Affordable Housing Need in Scotland Post-2026

Michael Marshall, Craig Watkins, Berna Keskin
University of Sheffield

Richard Dunning
University of Liverpool

Ed Ferrari
Sheffield Hallam University

SFHA Scottish Federation of Housing Associations
SHELTER SCOTLAND
Chartered Institute of Housing Scotland

Acknowledgements and Declaration of Interest.

Professor Ken Gibb – University of Glasgow and Director of the UK Collaborative Centre for Housing Evidence (CaCHE) – contributed to this project as an adviser and critical friend. Professor Gibb was also a contributor to the Housing Investment Taskforce referenced in the report and contributed a research background paper for the Taskforce.

The research team wish to acknowledge the contributions of the stakeholders and practitioners interviewed for this research. They have been treated anonymously in this report. We are grateful for their contributions.

The work presented in this report is the product of a collaborative effort by our research team. While every effort has been made to ensure the accuracy and integrity of the data and analysis, any errors or inaccuracies that remain are our own

Contents

1. Executive Summary

This report presents the findings from research on projected affordable housing need in Scotland for the next Scottish Parliament 2026-31. It is the third iteration of similar research conducted in 2015 (Powell et al., 2015) and 2020 (Dunning et al., 2020). The aim of this iteration was to *identify how many affordable homes must be delivered between 2026-2031 to meet housing need in Scotland, and the associated cost.* Below we outline our definition of affordable housing need, research approach and key findings.

The projected gross affordable housing requirement for Scotland 2026-31 is **15,693 homes annually**. This is nearly a 50% increase in estimated need relative to the 2020 report and would necessitate a significant increase in the nominal Scottish affordable housing delivery target of 10,000 homes per annum. The drivers of need include increased homelessness, higher numbers of households inadequately housed in private tenures, recent spikes in rental inflation, persistent affordability pressure and a decline in the number of properties becoming vacant within the housing stock. Given the composition and drivers of need, the predominant focus of affordable housing supply should remain social rented housing.

The increased level of affordable housing need is, therefore, reflective of several acute challenges converging within the Scottish housing system. But these challenges have also emerged at a time when new housing supply - both private and social - is falling. A consensus has formed that the Affordable Housing Supply Programme (AHSP) needs urgent investment. We provide an indicative AHSP budget to meet affordable housing need, which we estimate to be **£1.64bn annually, and £8.20bn over the next Scottish Parliament** in today's prices. This represents a central projection, and the past five years have underlined the need to build resilience within AHSP. Consequently, by modelling a set of plausible inflationary scenarios we estimate that the funding should be within the region of **£8-9.2bn**.

Defining housing affordable need

We define and use the term 'affordable housing need' in two respects. Firstly, a household is regarded as *in need of affordable housing* if their housing situation falls below normative standards of adequacy and decency, and they are unable to meet these needs in the market. Housing need is a multi-dimensional concept and therefore we rely upon multiple indicators of need including homelessness, insecurity, overcrowding, extensive disrepair, or the unsuitability of a home for a household's circumstances. Secondly, societally there is a need for an aggregate amount of affordable homes to meet the household needs outlined above. To operationalise and quantify this societal need we estimate Scotland's *gross affordable housing requirement* i.e. the overall number of additional affordable homes required to meet aggregate need.

Research approach

The research proceeded through five stages:

Stage one

Policy and evidence review

A review of key policy documents and existing research. Stage one sought to contextualise the research and inform our modelling by highlighting the probable drivers of housing need in Scotland.

Stage two

Housing Needs and Demand Assessment (HNDA) review

The research involved a desktop review of existing HNDAs conducted by local planning authorities to understand housing requirements in their locality. In total, thirteen HNDAs were reviewed, covering most of the geography of Scotland. The purpose of the HNDA review was to understand current practice in housing needs assessment.

Stage three

Key stakeholder interviews

Interviews were conducted with twenty stakeholders with experience of needs assessment and affordable housing delivery. The interviews sought to understand local practice, inform the analysis in stage four, and sensitise the research to a changing local context.

Stage four

Modelling gross affordable housing requirement

To quantify Scotland's affordable housing requirement we developed a desk-based model of housing demand and need at the national scale. The model produces a gross affordable housing requirement by estimating affordable housing need – the sum of households currently in need of affordable housing and new households expected to need affordable housing over the five-year period – and subtracting the expected supply of affordable housing lettings.

Stage five

Analysis and funding requirements

The final stage involved estimating an indicative AHSP budget for 2026-31 to meet the gross affordable housing requirement.

Findings

Housing policy developments in Scotland since 2020

The past five years can be summarised as a period of significant ambition in Scottish housing policy but with gaps in implementation and acute challenges emerging in the past few years. There have been some notable achievements in housing policy, including a period in which the AHSP budget increased and focused predominantly on social rented housing. There are also long-term focused policy agendas that are yet to be implemented that may affect affordable housing delivery. Yet the past five years have highlighted the need for resilience in the housing system. The AHSP budget has fluctuated which will affect delivery. Homelessness applications have continued the upwards trajectory that began in 2017/18, notwithstanding a short dip during the pandemic. And temporary accommodation usage has risen sharply since 2020. There is increasingly a recognition that the Scottish Government's ambitious *Housing to 2040* strategy is in *"significant difficulty"* (Gibb et al., 2024: 4). In this context thirteen of Scotland's thirty-two local authorities, and the Scottish Parliament, have declared a housing emergency.

Assessing affordable housing need at the local level

Local housing needs assessment demonstrates several aspects of best practice. HNDAs tend to be transparent, mostly reliant upon credible data sources (e.g. national statistics) and demonstrate understanding of the key drivers of change in local housing markets. Although the HNDA process is thought to be a source of consistency and clarity, there is a widely held view that Scottish Government measures of backlog housing need represent a lower bound and it is common for authorities to utilise local data to provide a higher estimate. Moreover, HNDAs can be time-intensive – many of the most recent HNDAs pre-date the 2022 cost-of-living crisis – and it is commonly suggested that the HNDA process underestimates need in rural areas.

Demographic, economic and housing trends

Several demographic, economic and housing system trends suggest affordable housing need has risen since 2020. These trends include:

- Rising and persistent levels of homelessness and the cumulative shortfall of past AHSP delivery relative to estimated need, with both issues expected to be particularly acute in large urban areas with higher house prices.
- Inflation in house and rental prices over the past five years, especially private rental housing. While wage growth may have mitigated the pressure of price inflation to some extent, long-term affordability pressure is likely to continue.
- Continued growth in the number of households, especially in larger urban areas, and declining average household size as the population ages.

Affordable housing need in Scotland

To estimate affordable housing need at the national scale we develop a bespoke stock-flow model for Scotland. A stock-flow model assumes there exists at any one point in time a 'stock' of households in need of affordable housing. Over time, households may flow into need due to a combination of changing circumstances (e.g. becoming homeless) and demographic changes (e.g. new households forming). Conversely, they may flow out of need by occupying affordable homes that become available to let.

Firstly, we estimate the stock of backlog need, which comprises a) homeless households and b) households inadequately housed in the private sector and in affordability stress. Indicators of inadequate housing include overcrowding, housing below government defined quality standards, and housing unsuitable for health needs. We utilise Scottish House Condition Survey data and the 2022 Census to estimate inadequate housing. Both sources of backlog need have increased significantly since 2020. And clearing backlog need over five years will require 13,917 homes annually, an increase of 40.33% relative to the 2020 report.

Secondly, we estimate newly arising need over the next five years. Newly arising need is a combination of a) newly forming households unable to afford the market and b) new homelessness cases. We estimate that 54.83% of newly forming households will be unable to afford the market, resulting in 7,721 newly formed households requiring affordable housing annually. Further, if current trends in homelessness continue we expect that 20,170 new homelessness cases will emerge annually. In total newly arising need is estimated to be 27,891 annually. This represents a 3.7% increase compared to the 2020 report and is driven primarily by rising homelessness. Annual housing need is, therefore, estimated to be 41,808 homes.

However, some of this need will be met through the flow of social housing lettings occurring annually. Consequently, we estimate the flow of general needs lettings and low-cost home ownership resales at 26,809 homes annually. We subtract this figure from annual housing need to calculate the final gross affordable housing requirement. The annual gross affordable housing requirement for Scotland is **15,693** homes.

Funding requirement

The level of need in Scotland underlines the need for urgent, significant and sustained investment in AHSP. To inform the necessary investment, we calculated an indicative AHSP budget using our estimate of housing need and the current AHSP investment benchmarks uprated for inflation. We present multiple plausible budgetary scenarios that vary in two respects. Firstly, we present three contrasting tenure scenarios:

- 70% social rent, 30% mid-market rent (MMR);
- 75% social rent, 25% MMR;
- 100% social rent.

Secondly, we project these tenure scenarios under three different inflationary scenarios:

- 8.65% annually, which represents a continuation of recent increases in the average AHSP grant per home;
- 5.50% annually, which is the average annual construction inflation rate between Q4 2019 and Q4 2024 according to the Scottish Social Housing Tender Price Index (SSHTPI) reported by Scottish Government;
- 3.66% annually, which is the rate of construction inflation according to the SSHTPI for 2024.

Our central scenario is the 75:25 tenure split, with 5.50% inflation annually. Under our central scenario the AHSP budget would be **£1.64bn annually, and £8.20bn over five years**. In the majority of our scenarios the indicative budget falls within the range of £8-9.2bn over five years.

2. Introduction

This report presents the findings from research conducted in 2025 which sought to estimate the need for affordable housing across Scotland between 2026 and 2031. The research was commissioned by the Scottish Federation of Housing Associations (SFHA), Shelter Scotland and the Chartered Institute of Housing (CIH) Scotland. The report is the third iteration of previous work conducted in 2015 (Powell et al., 2015) and 2020 (Dunning et al., 2020).

> The Scottish Government has made a substantial commitment to expand the affordable housing sector through the Affordable Housing Supply Programme (AHSP)."

The Scottish Government has made a substantial commitment to expand the affordable housing sector through the Affordable Housing Supply Programme (AHSP). The *Housing to 2040* strategy committed the Scottish Government to delivering 100,000 affordable homes by 2032 - later increased to 110,000 - with 70% of these homes for social rent (Scottish Government, 2021). These targets are crucial to meeting their ambitions of ending homelessness, stemming rural depopulation and improving housing quality (ibid.). With the exception of 2020/21, AHSP delivery between 2019/20 and 2022/23 has been near or at the 10,000 homes mark annually (Scottish Government, 2025a). These affordable homes will undoubtedly have made a significant difference to the lives of the people living within them, including alleviating affordability stress, providing security of tenure, and mitigating the harms associated with living in temporary accommodation (Ryder, 2025).

However, the period between the previous report and the present has been one of rapid change. During this period Scotland has experienced the COVID-19 pandemic, labour shortages within the construction sector, and dramatic inflation contributing to a cost-of-living crisis. These political and economic trends have exacerbated long-term systemic issues within housing. Private rents have risen sharply in recent years while Local Housing Allowance (LHA) has been frozen (Watts-Cobbe et al., 2024). Temporary accommodation usage, and the time households are spending in temporary accommodation, has continued to increase (Gibb et al., 2024). In this context, thirteen of Scotland's thirty-two local authorities and the Scottish Parliament have declared a housing emergency. Moreover, delivery under the AHSP has

slowed with the number of completions falling in 2023/24 and 2024/25 (Scottish Government, 2025a). These trends suggest that the need for affordable housing has grown to a point beyond which 10,000 homes is sufficient, at a time when the AHSP is in need of *"re-booting"* (Gibb et al., 2024).

There is an urgent need, therefore, to reassess Scotland's affordable housing requirement, and the expected budget for delivery. The aim of this report is to deliver on those objectives by building upon the methodological approach utilised in the previous reports. The 2015 report concluded that 12,000 affordable homes were required annually between 2016 and 2021, and the respective requirement in the 2020 report was 10,600 between 2021 and 2026. The rigour and robustness of the analysis in the previous reports provided a credible evidence base that helped put affordable housing at the centre of policy debates in Scotland. As such, there is much continuity between those reports and the analytical approach taken in this research. Nonetheless, we have updated the analysis where necessary, including seeking to present an indicative AHSP budget that is resilient to the external shocks experienced in the recent past.

