterns and the state pension age³⁴), ONS highlights that some statistics from the 2021 Census were influenced by the timing of the Census during the COVID-19 pandemic are therefore “*not typical of the population during a non-pandemic time*”.³⁵ This includes, amongst other things, economic activity status and travel to work statistics (the latter of which are used to calculate the commuting ratios – see below).
- 4.14 There is some evidence to suggest that the way that people responded to the 2021 Census questions around labour force participation may have been impacted by furlough, which was introduced in March 2020 and ended in September 2021. ONS highlights that the Census economic activity statistics *do* include those who were furloughed³⁶ (although some inconsistencies between the number of people who identified as ‘temporarily away from work’ in Census 2021 and other administrative data sources were found³⁷).
- 4.15 More recent data from the Annual Population Survey (APS) suggests that the latest (2026) overall economic activity rate for Wales (59.9%) is comparable to that estimated in 2021 (59.8%); both are lower than the corresponding 2011 rate (60.1%).³⁸ Note that comparable APS data is available at local-authority level but is more prone to variability due to the sample-based nature of the data.
- 4.16 On balance, it is now considered **preferable to use the 2021 Census rates within demographic forecasting** due to the state pension ages that have already occurred as well as the post-Census continuation of lower levels of economic activity, particularly in the younger ages.^{39,40} Within the demographic forecasting presented in Section 5, this updated profile has been applied, with changes to account for future state pension age changes (in line with the latest 2025 OBR analysis).

Commuting

- 4.17 The latest available commuting ratio evidence for Monmouthshire from the Census and the APS is summarised in Table 8.
- 4.18 The Census data suggests that the number of **total resident workers** (which includes those living and working in Monmouthshire, in another local authority, at home or no fixed place, and offshore/outside the UK) increased from 38,300 in 2001 to over 43,200 by 2011. At the 2021 Census, this figure was slightly reduced, at approximately 42,800. Over the same time period, the level of people-based employment in Monmouthshire has increased from 34,600 to 42,400.
- 4.19 This data implies that the commuting ratio increased between 2001 and 2011 (i.e. an increased net out-commute) but reduced between 2011 and 2021 (i.e. a reduced net out-commute). As with the labour participation questions at the 2021 Census, ONS highlights that furlough and

³⁴ House of Commons Library (2023) [State Pension age review](#)

³⁵ ONS [Impact of the coronavirus \(COVID-19\) pandemic on England and Wales Census 2021 outputs](#)

³⁶ ONS (2022) [Economic activity status, England and Wales: Census 2021](#)

³⁷ ONS (2023) [Labour market quality information for Census 2021](#)

³⁸ ONS LFS via NOMIS [APS and LFS](#)

³⁹ DWP (2026) [Young people and work: interim report](#)

⁴⁰ ONS (2026) [Young people not in education, employment or training \(NEET\), UK: August 2026](#)

home working may have influenced how people responded to the relevant Census questions.

- 4.20 APS data for the latest year (2025) suggests that the commuting balance is now under 1.0 in Monmouthshire (at 0.98), indicating a net *in*-commute. However, the APS data is sample based and shows a high level of variability over time, as well as being quite different to the Census estimates (Figure 20). Taking a 5-year average provides a commuting ratio of 1.03, slightly higher than the 2021 Census estimate but considerably lower than the previous Census figures.

Table 9: Commuting ratio comparison, Monmouthshire

	2001 Census	2011 Census	2021 Census	APS (2025)	APS (5-year average)
Total resident workers	38,300	43,210	42,841	43,400	44,060
Total employment	34,682	38,458	42,400	44,400	42,680
Implied commuting balance	1.10	1.12	1.01	0.98	1.03

Source: 2001, 2011, 2021 Census (ONS), APS (ONS via Nomis)

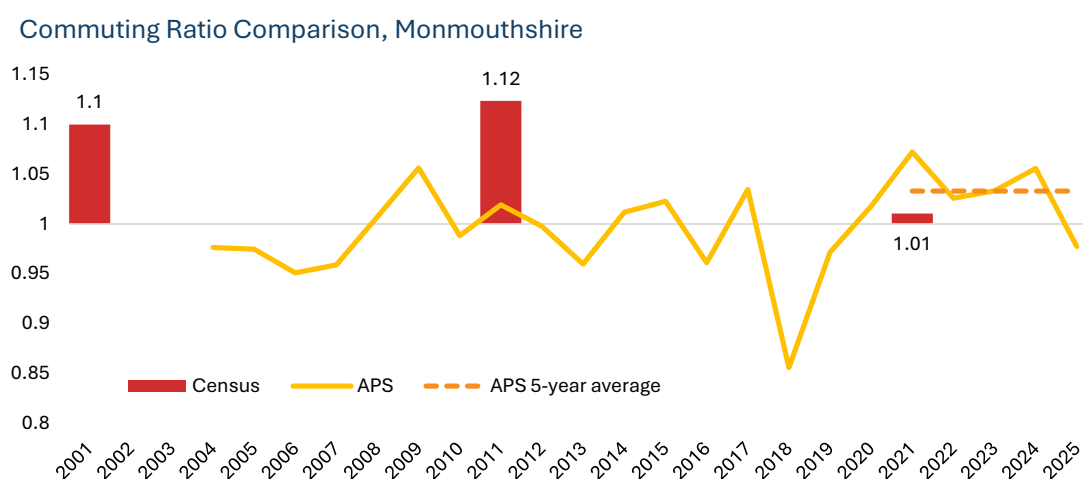


Figure 20: Commuting ratio comparison, Monmouthshire

Source: ONS, APS. Note that the APS data does not cover 2001-2003

Conclusions

- 4.21 Acknowledging the uncertainty around the latest commuting statistics, **two alternative commuting profiles** have been applied in the demographic forecasting presented in Section 5:

- **CR_R**: replicates the approach taken in the 2021 Edge Analytics study, reducing from the 2011 Census commuting ratio (1.12) in 2020 to the 2001 estimate (1.10) by 2033.
- **CR_R_adjusted**: updates the commuting assumptions to model a decreasing net out-commute over time, reducing from the 2011 Census figure of 1.12 to the APS 5-year average (1.03) by 2033. This is a slightly more moderated approach than using (or returning) to the 2021 Census figure of 1.01.

- 4.22 This approach produces a 'higher' and 'lower' employment growth outcome for each of the scenarios presented in Section 5.

5 DEMOGRAPHIC FORECASTING

Introduction

- 5.1 In this section, **the impacts of the identified membership rate and commuting ratio adjustments on the 2022-based WG *Principal* projection** are evaluated and the scenario outputs compared to the *RLDP scenario* from the 2021 Edge Analytics study. Owing to the range of data now available, and the reliance of the 2022-based WG projections on a historical period of relatively higher growth, two **up-to-date trend scenarios** have also been included, based on a short-term and longer-term migration history.

Scenario Adjustments

- 5.2 The analysis presented in the previous Sections evaluated whether it is appropriate to apply the **migration, membership rate, and commuting** adjustments that apply in the *RLDP scenario* to the 2022-based WG projections.

- 5.3 This analysis has concluded the following:

- **Migration** – The 2022-based WG *Principal* projection captures the higher flows seen post-2018 and the latest evidence (2022–2025) suggests the flows have begun to decrease from the peak in 2021/22. Therefore, **no adjustments** are required to model an increase in the inflow from Bristol and South Gloucestershire. Nor is it necessary to apply adjustments within any updated trend scenarios that rely on this data.
- **Membership Rates** – the WG update to the membership rate methodology to include 2021 Census data (as well as previous 2001 and 2011 Census data) has produced a different household growth profile compared to the 2018-based projections, with *higher* levels of household growth and a decline in the very largest households. When viewed by age, the decline seen in the proportions of smaller households in the 2018-based rates is not as pronounced in the 2022-based rates.

Establishing whether these differences are indicative of suppressed household formation is challenging. The changes in household occupancy, home ownership and housing affordability that have been seen between the Censuses illustrate the continued challenges faced by households. Adjustments to the 2022-based rates are therefore not considered unreasonable.

An **adjusted set of 2022-based membership rates** has therefore been generated (*MR-22_adjusted*), in which the proportions of 1-, 2- and 3-person households have been increased in the young adult age group, resulting in higher levels of household growth. These have been applied to the demographic scenarios presented in this section, together with the unadjusted original 2022-based rates (*MR-22*).

- **Commuting** – the latest statistics have shown a high level of variety in the different commuting estimates, linked (in parts) to the timing of the 2021 Census during the COVID-19 pandemic and the sample-based nature of the APS.

Two alternative profiles of reduced net out-commuting have therefore been applied, the first aligned with the 2021 Edge Analytics study and the RLDP scenario (*CR_R*), and the second modelling a greater reduction in the net out-commute (*CR_R_adjusted*).

Scenario Definitions

- 5.4 The range of **population growth scenarios** presented in this section are summarised in Table 10. Scenarios have been developed using Edge Analytics **VICUS** forecasting technology, which uses the same projection methodology as the previous POPGROUP model. Detail in the VICUS methodology and scenario inputs and assumptions can be found in Appendix A.

Table 10: Scenario Definition

Scenario	Description
<i>WG-2018</i>	Replicates the WG 2018-based <i>Principal</i> projection from the 2021 Edge Analytics study (2018 base year).
<i>WG-2022</i>	Replicates the WG 2022-based <i>Principal</i> projection (2022 base year).
<i>RLDP Scenario</i>	Replicates the <i>PG Long Term Adj (5yr) (MR, CR_R)</i> from the 2021 Edge Analytics study. No changes have been made to this scenario.
<i>Trend-5yr</i>	Migration assumptions calibrated from a 5-year historical period (2020/21–2024/25), including the UPC adjustment in the international migration component of the MYE (2001/02–2020/21). Scenario has a base year of 2025. Fertility and mortality assumptions derived from the last 5 years of MYE evidence, with long-term changes drawn from the 2022-based WG <i>Principal</i> projection for Monmouthshire.
<i>Trend-15yr</i>	Migration assumptions calibrated from a 15-year historical period (2010/11–2024/25), including the UPC adjustment in the international migration component of the MYE (2001/02–2020/21). Scenario has a base year of 2025. Fertility and mortality assumptions derived from the last 5 years of MYE evidence, with long-term changes drawn from the 2022-based WG <i>Principal</i> projection for Monmouthshire.

- 5.10 The *WG-2022* scenario replicates the 2022-based WG *Principal* projection from 2022 onwards, with the relevant MYE history included from 2018 to 2022.
- 5.11 The *WG-2018* scenario replicates the earlier 2018-based *Principal* projection, which provided the official benchmark in the 2021 Edge Analytics study. This scenario retains its assumptions from the 2021 Study.

- 5.12 The RLDP scenario replicates the *PG Long Term Adj (5yr) (MR, CR_R) scenario* from the 2021 Edge Analytics study (with no changes to the underpinning assumptions).
- 5.13 Using the latest MYE statistics to mid-year 2025, two alternative trend scenarios have also been developed, using short-term (*Trend-5yr*) and longer-term (*Trend-15yr*) migration trends, respectively.
- 5.14 The justification for producing the *Trend* scenarios is: (i) the availability of the rebased and post-Census MYE up to mid-year 2025, providing three more years of MYE evidence compared to the WG projections, (ii) the reliance of the 2022-based WG projections on a period of relatively high growth, which was driven by higher net migration, the levels of which have reduced in recent years, (iii) the (assumed) exclusion of the UPC adjustment in the historical MYE by WG in its 2022-based projections. Edge Analytics has included the UPC adjustment in the international migration history when generating the *Trend* scenarios.
- 5.15 In all scenarios, household growth has been modelled through the application of membership rates and average household size assumptions from the WG projections. Dwelling growth has been estimated through the application of the 2011 Census dwelling 'vacancy rate' (4.5%). Scenarios use the following identifiers to indicate which membership rates have been applied:
- **MR-18:** 2018-based membership rates
 - **MR-18_adjusted:** 2018-based membership rates with adjustments in ages 19–34 (drawn from the 2021 Edge Analytics study)
 - **MR-22:** 2022-based membership rates
 - **MR-22_adjusted:** 2022-based membership rates with adjustments in ages 19–39, as detailed in Section 3.
- 5.16 In all scenarios, labour force growth has been modelled through the application of economic activity rates (the *WG-2022* and *Trend* scenarios use the 2021-based economic activity rates, the *RLDP scenario* and *WG-2018* use the previous 2011-based rates). Employment growth outcomes have been derived using an unemployment rate and a commuting ratio. Scenarios use the following identifiers to indicate which commuting ratio profile has been applied:
- **CR_R:** replicates the approach taken in the 2021 Edge Analytics study, reducing from the 2011 Census commuting ratio (1.12) in 2020 to the 2001 estimate (1.10) by 2033.
 - **CR_R_adjusted:** updates the commuting assumptions to model a decreasing net out-commute over time, reducing from the 2011 Census figure of 1.12 to the APS 5-year average (1.03) by 2033. This is a slightly more moderated approach than using (or returning) to the 2021 Census figure of 1.01.

Scenario Outcomes

Population

- 5.17 The trend-based nature of the scenarios presented here means that adjustments to the household membership rates and/or the commuting ratio do not impact the population growth outcome for each scenario (nor do they impact the size and structure of the labour force⁴¹ that is produced) – see Figure 1 in the Introduction to this report for how the trend scenario functions.
- 5.18 The population growth outcomes for each scenario are summarised below in Figure 20 and Table 11. Note that due to the MYE rebasing, the *RLDP scenario* and *WG-2018* scenario have a different starting point to the *WG-2022* and the Edge Analytics *Trend* scenarios.