The research in this report also shares the core purpose and principles of the previous reports. As with the 2020 report, our purpose is to *"arrive at an estimate which can inform the reader of the scale of affordable housing need nationally; and assess the extent to which Scottish Government housing spending plans can address this need"* (Dunning et al., 2020: 12). A key accompanying principle is that a Scotland wide estimate of affordable housing need should be complementary to the local evidence base generated by the Housing Need and Demand Assessment (HNDA) process. Arriving at a national estimate of affordable housing need is more complex than simply summing together the housing need requirements presented in local HNDA documents. The granular detail on local housing, economies and labour markets presented in HNDAs is crucial to translating national level targets into a programme that meets local need. Yet, there are many elements of best practice in the HNDA process which we mirror and build upon in our research.

A second key principle is to present a set of scenarios to accompany a principal estimate of need. The past five years have illustrated the inherent uncertainty underlying any prediction. And affordable housing delivery needs to be resilient to change in the underlying drivers of housing need. Consequently, it is imperative that the research understands those drivers and their plausible upper and lower bounds.

"Arriving at a national estimate of affordable housing need is more complex than simply summing together the housing need requirements presented in local HNDA documents.

Finally, we adopt the principle set in the previous reports that the term 'affordable housing' should be disaggregated into more specific tenures to be responsive to the composition of need. We adopt the following definitions throughout the report:

1. Affordable housing is an umbrella term used to denote a category of housing tenures that includes social housing, mid-market rent and low-cost homeownership.
2. Social housing refers to secure, relatively low rent housing, prioritised according to need. Social housing is synonymous with social renting, and we use the terms interchangeably in the report. Providers of social housing include local authorities and Registered Social Landlords (RSLs, also referred to as housing associations), and collectively providers are referred to as social landlords. Collectively the tenure, stock and social landlords are referred to as the social rented sector (SRS).
3. Mid-market rent (MMR) describes housing that is typically between the cost of market rent and social rents and is designed for low to moderate income households, i.e. households less likely to be prioritised for social housing but unable to afford market rent or owner occupation.
4. Low-cost homeownership describes several schemes supported by the Scottish Government designed to enable lower income households, and often first-time buyers, to purchase a dwelling or a share in it. Within the census data utilised in our modelling, low-cost home ownership incorporates the shared-ownership and shared-equity tenures.

The remainder of the report is divided into six further chapters. Chapter three details the research approach adopted in this assessment of housing need. Chapter four outlines the housing policy changes that have taken place in Scotland since the last national assessment in 2020. Chapter five highlights the context for assessing affordable housing need at the local level, drawing on a review of the HNDA process and interviews of affordable housing stakeholders. Chapter six provides an overview of the demographic trends and context drawing upon key indicators that feed into the Scotland-wide assessment. Chapter seven presents the main findings from the modelling exercise and provides estimates for affordable housing need in Scotland under a range of scenarios. Chapter eight discusses the key policy and funding implications of the Scotland-wide assessment presented in chapter seven with reference to the broader policy and fiscal landscape. Also included is an Appendix with supplementary information and technical details of our modelling.

3. Research approach

The research was commissioned in November 2024 with a focus on understanding affordable housing need and quantifying the affordable housing requirement in Scotland.

The research aim and objective were:

- *Aim: to identify how many affordable homes must be delivered between 2026-2031 to meet housing need in Scotland, and the associated cost*
- *Objective: to establish a credible and research-based housebuilding target and indicative budget for the Affordable Housing Supply Programme (AHSP) 2026-31.*

As indicated by the research aim and objective, the focus of this research is on affordable housing need across Scotland and the AHSP. The national scale requires us to focus on certain top-level outputs - an estimate of need quantified in terms of the number of homes, and an indicative budget. We do not provide the analysis necessary to determine the exact type or size of the homes required. Though we consider the location of need, this is done at a regional level only. Local authorities and city regions produce their own local estimates of housing need through the Housing Needs and Demand Assessment (HNDA) process, and associated strategies for delivery. Our research should be seen as complementary to, rather than a duplicate of, the local planning process. It is our view that considerations such as size and exact location are most appropriately and feasibly determined locally. We do discuss the potential need for certain tenures at the national scale as it has implications for AHSP funding, but not to the granular detail that will be necessary at the local level.

The research methodology proceeded through five stages:

1. **Stage one - Policy and evidence Review.** A review of key policy documents and existing research. Stage one sought to contextualise the research and inform our modelling by highlighting the drivers of housing need in Scotland. A particular focus was given to the effects of policy upon housing need, affordability, and supply. As our focus is on estimating expected need, it is outside of the scope of the research to formally evaluate the policies discussed in stage one, especially where they will have a significant time lag between implementation and impact (e.g. land reform). Rather the focus is on placing affordable housing need in context. Research reports were sourced through a search of online research repositories, the project team's knowledge of the topic area, and later supplemented with recommendations from interviewees in stage three. Reviewed reports are included in our bibliography.

2. **Stage two - HNDA Review.** The research involved a desktop review of existing HNDAs. In total, thirteen HNDAs were reviewed, covering most of the geography of Scotland. The assessments were conducted across a range of time periods with some now quite dated. The purpose of the HNDA review was to understand current and best practice in housing needs assessment, and how local planning practitioners perceive, and in some cases replace, Scottish Government data and indicators of housing need. The reviews of each of the HNDAs involved the completion of a proforma (see Appendix) which was designed to allow the team to assess the local and regional HNDAs in relation to several criteria – output quality and clarity, technical and methodological robustness, and the clarity and consistency of process (e.g. in relation to the expectations set out in the 2020 Practitioner's Guide).
3. **Stage three - Key stakeholder interviews.** Interviews were conducted with stakeholders with experience of needs assessment and affordable housing delivery. The interviews sought to understand local practice, inform the analysis in stage four, and sensitise the research to a changing local context. In total, twenty stakeholders participated in the interviews. This included seven representatives from local government; two from national government; five from community groups and housing charities; three from economic and community development agencies; and three consultants and expert market analysts. The interviews were semi-structured and each covered a range of key themes (see Appendix). The respondents provided informed consent in accordance with university ethics procedures and are treated anonymously in the report. Insights from the interviews are interspersed in the report where relevant and discussed in chapter 5.
4. **Stage four - Modelling gross affordable housing requirement.** To quantify Scotland's affordable housing requirement we developed a desk-based model of housing demand and need at the national scale. The analysis focused on the development of a stock-flow model as is commonly used to conduct housing needs assessments, with the approach adopted in the 2020 project serving as the foundation for the modelling. This approach in itself mirrors many of the principles adopted by the Scottish Government's Centre for Housing Market Analysis (CHMA) who publish an online tool for modelling HNDA scenarios. Nonetheless, our research differs from both the HNDA tool and the 2020 project in some respects, in part out of necessity due to data availability. These differences are discussed in depth in chapter 7.
5. **Stage five - Analysis and funding requirements.** The final stage involved estimating an indicative AHSP budget for 2026-31 to meet the gross affordable housing requirement. The approach taken is similar to that of the 2020 report, using existing AHSP grant benchmark rates as the primary cost input and calculating the budget under three scenarios that vary in terms of the tenure mix of affordable housing provided. But we amend this approach to account for variation between regions in terms of the delivery that can be expected from councils, and the potential for recent inflationary pressure to continue. Stage five also discusses some further issues for consideration to successfully deliver Scotland's housing need.

3.1. Defining affordable housing need

As was noted in the 2015 and 2020 reports, the concept of housing need is inherently normative. Recognising someone as 'in need' rests upon an inherent value judgement that something necessary is lacking and should be delivered (Bramley et al., 2010). In this respect need differs from demand in that the circumstances of a household in need fall below a minimal threshold of adequacy on which there is broad consensus, whereas demand is reflective of household choices given their financial capacity and preferences (ibid.: 25).

As need is a moral concept, people will have differing views of what constitutes need and how it should be met. We do not claim that the conception of need advanced in this paper is irrefutable, but we do aim to be clear on how we conceptualise and operationalise need in the affordable housing context.

In this report we focus specifically on *affordable housing need*, which we define and use in two respects. Firstly, a household is regarded as *in need of affordable housing* if their housing situation falls below normative standards of adequacy and decency, and they are unable to meet those needs in the market. The concept of 'home' is fundamental to meeting an array of emotional needs – security, comfort, autonomy – that may be undermined by the quality, quantity and affordability of available housing. As such, both affordable housing need and the minimal standards it implies are multi-dimensional concepts. To understand the drivers of need we rely upon multiple indicators including homelessness, insecurity, overcrowding, extensive disrepair, and the unsuitability of a home for a household's circumstances. Any robust response to affordable housing need should be seeking to produce a reduction in those indicators.

Our second definition of affordable housing need refers to one such response – the societal need for an aggregate amount of affordable homes to take households out of need. To operationalise and quantify this societal need we estimate Scotland's *gross affordable housing requirement* i.e. the overall number of additional affordable homes required to meet need (see chapter 7).

There is a relevant policy debate as to whether taking households out of need should require the provision of a new dwelling in each case, and alternative approaches might for example involve improving standards in the private rented sector (PRS). We briefly respond to this debate in chapter 7. But for the purposes of defining affordable housing need the key point is that the gross affordable housing requirement represents a quantity of homes that can be used to assess the scale of need.

> "The national scale requires us to focus on certain top-level outputs - an estimate of need quantified in terms of the number of homes, and an indicative budget."

4. Housing policy developments in Scotland since 2020

4.1. Introduction: Scotland's current housing policy context

This chapter provides an overview of the housing policy context within broader welfare and social policy in Scotland. It then highlights significant policy changes concerning affordable housing that have occurred in Scotland since 2020. The previous report estimated a requirement in Scotland to supply 10,600 new affordable homes each year for five years (a small reduction on the requirement for the period 2015-2020) (Dunning et al., 2020). Since then, the Scottish Government's commitment to delivering affordable housing has changed several times.

The chapter considers the core components of Scotland's policy context for the need and delivery of affordable housing. Discussion of the funding mechanisms, in particular the AHSP, is situated within an explanation of the Government's current overarching route map *Housing to 2040*. This is then followed by explanation of key sub-components in this need and delivery, such as the Rural and Islands Housing Action Plan and the Land Reform (Scotland) Bill. It is imperative to situate affordable housing supply policies in their relationship to the planning system and its operation, as such the section includes an overview of the National Planning Framework 4 and operation of local authority planning.

4.2. Housing to 2040

In March 2021, the Scottish Government unveiled *Housing to 2040*, a vision and route map for Scotland's housing over the following two decades. Central to the vision was the aim to *"deliver our ambition for everyone to have a safe, good quality and affordable home that meets their needs in the place they want to be"* (Scottish Government, 2021: 2). This vision included the delivery of 100,000 affordable homes over a decade – a 6,000 home shortfall from the requirement outlined in the 2020 report – with at least 70% for social rent. In May 2021, the new SNP-Green government was elected, which increased the target to 110,000 homes,[1] and retained the 70% commitment.

The *Housing to 2040* route map sought to align with the Government's broader goals within the National Performance Framework, and constituted a comprehensive approach, drawing together ending homelessness, planning, affordable housing supply subsidies and other housing supply mechanisms (e.g. self-provided housing) and tackling key problems such as excessive short-term lets, empty homes and heat loss. The route map built on an extensive period of consultation, undertaken prior to the outbreak of COVID-19, and aligned with core international agendas, such as the UN's Sustainable Development Goals.

The route map, however, did not contain information about monitoring or programme management and there were early concerns about a likely implementation gap

[1] www.gov.scot/news/agreement-with-scottish-green-party

between the rhetoric and outcomes (Gibb and James, 2021). After only a couple of years, the route map has not yet materialised while the context for delivery has become increasingly challenging:

"Most observers would agree that the Housing to 2040 strategy is in significant difficulty, and with it the ambitious goals to elevate the housing system so that it can make a sustainable long-term contribution to prosperity, meeting housing need, and reducing poverty and inequality." (Gibb et al., 2024: 4).

Recognition of the extent and breadth of issues has resulted in a 'Housing Emergency' being declared in May 2024 by the Scottish Parliament, preceded by 5 local authorities and succeeded by a further 8 in 2024 declaring their own housing emergencies in various forms (SPICe, 2024). The reasons for declaring a housing emergency vary across institutions, but common themes include a lack of affordable housing, rental price increases, budgetary cuts to AHSP, and the number of homeless households and households in temporary accommodation (ibid.).