Population 2001–2033, Monmouthshire

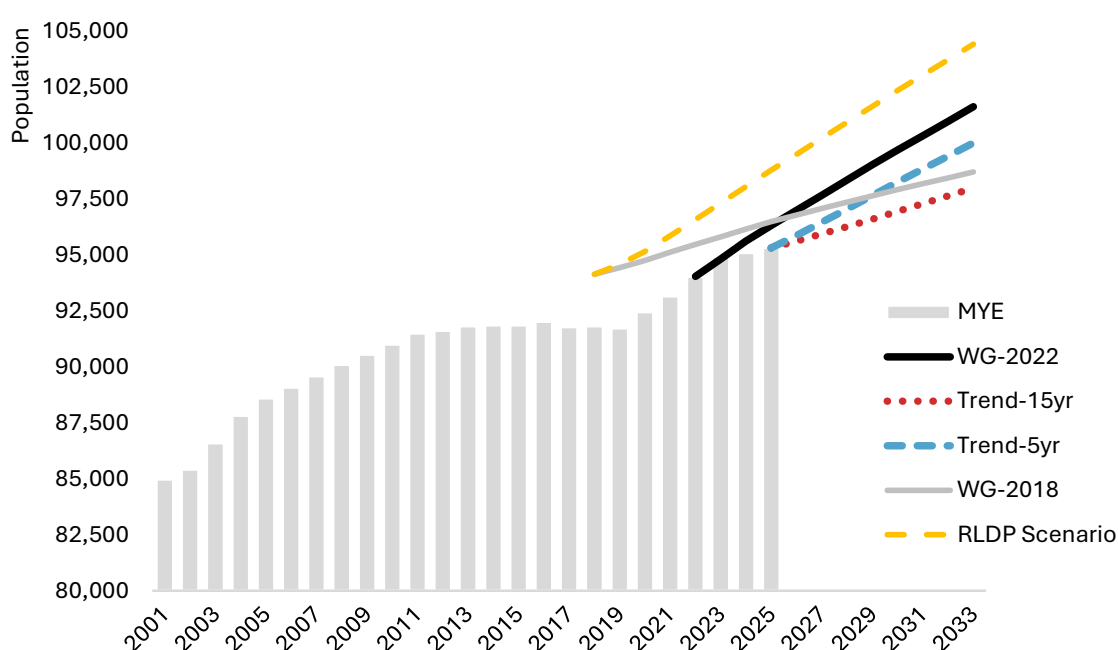


Figure 21: Scenario population growth comparison

Source: ONS, WG, Edge Analytics.

- 5.19 Population growth is highest under the *RLDP scenario*, at 10.9% (2018–2033). This is slightly higher than the *WG-2022* scenario, which results in population growth of 10.7%. Both scenarios are driven by relatively higher migration assumptions compared to the two alternative *Trend* scenarios, which result in *lower* population growth, ranging from 6.7% to 8.9%.
- 5.20 The lower growth outcomes of the *Trend* scenarios are a result of the updated MYE history from which the assumptions are derived, as well as the inclusion of the UPC adjustment within the historical international migration estimates (which is not accounted for in the 2022-based WG projections). The short-term *Trend-5yr* population growth outcome is slightly lower than the *WG-2022* scenario, which carries forwards the higher levels of migration in the years preceding 2022.

⁴¹ Note that the economic activity rates have been updated to account for the 2021 Census, as summarised in Section 4. In the 2021 Edge Analytics study, the 2011 Census rates were applied (with OBR adjustments).

As summarised in Section 2, the post-2022 MYE suggest that net migration to Monmouthshire has reduced from the 2020/21 high point.

- 5.21 The longer-term *Trend-15yr* scenario results in a lower growth rate, as the more muted population growth prior to 2020 has moderated the higher growth rates seen in more recent years.

Table 11: Scenario population growth outcomes, 2018–2033

Scenario	Change 2018–2033		Average Annual 2018–2033			
	Population Growth	Population % Growth	Net Internal Migration	Net International Migration	Net Migration	Natural Change
<i>RLDP Scenario</i>	10,285	10.9%	921	147	1,068	-382
<i>WG-2022</i>	9,801	10.7%	1,055	53	1,108	-406
<i>Trend-5yr</i>	8,185	8.9%	924	55	979	-433
<i>Trend-15yr</i>	6,162	6.7%	923	-68	855	-444
<i>WG-2018</i>	4,584	4.9%	651	76	726	-421

Source: ONS, WG, Edge Analytics. Scenarios are ranked in order of population change. Note that the population outcome of the *WG-2022* scenario is different to that presented by MCC in its [review of the 2022-based projections](#). This is due to the 2018 'previous' MYE (94,142) being used as the base year for calculating change in the MCC report. In the table above, Edge Analytics has calculated change from the latest (rebased) 2018 MYE of 91,384.

Household & Dwelling Growth

- 5.27 Two alternative membership rate profiles have been applied to the *WG-2022* and *Trend* scenarios, producing variant household and dwelling growth outcomes for each population growth trajectory. The unadjusted 2022-based rates (*MR-22*) have been applied, together with the adjusted 'improved' 2022-based rates (*MR-22_adjusted*). The *WG-2018* and *RLDP Scenario* outcomes from the 2021 study are included for comparison. A consistent dwelling vacancy rate has been applied across all scenarios (aligned with the 2021 study at 4.5%).
- 5.28 With modest improvements to the 2022-based membership rates, **a higher level of household growth results** (Table 12), in turn resulting in higher dwelling growth outcomes.
- 5.29 Despite the *WG-2022* scenario producing a *lower* level of population growth compared to the *RLDP scenario*, *higher* levels of household growth result. This is caused by the different population profiles in each scenario and the alternative household growth assumptions applied (2018-based vs. 2022-based membership rates).
- 5.30 Under the *WG-2022* scenario, the average annual dwelling growth outcome using the unadjusted 2022-based membership rates (*MR-22*) is **398** per year, slightly higher than the *RLDP scenario* dwelling growth outcome of **387** per year. With adjustments to the membership rates, the *WG-2022* dwelling growth outcome is boosted to **411** per year as a higher level of household growth results from the 'improved' rates.
- 5.31 With lower levels of population growth, the alternative *Trend* scenarios both result in dwelling growth outcomes below the *WG-2022* scenario and the *RLDP scenario*.

Table 12: Scenario household and dwelling growth outcomes, 2018–2033

	Change 2018–2033		Average Annual Dwelling Growth 2018–2033
	Household Growth	Household Growth %	
<i>WG-2022 (MR-22_adjusted)</i>	5,880	14.8%	411
<i>WG-2022 (MR-22)</i>	5,696	14.3%	398
<i>RLDP Scenario (MR-18_adjusted)</i>	5,548	13.8%	387
<i>Trend-5yr (MR-22_adjusted)</i>	5,167	13.0%	361
<i>Trend-5yr (MR-22)</i>	4,992	12.6%	349
<i>Trend-15yr (MR-22_adjusted)</i>	4,359	11.0%	304
<i>Trend-15yr (MR-22)</i>	4,191	10.5%	293
<i>WG-2018 (MR-18)</i>	2,732	6.8%	191

Source: ONS, WG, Edge Analytics. Scenarios are ranked in order of household growth. Note that the RLDP scenario uses the 2018-based adjusted membership rates from the 2021 study and the WG-2018 the 2018-based (unadjusted) rates.