The act of declaring a national housing emergency has no direct legal impact but many local authorities have published action plans in response. Common responses include reducing the time to re-let social rented properties, increasing the social housing lets available to homeless households, and purchasing properties for usage as temporary accommodation or social housing (COSLA, 2024). By mid-2024, the Local Government, Housing and Planning Committee was exploring the Housing Emergency and whether *Housing to 2040* was adequate to meet the challenge (The Scottish Parliament, 2024). In response, the call to significantly expand the supply of new homes, expand funding for homelessness services, maximise affordability across all tenures and to maximise the use of existing homes for people in need was made in June 2024 by Shelter Scotland, Homes for Scotland, SFHA and CIH Scotland (James et al., 2025). In May 2025, the Local Government, Housing and Planning Committee's Housing Inquiry report recommended that the Scottish Government create a Housing Emergency Action Plan with clear milestones and outcomes, so that progress in counteracting the emergency can be measured (Local Government, Housing and Planning Committee, 2025).

> Most observers would agree that the Housing to 2040 strategy is in significant difficulty, and with it the ambitious goals to elevate the housing system so that it can make a sustainable long-term contribution to prosperity, meeting housing need, and reducing poverty and inequality.
>
> *Gibb et al., 2024: 4*

4.3. Affordable Housing Supply Programme

A key tenet of the *Housing to 2040* route map, and a longer-term central component of housing policy for the Scottish Government, is the AHSP. The AHSP includes social rented, mid-market rent and affordable homeownership support. The Scottish Government funds affordable housing through a combination of direct capital investment, partnerships with housing associations and local authorities, financial instruments, and strategic policy frameworks. These funding mechanisms are designed to support the development of social rented housing, mid-market rent properties, and low-cost homeownership.

Although the AHSP is central to delivering the Scottish Government's housing objectives, the budget has fluctuated over the course of the current Parliament. The Scottish Government identified £3.5 billion for funding the AHSP between 2021 and 2026, in support of the ambition to deliver 110,000 affordable homes by 2032 (SPICe, 2025). The budget was increased in 2023 to more closely align subsidies with the increase in development costs. For 2024-25, the Government reduced the budget for affordable housing by £200 million,[2] and whilst it officially maintained the target of 110,000, the reduction in budget signalled that meeting this target would be a significant challenge. The budget for 2025-26 was subsequently increased to £768 million to support 8,000 new affordable dwellings,[3] but the budget was in real terms still below the budget seen in 2020-21. There is now widespread evidence and agreement that the target of 110,000 homes by 2032 will not be achieved without a significant and sustained commitment to supporting affordable housing delivery (Gibb et al., 2024).

Management of the AHSP is partly devolved to local authorities via funding through the Resource Planning Assumption (RPA), which in turn enables authorities to undertake spending in line with their own Strategic Housing Investment Plan (SHIP). The RPA is informed by the Strategic Housing Investment Framework (SHIF) – a formula to determine the spatial funding allocation across thirty of Scotland's local authorities which takes into account affordability, deprivation, rurality and homelessness. Glasgow City Council and the City of Edinburgh Council manage expenditure through development programmes in their areas directly as a result of the Transfer of Management of Development Funding (TMDF). The Scottish Government then provides grants to social landlords to deliver affordable housing in line with the SHIPs and taking into account other funding contributions (e.g. developer contributions). Gibb et al. (2024: 32) have called for a *"root and branch"* review of the resource allocation mechanisms embodied by SHIF and TMDF, arguing they are *"only partially related to objective measures of current need"* given they place significant weight on deprivation and regeneration need to the detriment of affordability need.

The request for grant funding support has some flexibility within it. For a streamlined assessment, the RSL or council self-certifies that they are only requesting a minimum viable amount below the benchmark (which varies between city and urban; rural areas; and West Highland, Island authorities and remote/rural Argyll). They can also apply for funding above the benchmark if the scheme requires a higher grant rate, but this will incur a more detailed value for money assessment (SPICe, 2025).

[2] www.gov.scot/publications/scottish-budget-2024-25
[3] www.gov.scot/publications/scottish-budget-2025-2026

Table 4.1: Affordable housing investment benchmarks (3 person equivalents) in 2024

Project Type	West Highland, Island authorities and remote/rural Argyll	Other rural	City and urban
RSL social rent	£117,222	£101,878	£95,741
Council social rent	£101,878	£92,673	£87,763
RSL mid-market rent	£71,806	£69,351	£65,669
Council mid-market rent	£65,055	£63,214	£60,145

Source: Scottish Government, 2024a

Whilst the majority of the AHSP funding is used for the creation of new build homes, it is also used by councils and RSLs to purchase existing homes. The AHSP includes guidelines around acceptable purchases where there is strategic housing need and the local authority agrees, these include: open market purchases; off market purchases; purchases from owner occupiers where they cannot afford required maintenance or refurbishment; and purchases from developers (Scottish Government, 2024b).

In addition to funding provided through local authority direction, the Scottish Government also manages national programmes as part of the AHSP. There are three key components. First, the Open Market Shared Equity Scheme (OMSE) enables households to purchase open market housing in partnership with a government equity stake. It prioritises: *"people aged 60 and over; social renters; disabled people; members of the armed forces; veterans who have left the armed forces within the past two years; and widows, widowers and other partners of service personnel for up to two years after their partner has lost their life while serving"* (Scottish Government, 2025b). Second, the £30 million allocation to the Rural and Islands Housing Fund supports a range of local actors to deliver new housing through support for both feasibility studies and capital support for development and refurbishment, from community organisations to private developers, over the term of the parliament (Scottish Government, 2024c). Third, charitable bonds enable loans to RSLs for new affordable housing, which then generates capital funds for new housing supply grants; the Government has invested over £460 million between 2014 and 2024 in these bonds (Scottish Government, 2024c).

4.4. Rural and Islands Housing Action Plan

As part of the commitment to 110,000 affordable homes by 2032, the Scottish Government has identified that 10% of these homes will be in rural and island areas (Scottish Government, 2023a). Rural areas and islands have been recognised across each of the previous two iterations of this report as requiring significant attention, support and funding if they are to be able to meet their housing need. The declaration of housing emergencies by rural and island local authorities highlights the local recognition that housing need is not being met.

Research on rural areas and islands highlights issues within both the existing stock and the delivery of new supply that contribute to housing need. In relation to the condition of the existing stock, a report from the Scottish Human Rights Commission (SHRC)

suggested Scotland's rural stock is on average older and less energy efficient than the urban stock (SHRC, 2024). In addition, policy reports routinely identify particular complexities in delivering new affordable housing in rural areas with issues including: land ownership constraints, land prices, costs of development, site effectiveness, limited skills and resources, planning constraints, and a contraction in the market share of small and medium sized (SME) home builders operating in rural areas (James et al., 2024; Homes for Scotland, 2024; Reid et al., 2020; SoSREP, 2024). These issues were echoed in our stakeholder interviews, including the lack of SME home builders:

> We're very reliant now upon 7 or 8 housebuilders, whose build out rates will be determined by their own viability. They don't build have the same propensity to build in brownfield sites or in rural areas to the same degree as SMEs. And delivery is seriously affected in some parts of Scotland as a result" (market analyst).

The implementation of the Scottish Government's commitment to providing 10% of its overall affordable target in island and rural areas is considered in further detail in its Rural and Islands Housing Action Plan (2023). This plan has over 20 different actions, including direct grant allocations (e.g. £30 million to support community-led affordable housing delivery), through working with the Scottish Empty Homes Partnership to share best practice across rural and island areas, to exploring the potential for the use of modern methods of construction in rural and island contexts.

4.5. Rent freezes and tenants' rights

In October 2022 the Scottish Government froze rents for existing tenants in Scotland across both private and social sectors. The freeze was a response to the expanding cost-of-living crisis, under the Cost of Living (Tenant Protection) (Scotland) Act 2022, though the Scottish Labour Party had previously considered a two-year freeze. The rent freeze transitioned to a rent cap on 1 April 2023, with PRS rent increases within tenancies capped at 3%, although landlords could apply for up to a 6% increase to cover increased costs in limited circumstances.

The end of this temporary and emergency legislation in March 2025 has resulted in a return to open market value as the legal basis for rents. This has been widely supported by private housing providers, through the argument that rent freezes stifle new supply (e.g. British Property Federation, 2023), but has also drawn criticism from tenant advocacy groups (Scottish Housing News, 2025). In March 2024 the Housing (Scotland)

Bill was introduced to Parliament, it responded to the Government's 2021 consultation on A New Deal for Tenants. The Bill includes the potential for Scottish Ministers to reassert private residential tenancy rent control areas, limiting the number of within year rent increases possible for both new and existing tenancies. The consultation on the bill was open until July 2025 and at the time of writing has not been responded to by Government.

The Housing (Scotland) Bill includes five further parts, aside from rent controls. Part 2 considers how courts and tribunals permit evictions and enhances the damages awarded to tenants in the case of unlawful eviction. Part 3 enables both private and social tenants to request to keep a pet, and the right for private tenants to make some changes to the property they are renting. Part 4 includes several separate components relating to tenants, including the reuse of unclaimed deposits by the Government, permitting single person ends to joint-tenancies and the potential to convert assured tenancies into private residential tenancies. Part 5 tightens the responsibilities of a range of actors in relation to those who are homeless or at risk of homelessness. Part 6 includes a range of other matters, from fixing mobile home pitch fee increases to data sharing between ombudsmen.

4.6. National Planning Framework 4

The Scottish Government published the National Planning Framework 4 in 2023. NPF4 is the national spatial strategy for Scotland to guide development to 2045 (Scottish Government, 2023). NPF4 has had consequences for how national and local governments estimate local housing need. Annexe E of NPF4 outlines the Minimum All-Tenure Housing Land Requirement (MATHLR) for each authority, which is the *"minimum amount of land, by reference to the number of housing units, that is to be provided by each planning authority in Scotland for a 10 year period"* (ibid.). The MATHLR is partly calculated using the inputs and framework of the CHMA's HNDA tool (see chapter 5) and bases the requirement upon a) projections of household numbers, plus b) an estimate of existing need and c) a 'flexibility percentage' that represents *"a contingency of land to allow for changes in sites coming forward"* (ibid.). As the MATHLR is a 'minimum' requirement that is 'all-tenure', local planning authorities are expected to exceed the requirement, and determine the need for different tenures, through their HNDA process and in their Local Development Plans.

Policy reports have raised some concerns about the effect of NPF4 on local planning, as well as concerns about the estimation of need through the HNDA process more generally. Gibb et al. (2024: 14) point out that, due to the production of minimum unit numbers through the MATHLR, *"the latest iteration of the HNDA model [in Scotland] has been criticised for relying more on presumption of centrally determined assumptions than before."* Multiple reports have raised a general concern that the HNDA process underestimates backlog need by relying upon a narrow definition – the number of homeless households in temporary accommodation *plus* households who are *both* overcrowded and concealed (abbreviated to HoTOC) (ibid.; The Diffley Partnership and Rettie & Co, 2024). James et al. (2025) report that the HNDA process may not provide the granularity necessary to assess need in rural communities and that local HNDAs involving primary data collection may be more informative in these contexts. Within our interviews, rural housing stakeholders raised concerns that HNDAs can be overly driven by demographic trends and could reinforce depopulation:

> If HNDAs are too cautious and based on historic evidence/ trends, there's a real risk they become a ceiling on growth and population" (economic and community development agency employee).

4.7. Homelessness policy

Since the last iteration of this research, the Homeless Persons (Suspension of Referrals between Local Authorities) (Scotland) Order 2022, has come into force. The Order suspends referrals between local authorities on the basis of their local connections, i.e. it prevents local authorities from refusing homelessness cases because of an alternative local authority connection. This means that homeless households have the choice to present where they wish, with the goal of helping households integrate into the local community and to reduce repeat homelessness.

The Homelessness Monitor in Scotland 2024 suggests that statutory homelessness is increasing and that without a solution to some of the challenging socio-economic issues indicates that the upwards trend may continue over the next few years (Watts-Cobbe et al., 2024). The Scottish Housing Regulator (SHR) stated in March 2025 that three local authorities are impacted by *"systemic failure"* - i.e. demands in the homelessness system exceed their capacity to respond, resulting in the authority lacking suitable temporary accommodation to meet their statutory duties - with a further seven authorities at risk of systemic failure (SHR, 2025).