- 5.32 The difference in the household/dwelling outcomes produced by the 2022-based adjusted and unadjusted membership rates is not as pronounced as in the difference between the 2018-based adjusted and unadjusted membership rates used in the previous study. This is a result of the more pronounced decline that was seen in the 2018-based unadjusted membership rates in the young adult age groups compared to the 2022-based rates (as summarised in Section 4, Figure 13). This is illustrated in Figure 22 for the *RLDP scenario* and the *WG-2022* scenario.

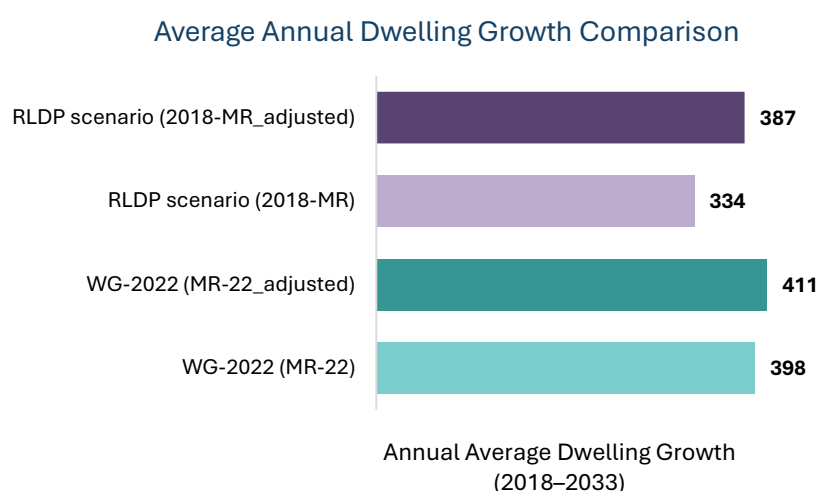


Figure 22: Dwelling growth comparison: RLDP Scenario vs. WG-2022, adjusted and unadjusted membership rates

Source: ONS, WG, Edge Analytics.

Labour Force & Employment Growth

- 5.33 The labour force implications of each scenario's population trajectory have been derived using Census-based economic activity rates. The *WG-2022* and *Trend* scenarios utilise the **2021 Census** economic activity rates (with OBR adjustments to account for changes to the State

Pension Age). The scenarios from the 2021 study (*RLDP scenario* and *WG-2018*) have the **2011 Census** rates applied (with OBR adjustments). As outlined in Section 4, the 2021 rates are considered preferable due to the state pension age changes that have already occurred, and the continued lower levels of economic activity, particularly in the young adult ages.

- 5.34 If the 2011 Census economic activity rates were applied to the *WG-2022* and *Trend* scenarios, a higher level of labour force (and therefore employment) growth would result. The growth outcomes presented below in Table 12 are therefore considered towards the more prudent end of the scale.
- 5.35 Labour force growth under the *WG-2022* scenario (10%) is *lower* than under the *RLDP scenario*, (11.9%) over the 2018–2033 plan period, a result of the variant economic activity rate assumptions applied, and the different population growth profiles.
- 5.36 With the commuting ratio reduction from the 2021 study applied (*CR_R*), the **employment** growth outcomes are *lower* than the *RLDP scenario* outcome of **416** per year. However, with a greater reduction in the net out-commute (*CR_R_adjusted*), *higher* levels of employment growth result. The current RLDP figure of +416 per year falls within the range of the outcomes produced by the *WG-2022* scenario.
- 5.37 With a smaller labour force, the *Trend* scenarios employment growth figures are *lower* than the *RLDP* or *WG-2022* outcomes, although applying the higher commuting ratio reduction to the Trend-5yr scenario produces a comparable employment outcome to the *RLDP scenario*.

Table 13: Scenario labour force and employment outcomes, 2018–2033

Scenario	Change 2018–2033		Average Annual Employment Growth	
	Labour Force Growth	Labour Force % Growth	<i>CR_R</i>	<i>CR_R_adjusted</i>
<i>RLDP Scenario</i>	5,662	11.9%	416	-
<i>WG-2022</i>	4,434	10.0%	332	451
<i>Trend-5yr</i>	3,863	8.7%	298	415
<i>Trend-15yr</i>	2,636	6.0%	226	338
<i>WG-2018</i>	2,380	5.0%	222	-

Source: ONS, WG, Edge Analytics, OBR. Scenarios are ranked in order of labour force growth. Note that the RLDP and WG-2018 scenarios use the 2011 Census EA rates with 2018-based OBR state pension age adjustments. The other scenarios use the 2021 EA rates with 2025-based OBR state pension age adjustments. The unemployment rate profile has been updated in the WG-2022 and Trend scenarios but remains broadly comparable with the previous assumptions.

Scenario Commentary

- 5.38 The *WG-2022* scenario (replicating the official WG 2022-based *Principal* scenario from 2022 onwards) results in broadly comparable levels of **population** and **household** growth to the *RLDP scenario* over the 2018–2033 plan period, generating similar (but slightly higher) **dwelling** growth outcomes. Under the *WG-2022* scenario, dwelling growth ranges from **398** to **411** depending on the membership rate assumptions used, compared to **387** per year in the RLDP scenario.

- 5.39 The RLDP **employment** growth figure (416 per year) also sits within the range of outcomes implied by the *WG-2022* scenario (332–451 per year). **It could therefore be concluded that the 2022-based WG projections are largely aligned with MCC’s position.**
- 5.40 It is, however, important to note the following.
- 5.41 The 2022-based WG projections are based on a period of **relatively high migration growth** seen in Monmouthshire up to mid-year 2022. In the latest two years of MYE evidence, net migration in Monmouthshire has dropped to levels seen pre-2019/20. Whether migration levels return to the previous higher levels remains to be seen, although it is unlikely (at least at a national level) that **international migration** will return to the unprecedented levels seen between 2021 and 2024 (due to policy/visa changes). Regarding **internal migration**, the higher growth seen between 2019/20 and 2023/24 coincided with the period following the removal of the Severn Bridge Tolls, as well as the impact and subsequent easing of COVID-19 restrictions across England and Wales.
- 5.42 Furthermore, it is assumed that the WG projections do not take the **historical UPC adjustment** into consideration. In Monmouthshire, the UPC adjustment 2011–2021 was negative, meaning that the growth profile of the 2022-based Principal projection is misaligned with (and potentially overestimates) the historical profile of population growth.
- 5.43 The growth outcomes of the *WG-2022* scenario are therefore considered to be towards the **upper range of potential future growth in Monmouthshire.**
- 5.44 This is supported by the updated *Trend* scenarios, which result in lower levels of population, household and dwelling growth than the *WG-2022* scenario. The *Trend-5yr* scenario, which captures three years of the higher migration estimates within the latest MYE, is considered a more appropriate short-term trend than the 2022-based *Principal* projection for Monmouthshire. The dwelling growth outcomes of the *Trend-5yr* scenario (349–361) are slightly *lower* than the *RLDP scenario* figure (Figure 23).