A significant contributing factor has been the affordability of private renting at the lower end of the market. Affordability has been negatively impacted by the long-term effect of freezing Local Housing Allowance (LHA) rates which has affected the link between LHA and local rental prices (Sims and Allard, 2023). Analysis of Zoopla rental listings found that only 8% of properties were affordable to LHA recipients (Watson et al., 2023). SOLACE Scotland (2023: 6) suggest that a further recent contributing factor to increased homelessness has been Home Office policy towards asylum seekers. In 2023 the Home Office introduced a streamlined asylum decision making process to expedite the clearing of a backlog of cases, but SOLACE report this has contributed to increased homelessness among people granted refugee status or leave to remain due to their difficulties in securing accommodation, and that this pressure is particularly acute in Glasgow City where temporary accommodation usage among refugees has risen (ibid.).

4.8. Land ownership

At the heart of affordable housing supply is often ownership of the land underneath. Concern regarding the concentration of land in Scotland has been identified regularly (Scottish Land Commission, 2021). The Land Reform (Scotland) Bill was introduced to Parliament in March 2024 with two parts. The first part of the bill deals with large landholdings, it includes a power for Ministers to require landowners to have a land management plan and consider requests from communities for leasehold rights, as well as making information

about potential sales available and for time for communities to register an interest in the land. The second largely relates to non-residential land, and focuses on environmental purposes, small landholdings (including tenant farmers) and agricultural holdings. The Bill will, if passed in its current form, strengthen communities' ability to acquire land (through the Community Right to Buy) by giving them more time to register their interest in land and make ownership more accessible through being able to purchase smaller parcels of land.

4.9. Housing Investment Taskforce

In June 2025 the Housing Investment Taskforce (HIT), set up by Paul McLennan MSP and Minister for Housing at the time (now replaced by Màiri McAllan), published its findings after a year-long investigation. The Taskforce sought to unlock investment (new and existing) in housing across all tenures, whilst recognising that investment was not the goal, rather *"a priority because of what it delivers for people, communities and businesses across Scotland"* (HIT, 2025: 4). The Taskforce operated across: rent control measures; housing investment with ideas beyond Scotland; alternative finance mechanisms for affordable homes; borrowing terms and limitations for affordable housing; home ownership; new partnerships; and interventions for stalled sites.

The Taskforce produced 28 recommendations, which whilst broadly supported have raised some concerns within the sector, such as the role of for-profit housing providers (Wilmore, 2025). Key recommendations with direct implications for affordable housing include:

- Stimulate further discussions between RSL demand and investor appetite and discuss with affordable housing providers what further support would be appropriate and useful.
- Make a long-term commitment to a minimum level of funding for new affordable housing supply recognising housing as critical infrastructure.
- Assess capacity of the RSL sector to deliver new supply.
- Allow RSLs to provide mid-market rental properties as part of core operations.
- Seek write-off of historic Housing Revenue Account (HRA) debt to provide immediate capacity for new supply.
- Allow new entrants to deliver affordable housing on a 'for-profit' basis utilising public sector pension funds (HIT, 2025).

4.10. Summary of housing policy developments

The past five years can be summarised as a period of significant ambition in Scottish housing policy but with gaps in implementation and acute challenges emerging in the past few years. There have been some notable achievements in housing policy, including a period in which the AHSP budget increased and focused predominantly on social rented housing. There are also long-term focused policy agendas that are yet to be implemented but that may affect affordable housing delivery e.g. the recommendations of the HIT. Yet the past five years have highlighted the need for resilience in the housing system. The AHSP budget has fluctuated in recent years, which will affect delivery and investor appetite, and homelessness has continued its longer-term upwards trajectory following the pandemic. Both issues underline the need to reassess expected affordable housing need in Scotland in order to reignite delivery during the next Parliament.

5. Assessing affordable housing need at the local level

This chapter seeks to review existing assessments of affordable housing need in Scotland. It seeks to summarise existing HNDAs and use these to contextualise and inform the approach used in this study. In addition to reviewing published HNDAs, this chapter also draws on observations made about existing assessments in the in-depth interviews with expert stakeholders.

5.1. The local needs assessment landscape

There is a long history of undertaking local level market analysis, affordability and needs assessment in Scotland that can be tracked back to the roll out of Best Practice Guidance by Scottish Homes and, subsequently, Communities Scotland in the 1990s. Since the 2001 Housing (Scotland) Act, local authority strategies and plans are required to be underpinned by needs and demand assessments. The way in which this responsibility is discharged is shaped by the 2020 *Housing Need and Demand Assessment: A Practitioner's Guide* published by Scottish Government (2020). The Guide summarises the legal and planning context within which HNDAs are situated and sets out advice on the methods, tools, data sources, and processes that should be employed by local authorities.

The HNDAs provide estimates for individual or groups of local authorities of the extent of forecast housing need over a period of time quantified as a number of homes. Estimates present a range of scenarios, typically informed by varying expectations regarding future demographic, economic and housing market trends, plus an estimate of currently existing backlog need. The assessments also fulfil a broader remit in that they identify key market trends and provide an overview of existing stock and market contexts. The stated aim, in the Practitioners' Guide, is that the assessments should be robust and credible. Moreover, the HNDA process is intended to be a transparent means of informing policy discussion, rather than fixating on a single number. The government's Local Housing Strategy (LHS) guidance states: *"The Housing Need and Demand Assessment (HNDA) is a primary element of the evidence base for the LHS and Development Plans, and its findings should help determine outcomes and priorities for future housing and related service delivery"* (Scottish Government, 2019: 10).

The CHMA provides an Excel-based tool to assist authorities conduct their HNDAs. The HNDA tool provides data on projected household growth, backlog need, local prices and rents, and modelled predictions of the local distribution of incomes produced by Heriot-Watt University.

5.2. Evaluating local needs estimates

The approach used in Scotland is superior to that used elsewhere in the UK in terms of its consistency and clarity. Following Ferrari et al. (2011) who undertook a review of the (now dismantled) Strategic Housing Market Assessment framework employed in England, the research team scrutinised thirteen local assessments against three broad criteria: conceptual clarity and quality of the outputs; the technical and methodological robustness of the assessments; and the clarity, transparency and consistency of the assessment process – see Appendix for the proforma employed in the assessment process. Table 5.1 provides an overview of the assessment.

Table 5.1. Summary of HDNA Reviews

	Aberdeen City & Aberdeenshire	Argyll and Bute	Angus	Dundee	Dumfries	Glasgow and Clyde Valley	East Ayrshire	Edinburgh and South East Scotland	Highland	Moray	North Ayrshire	Perth and Kinross	South Ayrshire
1. Output Quality and Clarity													
La included (number)	2	2	1	1	2	8	1	6	1	1	6	2	1
Date of Report	2024	2021	2022	2022	2016-2035	2024	2018	2022	2021	2023	2021	2022	2021
Time Period	2023-2042	2021-41	2021-2041	2021-2041	2016-2035	2022-2040	2023-2038	2021-2040	2019-29	2022-2041	2022-2041	2021-2041	2021-2042
Estimate Range pa	801- 1283	4-112	122-151	235-316	73-147	3,471	75-97	4592	904	337	116	323	88
Overall Requirement	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tenure	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Stock Type	Y	N	N	N	N	N	Y	N	Y	N	P	N	Y
Geography/ Sub Area	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N
Specialist Provision	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
2. Technical and Methodological Robustness													
Replicability	Y	N	Y	Y	Y	Y	Y	P	P	P	Y	P	P
Use of Qualitative Data	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Other Data	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3. Clarity and Consistency of Process													
Scenario Testing	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Sensitivity Analysis	N	N	N	N	Y	N	N	N	Y	N	N	N	N
Quality Control	Y	Y	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Key: Y yes | N no | P Partially

5.3. Conceptual clarity and outputs

The key concepts in HNDAs include backlog housing need, housing demand and housing affordability. Most studies seek to offer definitions and to link these to the approach used in measurement. The existence of national guidance helps provide clarity in relation to what is meant by need and demand. It is very common for planning authorities to adopt the CHMA HNDA tool definition of affordability (see below). All existing HNDAs employ consistent tenure categories and provide core estimates of need. The coverage of market drivers and breakdown of estimates into sub-categories by tenure and specialist accommodation are fairly consistent across the reports. The extent to which local geographies are explored varies.

5.4. Technical and methodological consistency

HNDAs draw extensively on the CHMA modelling tool. This ensures a high degree of consistency in approach. There is some evidence of variation in inputs and data sources, but the broad approach is similar across HNDAs. Almost all of the HNDAs adopt the tool's framework for estimating affordability and calculating housing demand from household growth, although there is variation in terms of the scenarios modelled within this framework. The tool's framework relies upon: National Records of Scotland (NRS) projections of household growth; projected trend rates for growth in incomes, prices and rents; and a set of affordability ratios to split projected need into different tenures (see chapter 7 for further detail).

Nonetheless, there is evidence that authorities utilise the flexibility provided by the HNDA tool to model a variety of scenarios using different inputs and informed by knowledge of local market conditions and policy. There are three significant areas of variation that impact on the estimates produced. First, the studies are conducted at varying points in time and employ different time periods over which need is estimated. For instance, Dumfries and Galloway covers 2016–2035; Highland covers 2019–2029; and East Ayrshire covers 2023–2038. Second, although most studies offer a range of estimates, the scenarios used to generate the range of estimates varies greatly in both number (from two to six) and in terms of the factors that the analysts allow to vary (economic (growth) conditions, migration trends, market conditions, policy direction, or a combination of factors (such as high growth/high migration)). The majority of reports use clear, plausible and relatively straightforward scenarios consisting of a core projection alongside "no real growth" and "high migration variant" scenarios tailored to local dynamics – see, for example, Dumfries and Galloway, Moray and Dundee. Thirdly, it is common for planning authorities to use local data to estimate backlog need. Several authorities conduct local surveys of need or use administrative data to estimate backlog need (e.g. data from local authority inspections).

The variation in study dates, methods, scenarios and inputs means that any attempt to create a national level of estimate of housing need from bottom-up studies would be rendered meaningless.

5.5. Process consistency

Numerous studies are undertaken as collaborations between several local authorities. There is consistent, shared oversight of these studies. The majority of analyses are conducted in-house with the use of consultants less prominent than was the case at the time of our 2020 report. The reports show due attention has been paid to quality assurance and consideration is generally given to study and data limitations. Formal sensitivity analysis is rare – notable exceptions being the most recent Dumfries and Galloway and Highland HNDAs. Formal sensitivity analysis is an area where more could be done to ensure estimates are robust and credible.

5.6. Overview and expert views

As we note in the methods section, the research team undertook a range of stakeholder interviews. These interviews were used, in part, to help assess the credibility, reliability and use of existing needs assessments. When taken together with the document analysis above, some broad conclusions can be drawn about the existing needs assessment and the processes by which they have been generated.

- The headline observations are:
- HNDAs are well understood and adopt a broadly standardised approach; they produce the required outputs with some disaggregation for specialist need;
- There is some evidence of good practice in relation to methods (e.g. the use of sensitivity testing in places) and the process of undertaking needs assessment (e.g. in terms of effective partnership working, quality assurance procedures. etc);

Stakeholders value the usage of national datasets for drivers of need such as household projections in the HNDA tool, which are seen as providing *"rigour and reliability"* (local authority employee), and the HNDA tool has a value for money justification in that it reduces the requirement for primary data collection as local authorities face funding pressures.

- Interviewees also raised the following points in relation to the HNDA process:
- There is a sense amongst expert analysts and users that HNDAs are not considered to be the definitive evidence base and that, while generally well aligned to guidance, they are thought to suffer from general data limitations and from a lack of timeliness;
- Although the CHMA tool is widely used in the HNDA process and thought to be a source of consistency and clarity, there is a widely held view that the HoTOC measure represents a lower bound on backlog need; one interviewee suggested the approach to backlog need in successive HNDAs has resulted in *"tightening the definition"* to the extent that some local authorities adopted MATHLR targets lower than their current completion rates whilst also declaring a housing emergency, which for the interviewee suggested *"something's wrong in the system"* (market analyst);
- Some interviewees argued the provision of the HNDA tool has led to a reduction in local insight by making localised surveys less common;
- It was also noted that HNDAs suffer from lack of timeliness and, as many were conducted pre-2022, they fail to capture many of key trends and challenges facing the housing system as well as might be hoped; one of our interviewees explained their most recent HNDA had been delayed because they had decided to wait for the consultation and implementation of NPF4 to be concluded first; and the HNDA tool itself is in need of a refresh;

> Some stakeholders in rural areas argued that the HNDA process underestimates housing need in these communities, primarily due to the assumption of population decline; HNDA evidence can contradict other local evidence such as that produced in local housing demand surveys, which interviewees reported often identify higher demand for products such as mid-market rent among younger (often concealed) households than HNDAs:

"

[We work in] communities where nothing is shown on any formal assessment of need, but you step into those communities and there seems to be a huge need and demand.

Economic and community development agency employee

"

We're seeing huge, localised demand. And local housing demand surveys show a similar pattern of demand - shortfall in PRS, shortfall in affordable housing, shortfall in family sized accommodation. But that needs to be supported at programme level.

Community group representative

6. Demographic, economic and housing trends

This chapter sets out the demographic and housing context for the assessment of affordable housing need that follows. It presents projections on household growth alongside evidence of recent changes in housing provision.

The context is provided at both the national and, where appropriate, the local authority level to illustrate national trends and some of the variation across the country. Particular attention is paid to the datasets and trends which underpin the key components of the model utilised in the following chapter, and trends which help explain the level of affordable housing need. The components considered here are:

- Future household projections, which are considered as a driver of changes in housing demand. Future household projections were modelled by the project team for the purposes of the analysis (see below for methodology)
- House price and rental price changes are analysed to inform the relationship between market demand and supply and housing market pressure
- Wage and affordability trends are presented to provide a more detailed view of the relationship between household economic changes and house price trends
- Homelessness cases are analysed as homelessness is a major contributing factor to the demand for affordable housing in Scotland
- Temporary accommodation usage is explored as it is an important indicator of affordable housing need, and a growing source of expenditure for local and national government
- Trends in the rate of demolitions, lettings and new affordable supply are analysed to illustrate changes occurring within the social housing stock

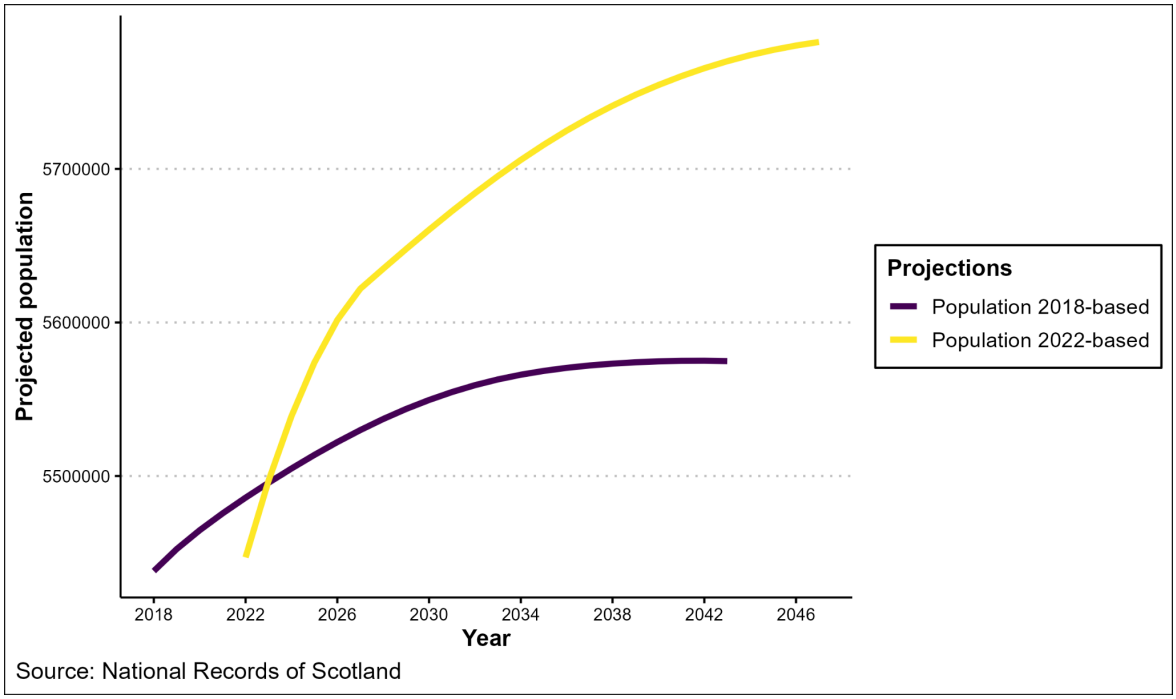
We conclude this chapter with an assessment of historic AHSP delivery against past estimates of affordable housing need, before outlining the key lessons from this chapter for our modelling of need.

6.1. Household projections and population structure

The overall level of demand for housing in Scotland is partly contingent on the population and number of households. The National Record of Scotland's (NRS) household projections for local authorities were used as the data source for newly forming households in the previous reports. But the most recently released household projections are now dated as they are based upon the 2018-based population projections, which have been superseded by 2022-based population projections. Updated household projections per local authority will not be available until 2026. Moreover, the 2022-based population projections for Scotland suggested the 2018-projections underestimated the rate of population growth, as shown by Figure

6.1. Consequently, using the 2018-based household projections would likely result in an underestimate of household growth and newly arising need. But it also remains uncertain, due to lack of available data, how the population growth forecast in the 2022-projections will be distributed across local authorities and translate into household numbers. Therefore, assuming the increase in projected population growth will be distributed evenly across Scotland could introduce error to our analysis.

Figure 6.1. Comparison of population growth projections



Source: National Records of Scotland

To address these issues, we modelled our own local authority household projections. We projected local authority household numbers for 2026-2031 through the following procedure:

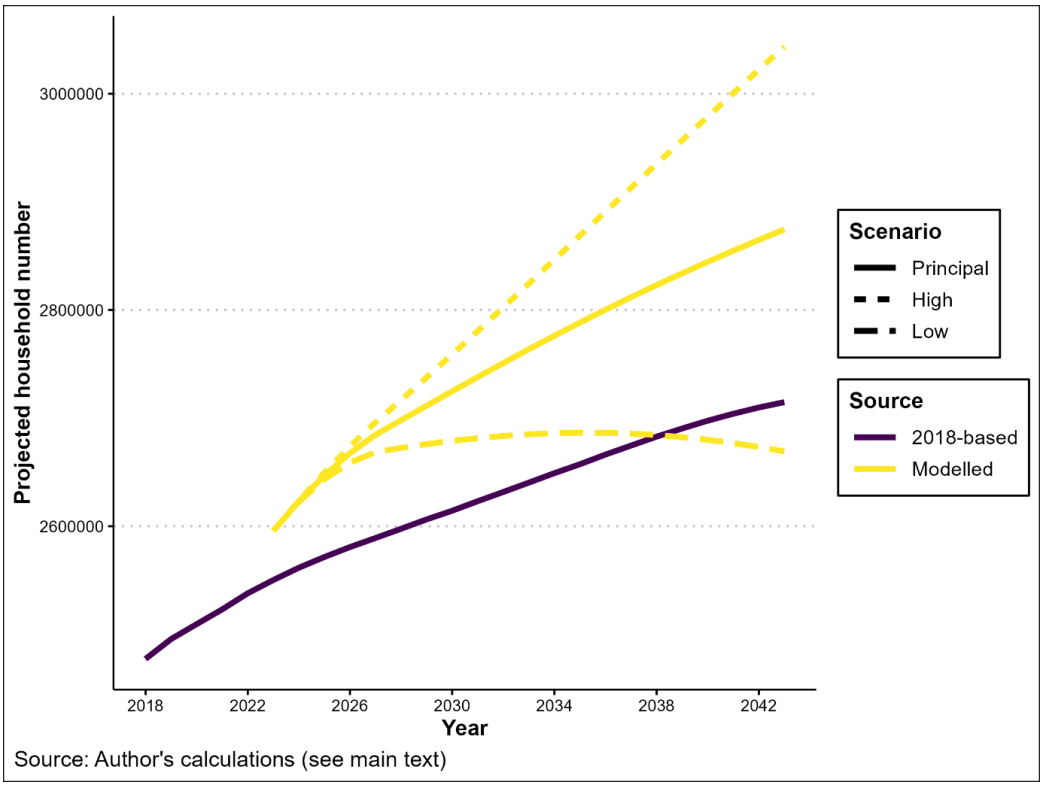
1. Starting with the total Scottish population, assume the rate and sources of population growth (e.g. natural change, net international migration, net migration from the UK) will equal the 2022-based NRS population projections
2. The sources of population growth will be distributed across local authorities proportionate to their growth in the NRS 2023 population estimates. For example, in 2023 19% of the growth in the Scottish population via migration from the UK occurred in the City of Edinburgh. Therefore, we assume that City of Edinburgh will continue to contribute 19% of any growth in the Scottish population via migration from the UK
3. Net internal migration between local authorities will follow its long-term trend rate, which we estimate using a growth-curve model and data on local authority net migration from 2015-2022
4. Average household size in each local authority will follow its current long-term trend rate, which we estimate using the same method as NRS in their household projections – a two-point exponential model applied to data from the 2011 and 2022 censuses
5. The projected number of households is derived by dividing the projected population of each local authority (i.e. the output of steps 1 to 3) by the projected average household size (i.e. the output of step 4)

To illustrate the sensitivity of these estimates, we repeat steps one-five above for both a high and low population growth scenario. In these scenarios step one begins with NRS' high and low population growth projections, respectively. And all other steps in the process remain unchanged. In the case of NRS' high population growth projection, each of the contributing factors to population growth are assumed to be at their upper bound. While for the low growth projection these factors are at their lower bound.

Due to limitations in the data, there is inherent uncertainty to our modelled household projections and associated challenges in validating them. However, the results are broadly aligned with intuitive expectations as to how household growth should be distributed across local authorities. For example, the largest increases relative to the 2018-based household projections occur in local authorities experiencing recent population growth e.g. Aberdeen City, City of Edinburgh, Fife, and Glasgow City.

Figure 6.2 displays our modelled household projections using this approach, alongside the upper and lower bounds based upon high and low population projections. For comparison Figure 6.2 also shows the principal scenario household growth projection from the 2018-based NRS projections. Figure 6.2 shows that in all three scenarios, over the course of the next Scottish Parliament, the projected number of households is expected to be higher than the number of households in the 2018-based principal scenario. Although over the very long-term the low-growth scenario projects fewer households than the 2018-based principal scenario, as it assumes a declining population over time.

Figure 6.2. Household number projections by scenario

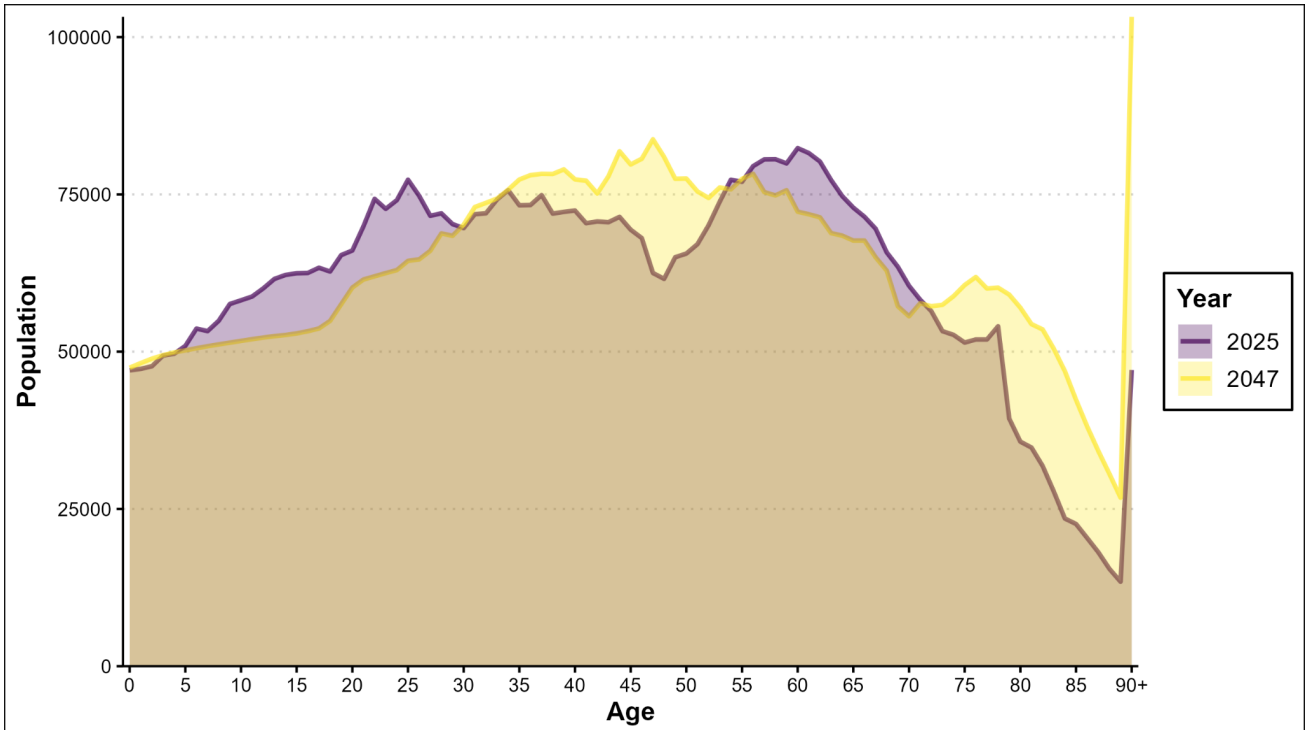


Source: Author's calculations (see main text)

The national picture in Figure 6.2 does mask variation between local authorities. The highest household growth in absolute terms is projected to occur in Glasgow City over the next five years. The local authorities with highest household growth in proportionate terms over the next five years are Midlothian, West Lothian and Renfrewshire, where the number of households is projected to grow by 4.3-6.0%.