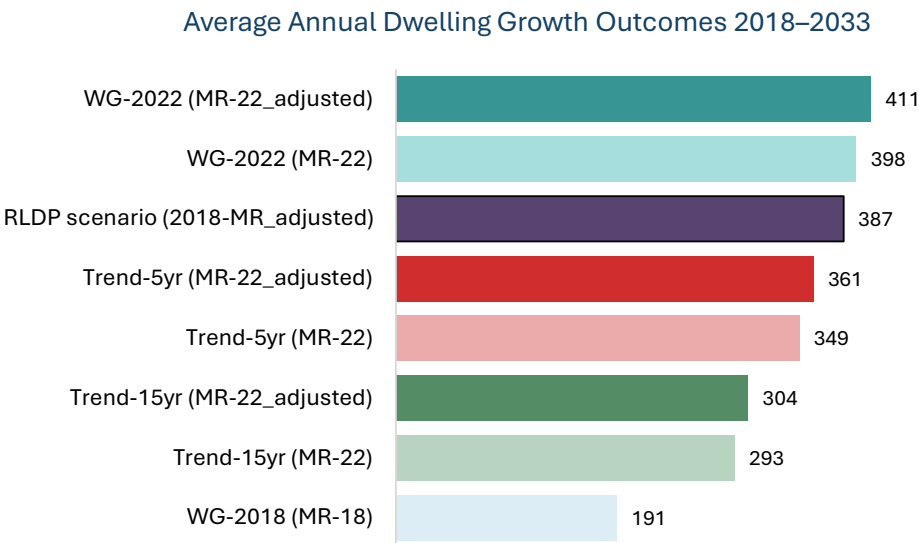


Figure 23: Scenario dwelling growth outcomes

Source: Edge Analytics

- 5.45 However, it is entirely possible that household formation rates may increase above the modest adjustments that have been applied to the 2022-based membership rates. If this were to be the case, the resulting dwelling growth figure from the *Trend-5yr* scenario would be higher. Acknowledging the uncertainty around potential future household formation, and the broad similarities in the growth outcomes, **the dwelling growth target within the RLDP is considered reasonable** and provides a positive basis for planning.
- 5.46 Regarding **employment growth**, the *WG-2022* scenario results in a lower labour force growth outcome to the *RLDP scenario*, despite comparable levels of population growth. This is a result of the economic activity rates applied (2011 versus 2021 Census) and the underpinning population profiles that result in each scenario.
- 5.47 Despite the lower labour force growth, the employment growth outcome of the *RLDP scenario* (416 per year) sits within the range indicated by the *WG-2022* (332–451), and at the top of the *Trend-5yr* scenario (298–415 per year).
- 5.48 However, it is important to note that these outcomes are a result of the economic activity rate assumptions applied: the 2011-based rates applied in the previous study (and the *RLDP scenario*) result in *higher* levels of labour force participation compared to the 2022-based rates. **If levels of economic activity were to be higher** in the *WG-2022* and *Trend* scenarios, the growth in the labour force, and level of employment growth that could be supported, would increase. Again, this (in combination with the uncertainty surrounding current and future commuting patterns) suggests that **the RLDP employment growth figure remains reasonable**.

6 SUMMARY & CONCLUSIONS

Overview of Requirements

- 6.1 MCC's RLDP identifies a housing requirement of **5,400** for the LPA over the 2018–2033 plan period, based on demographic modelling undertaken by Edge Analytics in 2021. The provision of 6,240 jobs was also identified. **At UA-level, this corresponds to 387 dwelling per year and employment growth of 416 per year.**
- 6.2 The RLDP requirements are based on a long-term migration trend scenario, developed by Edge Analytics using the then-latest mid-year estimate (MYE) evidence. A series of **'policy-on'** assumptions were applied to this scenario in the demographic forecasting, in relation to **migration, household formation, and commuting.**
- 6.3 Specifically, this included an increased in-migration flow from Bristol and South Gloucestershire (to model the potential impact of the removal of the Severn Bridge Tolls in 2018), improved rates of household formation (through 'returning' the underpinning 2018-based household membership rates for the young adult age groups to the previous higher levels seen in 2001), and a gradually reducing net out-commute from Monmouthshire.
- 6.4 Since this evidence was produced, a range of new data has become available, including the 2022-based official population and household projections from WG, the 'rebased' MYE, produced by ONS following the 2021 Census, and four years of post-Census MYE (up to mid-year 2025). This has resulted in an updated historical population growth profile for Monmouthshire. Of note is the increase in net migration seen between 2019/20 and 2022/23.
- 6.5 In March 2026, the council prepared a Position Paper on the 2022-based WG projections, highlighting that the new projections are 'closely aligned' with the RLDP growth strategy. The MCC RLDP Inspector therefore posed the following question to the council:

"Should the 'policy on' adjustments used in deriving the Plan's housing and employment growth levels be applied to the [Welsh Government's] 2022-based population and household projections? If not, why?"

Summary of Approach

- 6.6 To assist in the council's response to the Inspector's question, Edge Analytics collated and analysed a range of **demographic evidence** for Monmouthshire, including the latest official 2022-based WG population and household projections, the MYE history and associated components of change statistics, origin-destination internal migration flow data, and Census data on commuting, labour force participation, and household occupancy.
- 6.7 The analysis led to the following conclusions in relation to the 'policy-on' adjustments:
- **No migration adjustments** to the 2022-based WG *Principal* population projection are considered appropriate. The MYE data on which this projection was based

captures the period of higher net internal migration from Bristol and South Gloucestershire that occurred following the removal of the Severn Bridge Tolls. Since then, net migration in Monmouthshire has fallen to pre-COVID levels. Furthermore, the 2022-based WG *Principal* projection does not account for the historical UPC adjustment within the 2011–2021 MYE. To ignore UPC is to misrepresent the historical profile of growth in an area.

- The latest **2022-based household projections** result in higher levels of household growth compared to the previous 2018-based official projections. Patterns of household occupancy have changed over time and, although not clearly indicative of ‘suppressed’ household formation, these differences are reflected in the membership rates of the 2022-based and 2018-based household models from WG (by age and sex).

A set of **modest adjustments** have therefore been applied to the 2022-based rates to model an increase in the number of households formed (*MR-22_adjusted*), through increasing the proportion of smaller households formed in the young adult age groups. These rates have been applied alongside the unadjusted 2022-based membership rates (*MR-22*).

- Recent **commuting** data shows a high level of variation, linked to the timing of the 2021 Census during the COVID-19 pandemic and the sample-based nature of ONS data via the Annual Population Survey. **Two alternative profiles of reduced net out-commuting** have therefore been developed, the first aligned with the 2021 Edge Analytics study and the RLDP ‘policy on’ assumptions (*CR_R*), and the second reducing to a figure more aligned with the latest APS data and the 2021 Census (*CR_R_adjusted*). Both set of assumptions model a reduction in the net out-commute from Monmouthshire.