In addition to growing in size, the population is projected to age over time. This will contribute to reducing the average household size as people live longer in single adult households. Furthermore, it will shift the nature of housing need, with more specialist older people's accommodation required to manage the populations' care needs. Existing homes will also require adaptations to enable households to age-in-place where appropriate. Figure 6.3 shows the projected change in age structure of Scotland between 2025 and 2047, with a dramatic increase occurring in the number of people aged 90 or more. The number of people aged 70 or more is expected to increase by 37.2% during this period, increasing as a proportion of the total population from 14.7% to 19.5%. Although the population is due to age across all areas of Scotland, our interviewees working in rural areas reported that the pace of population ageing is projected to be faster in predominantly rural authorities due to outward migration of younger households. And that local housing demand surveys tend to find an undersupply of single storey and adapted homes in rural areas.

Figure 6.3. Current and projected population structure

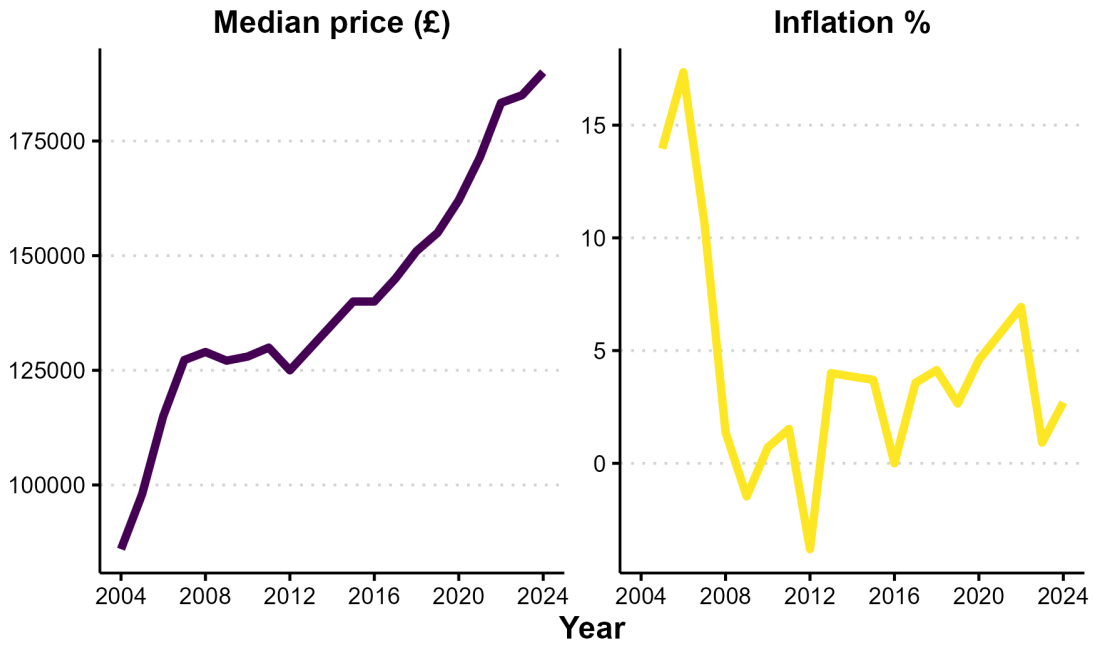


Source: National Records of Scotland 2022-based population projections - principal projection

6.2. House price and rent changes

House price changes are a critical contributor to affordable housing need and a key indicator of housing market pressure. Figure 6.4 shows the median value of all residential market value property sales in Scotland by calendar year, as measured by Registers of Scotland (RoS) data, and annual price inflation using this measure. As they are an average of transactions, the data are sensitive to changes in the volume and composition of sales. Nonetheless, they suggest that the average price in Scotland has continued its long-term upward trajectory in recent years, including a period of continued growth throughout the pandemic. The rate of increase has declined slightly from 2022 onwards as inflationary pressure in the wider economy contributed to a contraction in mortgage lending.

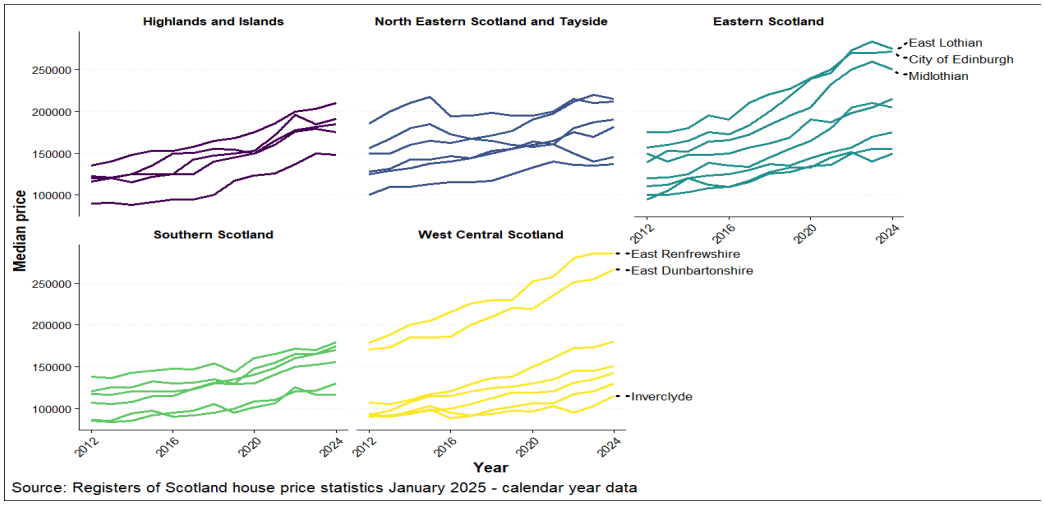
Figure 6.4. Median house price in Scotland and house price inflation 2004-2024



Source: Registers of Scotland house price statistics January 2025 - calendar year data

Again, the national picture obscures significant variation between local authorities. Figure 6.5 shows the calendar year median house price for each local authority from 2012 to 2024, again using RoS data. Figure 6.5 highlights the five local authorities with the highest median house prices, and the local authority with the lowest - Inverclyde. Figure 6.5 also disaggregates local authorities into the regional clusters used for this study (see chapter 7). There is substantial variation within clusters, particularly the West Central Scotland cluster. Median prices in 2024 range from £115,000 in Inverclyde to £285,000 in East Renfrewshire, compared to a Scotland median of £190,000.

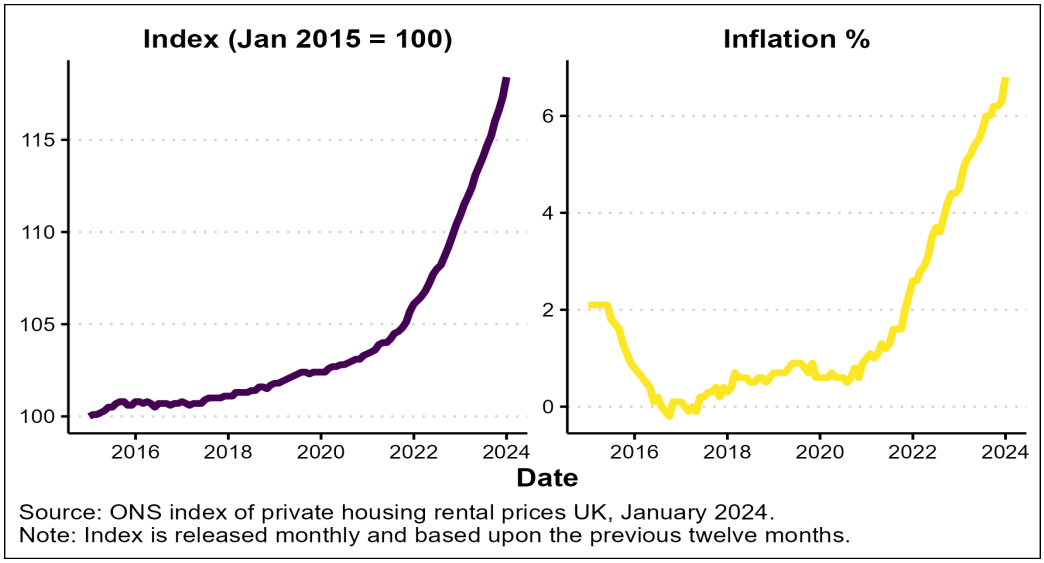
Figure 6.5. Median house price per local authority 2012-2024



Source: Registers of Scotland house price statistics January 2025 - calendar year data

Figure 6.6 shows rental price inflation and the value of the Office for National Statistics' (ONS) Index of Private Housing Rental Prices for Scotland between 2015 and 2024. Rental inflation rose steeply following the lifting of pandemic lockdowns to above 6% in the twelve months preceding January 2024. The ONS does not provide index values for each Scottish local authority, but it does provide values for the index for Broad Rental Market Areas (BRMAs). Since 2020 the highest twelve month increase in private rents occurred in Greater Glasgow, which peaked at a 20.9% increase in the twelve months preceding September 2023. This is followed by the Lothian BRMA (15.8% in the twelve months preceding April 2024), and the Argyll and Bute BRMA (15.6% in the twelve months preceding April 2024). Looking specifically at the percentage change in the rental price of a two-bed between January 2020 and January 2025, West Dunbartonshire has experienced the highest percentage price increase (39.8%), whereas Dumfries and Galloway has experienced the lowest (13.6%).

Figure 6.6. Index of private rental prices in Scotland 2015-2024



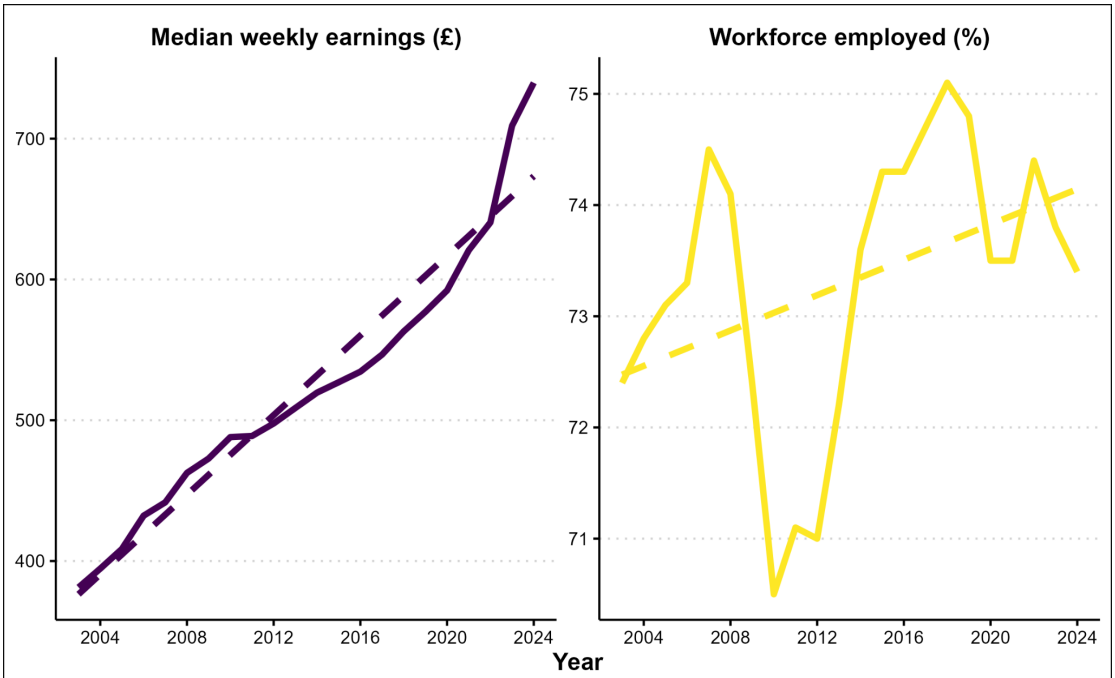
Source: ONS index of private housing rental prices UK, January 2024.
Note: Index is released monthly and based upon the previous twelve months.