6.8 To model the impact of these adjustments on the 2022-based WG *Principal* projection, Edge Analytics has used its VICUS forecasting technology to produce a range of **demographic growth scenarios** for Monmouthshire. The scenario that replicates the 2022-based projection is referred to as *WG-2022*. Given the time that has elapsed since the 2021 study, and the range of data updates published since then, two updated alternative migration *Trend* scenarios have also been produced, based on the latest MYE statistics and modelling a short- (5-year) and longer-term (15-year) trend.

6.9 Key **household growth assumptions** (membership rates, communal population assumptions, average household size) have been drawn from the 2022-based WG projections. The two membership rate profiles summarised above have been applied to the *WG-2022* and *Trend* scenarios, resulting in two alternative household and dwelling growth outcomes. The level of dwelling growth implied by each household trajectory has been modelled through the application of a dwelling vacancy rate (aligned with the 2021 study).

6.10 The **labour force and employment** growth outcomes have been derived using economic activity rates (from the 2021 Census, with adjustments to account for changes to the state

pension age), an unemployment rate (ONS) and the two adjusted commuting ratio profiles summarised above, both modelling a reduced net out-commute.

Outcomes & Conclusions

- 6.11 The demographic forecasting presented in this report has resulted in a range of population (natural change, migration), household, dwelling, labour force and employment growth outcomes for each scenario, for comparison with the previous *RLDP scenario* (Table 14).

Table 14: Monmouthshire modelling outcome summary, 2018–2033

Scenario	Population % Growth	Household % Growth Range	Dwelling Growth Range (dwellings per year)	Labour Force % Growth	Employment Growth Range (employment per year)
<i>RLDP Scenario</i>	10.9%	13.8%	387	11.9%	416
<i>WG-2022</i>	10.7%	14.3-14.8%	398-411	10.0%	332-451
<i>Trend-5yr</i>	8.9%	12.6-13.0%	349-361	8.7%	298-415
<i>Trend-15yr</i>	6.7%	10.5-11.0%	293-304	6.0%	226-338
<i>WG-2018</i>	4.9%	6.8%	191	5.0%	222

- 6.17 Over the 2018–2033 plan period, the *WG-2022* scenario (which replicates the 2022-based *WG Principal* projection) results in a slightly *lower* level of population growth compared to the *RLDP scenario*, but generates higher household and dwelling growth outcomes. This is a result of the different underpinning population age and sex structures, and the variant household growth assumptions applied. The dwelling growth figure of the *RLDP scenario* (387 per year) is slightly *lower* than the range implied by the *WG-2022* scenario (398–411). The employment growth outcome of the *RLDP scenario* (416 per year) sits within the range implied by the *WG-2022* scenario (332–451).
- 6.18 Whilst these similarities go some way in providing reassurance that the RLDP requirement remains appropriate, it is important to acknowledge the limitations of the 2022-based *WG Principal* projection. The official projection is based on relatively high levels of historical net migration that are unlikely to return (at least in the short-term). The official projection also does not adequately reflect the historical growth profile in Monmouthshire due to the exclusion of the UPC adjustment.
- 6.19 For these reasons, the *Trend-5yr* scenario is considered a more appropriate short-term population trend projection than the *WG-2022* scenario as it is better aligned with recent trends.
- 6.20 Whilst the *Trend-5yr* population growth outcome is lower than the *RLDP scenario* (at 8.9% vs. 10.9%), and the resulting dwelling and employment outcomes are lower, **the range in the outcomes highlights the sensitivity of the modelling to adjustments in the underpinning assumptions**. It is entirely possible that rates of household formation may improve above the modest membership rate adjustments applied here (which could happen with improved

affordability and housing growth); this would increase the dwelling growth outcome of the *Trend-5yr* scenario.

6.21 Furthermore, there is uncertainty around the rates of labour force participation and commuting patterns. If rates of economic activity were to return to 2011-levels, for example, the resident labour force would be larger and able to support a higher level of employment growth than that modelled here.

6.22 **On balance, the evidence collated and analysed in this report suggests that the RLDP housing and employment targets remain appropriate for Monmouthshire and that the 2022-based WG Principal projection should be treated with caution.**

APPENDIX A

DEMOGRAPHIC FORECASTING ASSUMPTIONS

Forecasting Methodology

- A.1
- Edge Analytics has used its VICUS forecasting models to generate a range of demographic growth projections for Monmouthshire for the 2018–2033 MCC Plan Period.
- A.2
- The forecasting model utilises a population ‘cohort-component’ methodology for the projection of population by single year of age and sex using assumptions related to fertility, mortality and migration (internal and international in and out flows), in line with the methodology used by the ONS, WG and other statistical agencies (Figure 24).

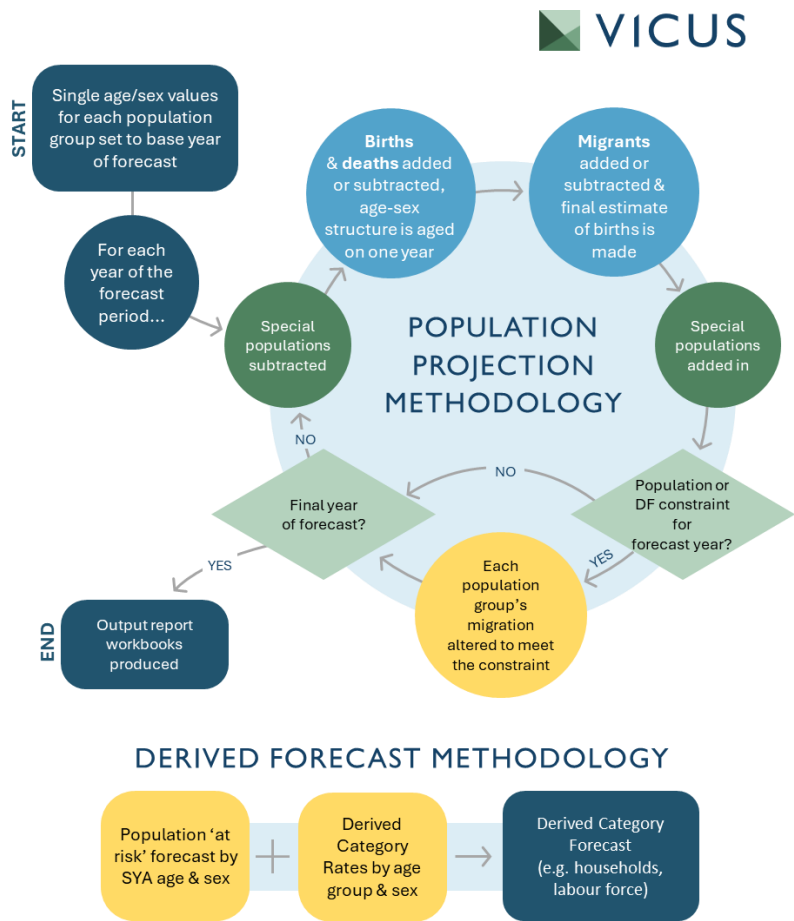


Figure 24: VICUS forecasting methodology

- A.3
- Linked to this model is the ‘derived forecast’ model, which provides a headship/membership rate model for household and dwelling projections and an economic activity rate model for labour force and employment projections.