6.3. Earnings and affordability

Affordability is determined by the interaction of local prices with factors such as the distribution of local incomes and savings, and the lending environment. Data on the distribution of incomes within local authorities is scarce and in our modelling we rely upon a modelled distribution produced for the CHMA (see chapters 5 and 7). Although earnings are an imperfect proxy given incomes will incorporate sources such as capital gains and social security payments, earnings remain a key source of income for the majority of households and can be used to illustrate how housing affordability varies across areas, as well as providing general information on economic conditions.

The Annual Survey of Hours and Earnings (ASHE) provides accessible data on median gross earnings for both Scotland as a whole and per local authority. Figure 6.7 shows the change in median gross weekly earnings for Scotland over time, alongside the percentage of the workforce employed during the same period. The trend rate for each statistic is also plotted as a dashed line. The left panel in Figure 6.7 shows that gross wages have continued their upward trend and the rate of growth has increased in recent years, although this was in response to inflationary pressure and therefore real wage increases have been significantly lower. By contrast, the percentage of the workforce employed has fluctuated to a greater extent over time and has fallen by a percentage point from 74.4% in 2022 to 73.4% in 2024.

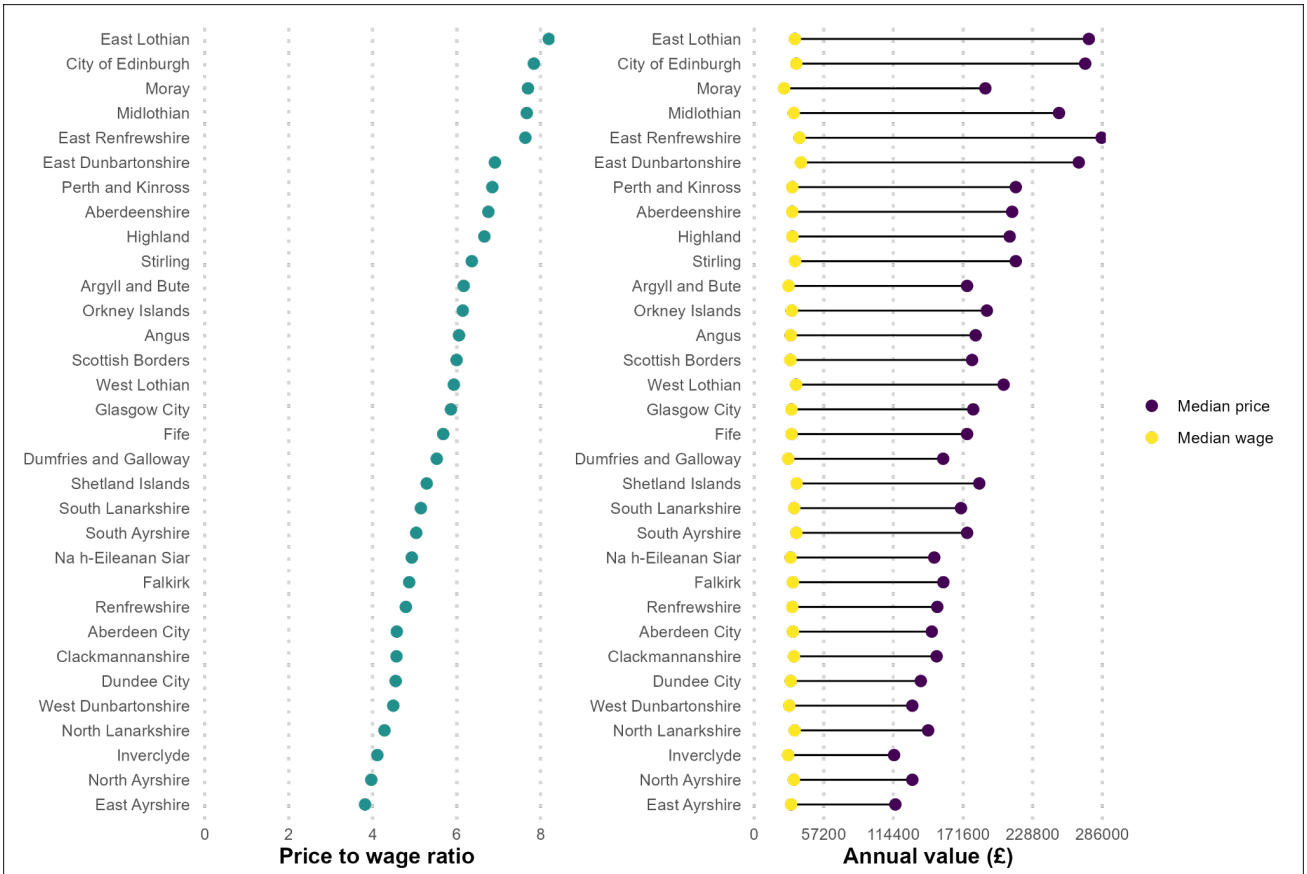
Figure 6.7. Median weekly earnings and percentage workforce employed 2004-2024



Sources: Annual Survey of Hours and Earnings, Labour Force Survey Indicators

As with house prices, median earnings vary across local authorities, although to a lesser extent. The left panel in Figure 6.8 displays the ratio of median earnings to median prices per local authority. And in the right panel it displays the values of median wages and median prices per local authority (median earnings are gross annual earnings, and prices are based upon all transactions in a calendar year in 2024). Figure 6.8 shows that variation in house prices has a stronger influence on affordability than variation in earnings. The areas with highest house prices tend to have the highest ratio of prices to earnings, for example East Lothian, City of Edinburgh, Midlothian, East Renfrewshire and East Dunbartonshire. One deviation from this trend is Moray, which has the third highest ratio of earnings to prices but has lower median prices than the five aforementioned authorities. Inverclyde has the lowest median price of all authorities, but the third lowest ratio of earnings to prices as its median earnings are lower than North Ayrshire and East Ayrshire.

Figure 6.8. Ratio of median annual earnings to median prices 2024



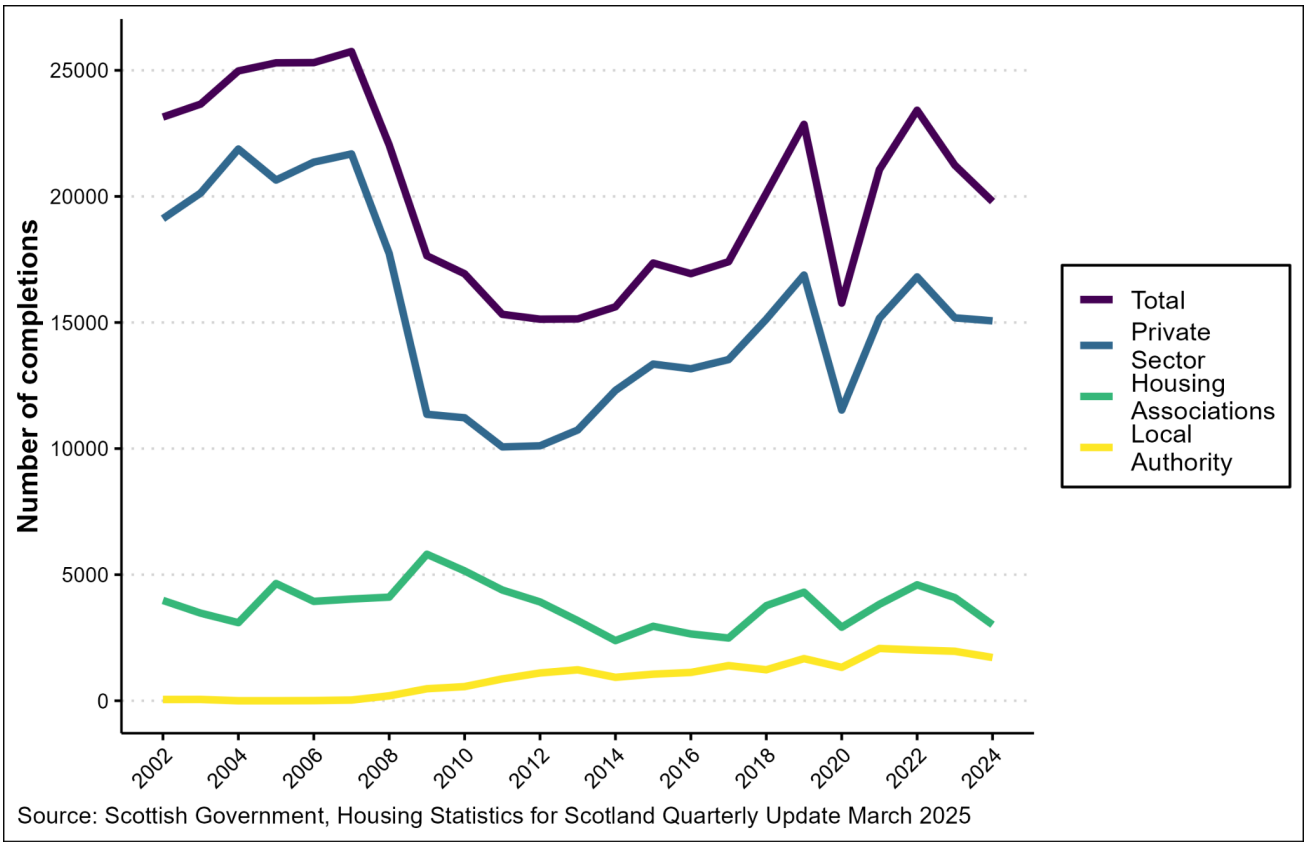
Sources: Annual Survey of Hours and Earnings 2024, Registers of Scotland house price statistics January 2025

6.4. Supply of new build social rented sector dwellings

The size of the existing SRS influences the demand for new affordable housing. A larger existing stock can meet the needs of more households through current lettings, thereby reducing the need for new homes. Relative to the rest of the UK, Scotland has historically had a larger SRS as a proportion of the population (Marshall et al., 2023). Although the size of the SRS has declined over the long-term, the Scottish Government has sought to protect social housing through the abolition of the Right to Buy, and to expand the sector through increased emphasis on social housing within AHSP (ibid.). Past construction trends also influence the need for new homes, as failing to meet historic targets theoretically contributes to a growing shortfall of backlog need (see section below on historic AHSP delivery against estimated need).

Figure 6.9 displays historic trends in housing construction across all sectors in Scotland. Figure 6.9 shows the total number of completions per calendar year, and completions disaggregated by provider i.e. private sector, housing associations and local authorities. With the exception of a temporary fall in 2020 due to the pandemic, total completions in Scotland over the past five years have remained above their historic low in the early 2010s. However, there has been a fall in total completions in the past two calendar years. Completions fell to below 20,000 in 2024 for the first time since 2020. Housing association completions have fluctuated less than total completions but also fell from 4,597 in 2022 to 3,016 in 2024. Local authorities experienced the smallest fall between 2022 and 2024, falling from 2,012 to 1,715. But local authorities also contribute the smallest total number of completions among providers.