Scenario Inputs & Assumptions

- A.4 The assumptions outlined below relate to the WG and updated Trend scenarios presented in this report. For detail on the scenario inputs and assumptions used in the RLDP scenario.

Population

- A.5 In the *WG-2022* scenarios, the 2022 base year and growth trajectories are drawn directly from the official 2022-based projections for Monmouthshire. For 2018–2022, the MYE that informed the official projections have been defined.
- A.6 In the *WG-2018* scenarios, the 2018 base year and growth trajectories are drawn directly from the official 2018-based projections for Monmouthshire.
- A.7 In the *Trend* scenarios, the projection base year is the 2025 ONS MYE, disaggregated by single year of age and sex. From 2025 onwards, future population counts are estimated by single year of age and sex, using the defined assumptions on fertility, mortality, and migration (as described below). Population estimates from the latest ONS statistics are applied for the 2018–2025 period.

Births & Fertility

- A.8 In the *WG* scenarios, historical and projected birth counts are applied to ensure consistency with the official projections.
- A.9 In the *Trend* scenarios, historical births counts are applied up to mid-year 2025. An area-specific and age-specific fertility rate (ASFR) schedule, derived from a 5-year history of historical births data (2020/21–2024/25), is used in combination with the ‘population at risk’ (i.e. all women between the age of 15–49) to calculate births in each year from 2025 onwards. Over the forecast period, the ASFR is adjusted to reflect the annual rate of change in the long-term fertility assumptions of the 2022-based WG Principal projection.

Deaths & Mortality

- A.10 In the *WG* scenarios, historical and projected death counts are applied to ensure consistency with the official projections.
- A.11 In the *Trend* scenarios, historical deaths counts are applied up to mid-year 2025. An area-specific and age-specific mortality rate (ASMR) schedule, derived from a 5-year history of historical deaths data (2020/21–2024/25), is used in combination with the ‘population at risk’ (i.e. the total population) to calculate deaths in each year from 2025 onwards. Over the forecast period, the ASMR is adjusted to reflect the annual rate of change in the long-term mortality assumptions of the 2022-based WG projection.

Internal Migration

- A.12 In the *WG* scenarios, historical and projected counts of internal in- and out-migration by 5-year age group and sex are applied to ensure consistency with the official projections.

- A.13 In the *Trend* scenarios, historical migration counts are applied up to mid-year 2025. Area-specific and age-specific migration rate (ASMigR) schedules are derived from the relevant historical time period (e.g. 5-year, 10-year, 15-year), which then determine the future number of internal in- and out-migrants for the forecast period.

International Migration

- A.14 In the *WG* scenarios, historical and projected counts of international in- and out-migration are applied from to ensure consistency with the official projections.
- A.15 In the *Trend* scenarios, historical migration counts are applied up to mid-year 2025. Future counts of international in- and out-migration are derived from the relevant historical time period (e.g. 5-year, 10-year, 15-year) including the UPC adjustment. An ASMigR schedule of rates is derived from the relevant migration history and used to distribute the future counts by single year of age.

Households & Dwellings

- A.16 The Census defines a household 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 room area”.
- A.17 In the forecasting models, a dwelling is defined as a unit of accommodation which can either be occupied by one household or can be vacant.
- A.18 Household and dwelling growth outcomes have been estimated through the application of communal population statistics, household membership rates, and a household to dwelling conversion factor (vacancy rate).

Communal Population

- A.19 Within the forecasting models, household projections exclude the population ‘not-in-households’ (i.e. the communal/institutional population). This data is drawn from 2021 Census. Examples of communal establishments include prisons, residential care homes, student hall of residence, and certain armed forces accommodation.
- A.20 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. The communal population statistics are used to derive the size of the private household population in each scenario.

Household Membership Rates

- A.21 Household membership rates determine the proportion of the household population in each household category by age group and sex. These assumptions have been drawn from the WG 2022-based household projection model for Monmouthshire. The 2022-based rates are summarised for Males and Females separately in Figure 25 and Figure 26.



Figure 25: Monmouthshire 2022-based membership rates, males

Source: WG

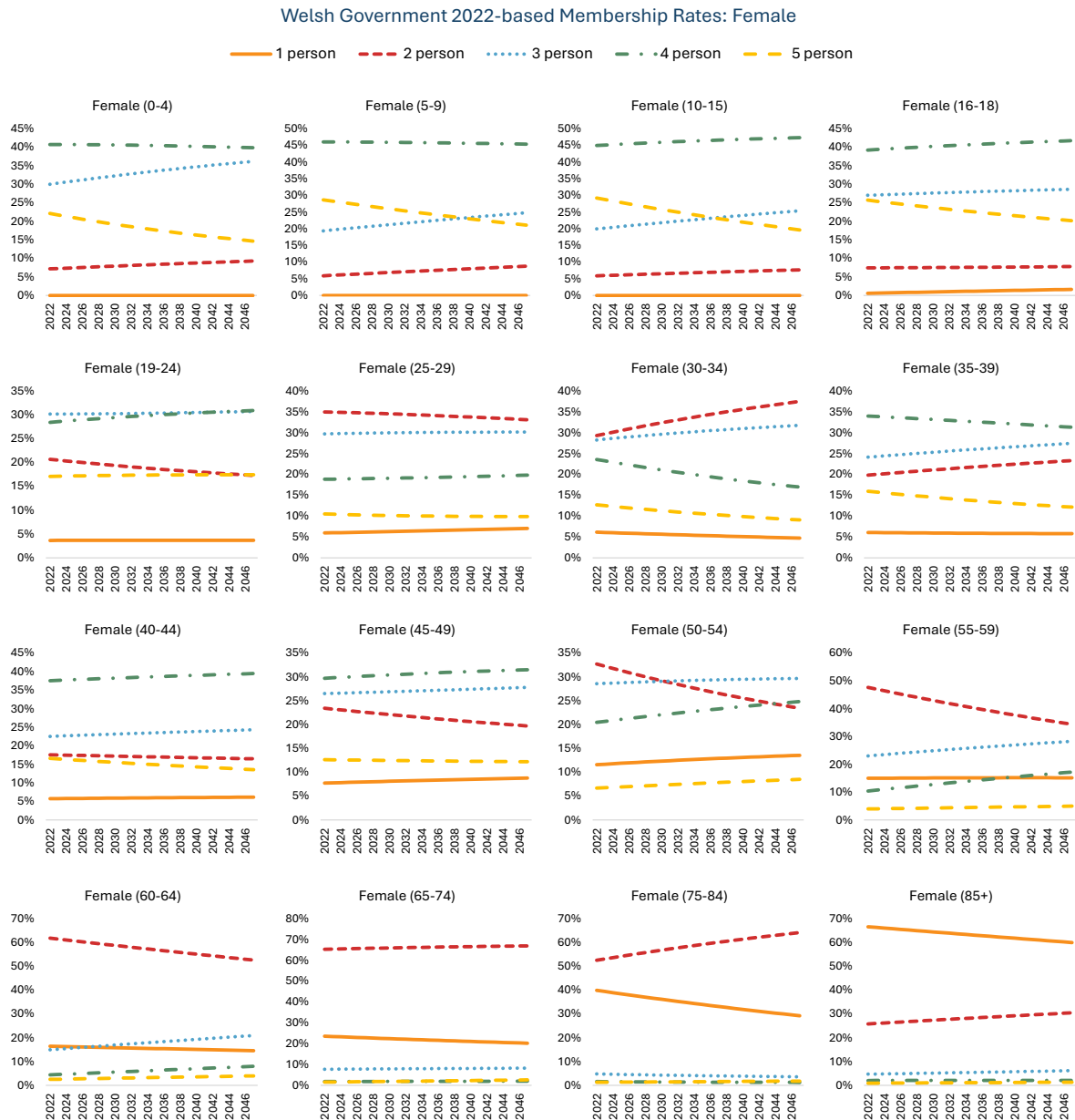


Figure 26: Monmouthshire 2022-based membership rates, females

Source: WG

A.22

Two alternative membership rate profiles have been applied to each scenario (note that the WG-2018 scenario utilises the membership rates from the 2018-based projections):

- **2022-based membership rates (MR-22)**, derived from the official projections (these are not published so have been calculated by Edge Analytics using the published and provided data from WG), as illustrated above in Figure 25 and Figure 26.
- **2022-based membership rates adjusted (MR-22_adjusted)**, derived from the official projections but with adjustments in the 19–39 age groups to model an increase in the proportion of smaller households.

A.23 The household population is then converted into **households** using average household size assumptions, again drawn from the official household models

Table 15: WG average household size statistics

Category	WG-2018 Average Household Sizes	WG-2022 Average Household Sizes
1 person	1.00	1.00
2 person (No children)	2.00	2.00
2 person (1 adult, 1 child)	2.00	2.00
3 person (No children)	3.00	3.00
3 person (2 adults, 1 child)	3.00	3.00
3 person (1 adult, 2 children)	3.00	3.00
4 person (No children)	4.00	4.00
4 person (2+ adults, 1+ children)	4.00	4.00
4 person (1 adult, 3 children)	4.00	4.00
5+ person (No children)	5.46	5.49
5+ person (2+ adults, 1+ children)	5.41	5.47
5+ person (1 adult, 4+ children)	5.33	5.31

Source: WG

A.24 The adjusted 2022-based rates for the 19–39 age groups are summarised below.

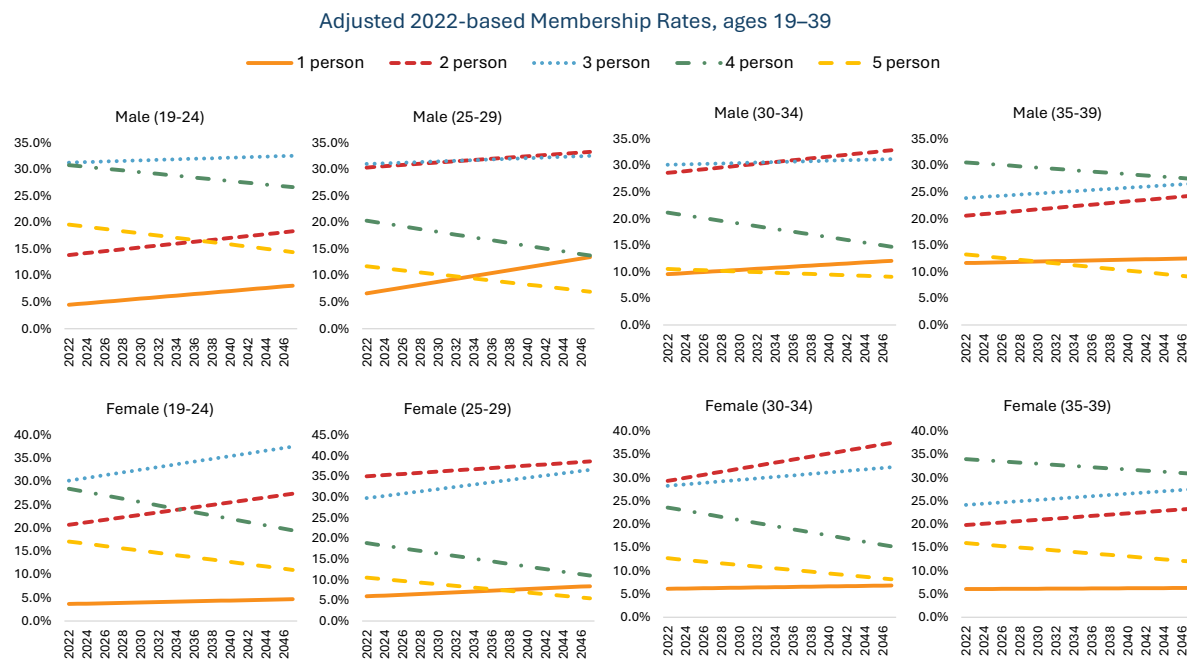


Figure 27: Monmouthshire adjusted 2022-based membership rates

Source: WG, Edge Analytics

Household to Dwelling Conversion

- A.25 The relationship between households and dwellings has been modelled using conversion factor ('vacancy rate'). A fixed figure of **4.5%** has been applied for Monmouthshire, derived from 2011 Census statistics and aligned with the previous 2021 Edge Analytics study. Note that the 2021 Census estimate is slightly higher, at 5.8%.

Labour Force & Employment

- A.26 Economic activity rates, an unemployment rate and a commuting ratio have been applied to the population growth trajectory to derive the size of the resident labour force, and the level of employment growth that could be supported.

Economic Activity Rates

- A.27 Economic activity rates are the proportion of the population that is actively involved in the labour force, either employed or unemployed and looking for work.
- A.28 Economic activity rates by five-year age group (ages 16–89) and sex have been derived from 2021 Census statistics. To take account of changes to the state pension age, adjustments have been made to the Census rates in line with the Office for Budget Responsibility's (OBR) participation rate long-term forecast published in 2025.⁴²

Commuting Ratio

- A.29 The commuting ratio defines the balance between the level of employment in an area 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 of less than 1.00 indicates that employment in the area exceeds the size of the labour force, resulting in a net in-commute.
- A.30 In all scenarios, two commuting ratio profiles have been applied:
- **CR_R** (*commuting ratio 'return' used in the RLDP scenario*)
This option replicates the assumptions used in the 2021 Edge Analytics study, reducing from the 2011 Census estimate of 1.12 to the 2001 Census estimate of 1.10 between 2020 and 2033.
 - **CR_R_adjusted** (*commuting ratio 'return' using latest APS data*)
The second option reduces the commuting ratio from the 2011 Census value (1.12) to the 5-year APS average of 1.03 by 2023.

Unemployment Rate

- A.31 The unemployment rate determines the proportion of unemployed people within the labour force. The unemployment rates have been drawn from the ONS model-based estimates, in line

⁴² OBR [Forecasting participation trends: the cohort model](#)

with the previous project but extended to include the latest data up to 2025. The 2025 value of 2.8% is fixed for the remainder of the plan period (i.e. from 2025 to 2033).



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