Figure 6.9. Number of new dwellings completed per calendar year in Scotland

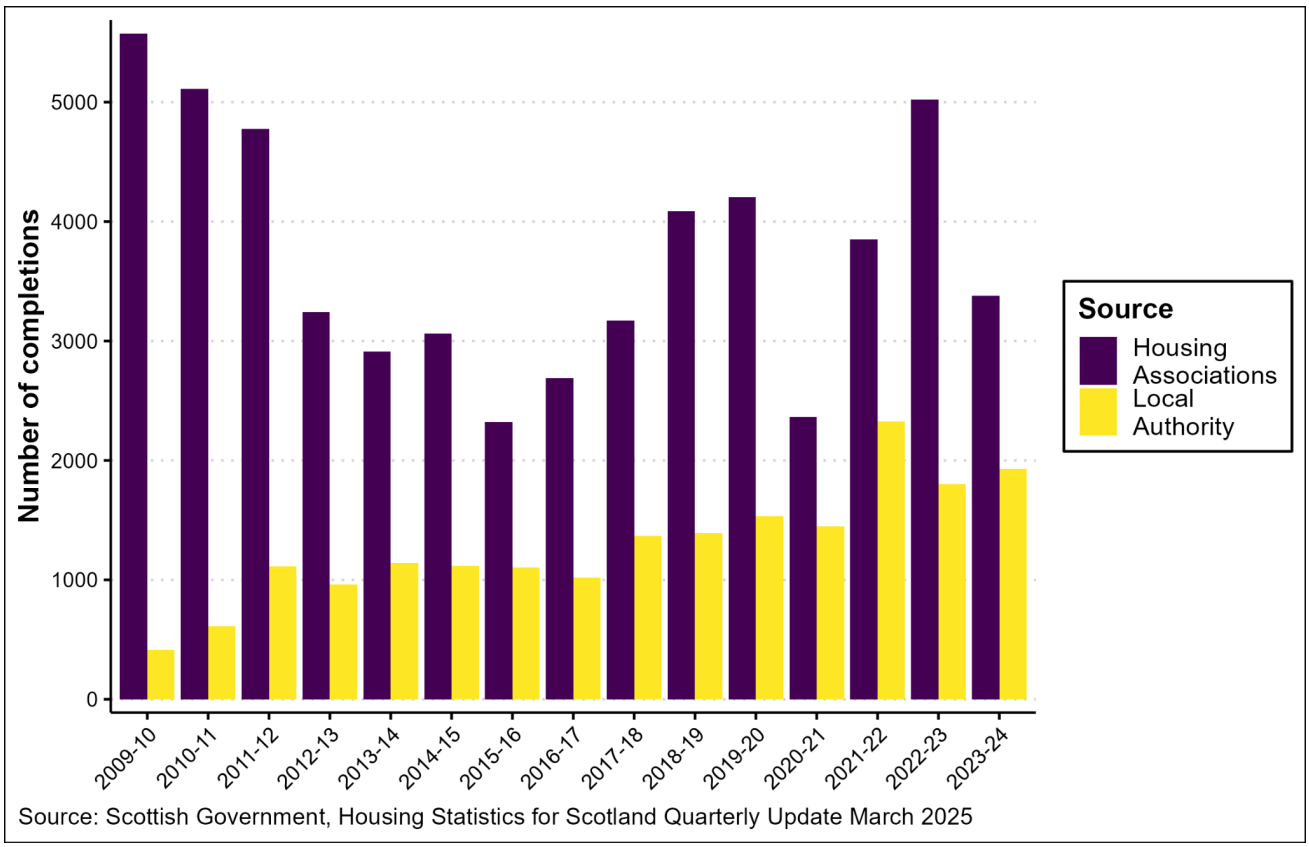


Source: Scottish Government, Housing Statistics for Scotland Quarterly Update March 2025

Figure 6.10 focuses on completions of new dwellings by social housing providers only, by financial year. It shows that over time local authority completions have increased, albeit with a decrease in the past two financial years from its peak in 2021/22. By contrast, housing association completions have remained higher than local authority delivery but have also fluctuated more. Housing association completions reached over 5,000 in 2022/23 but fell in 2023/24 to 3,378. Local authority completions as a proportion of housing association completions were around 60% between 2020/21 and 2023/24.

In terms of geographical variation, in 2023/24 Glasgow City delivered the highest number of new homes by housing associations, accounting for 16.5% of all housing association completions. Fife had the second highest delivery by housing associations, accounting for 9.1%. The areas with the highest delivery by local authorities were Aberdeen City and North Lanarkshire, accounting for 20.1% and 13.1% of all local authority completions respectively.

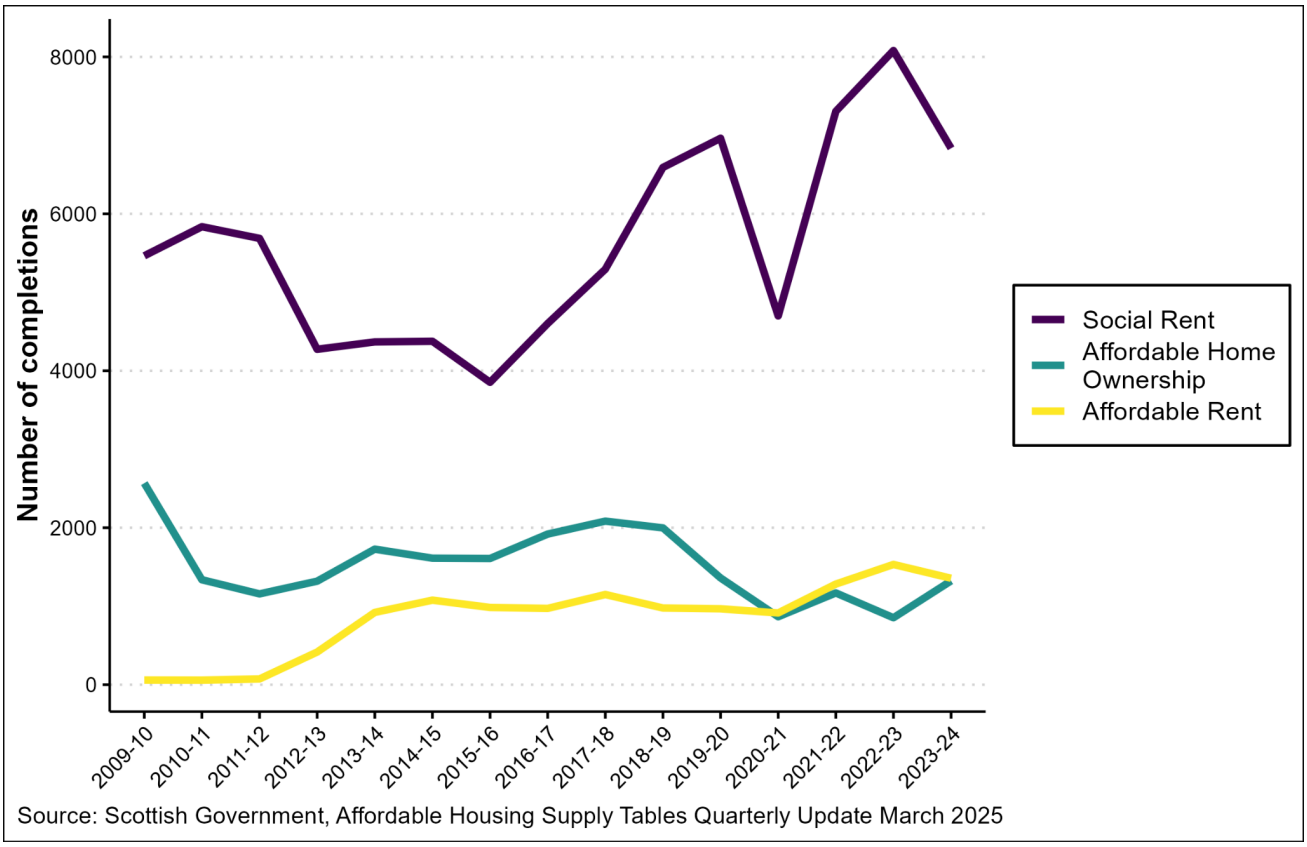
Figure 6.10. Supply of new dwellings by social housing providers per financial year



Source: Scottish Government, Housing Statistics for Scotland Quarterly Update March 2025

As discussed in chapter 2, affordable housing can be disaggregated into different tenures that vary in terms of their affordability and the required level of government subsidy. Figure 6.11 displays completions by affordable housing tenure per financial year in Scotland. The Government's emphasis on social renting has been reflected in a general increase from a low point in 2015/16 (with the exception of 2020). Social rented completions reached a peak of 8,081 in 2022/23 but fell to 6,835 in 2023/24. Figure 6.11 also shows that in recent years AHSP has delivered a higher number of affordable rent (i.e. mid-market rent) homes relative to affordable homeownership.

Figure 6.11. Supply of Affordable Housing Supply Programme dwellings by type and financial year

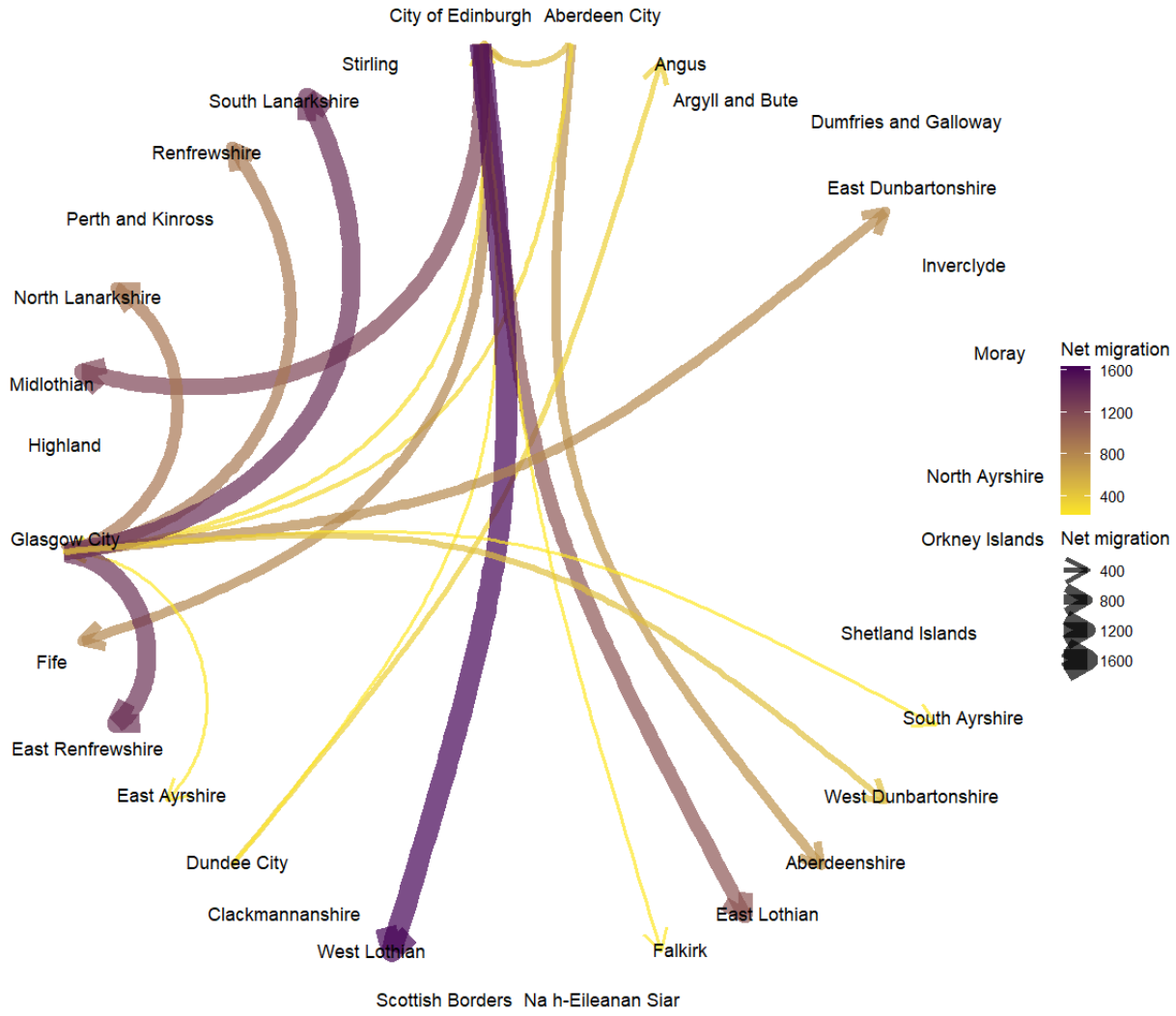


6.5. Population shifts

Affordable housing need will be influenced by the rate at which households move between local authorities in Scotland, and the location of origin and destination authorities. Our model assumes that need will be met within the local authority in which it presents and moves between authorities will influence need through its effect on expected household growth.

Figure 6.12 displays net internal migration between local authorities over a 12-month period ending June 2023. The colour and size of the bars are determined by the total number of people moving between authorities, and the arrow displays the direction of net migration. Although there will be moves in both directions between authorities, Figure 6.12 displays only the net figure i.e. the difference between population shifts in both directions for a pair of authorities. Furthermore, Figure 6.12 only displays the relationship between local authorities where net internal migration is at least 200 people or more. While there are population shifts to and from authorities with no connections in Figure 6.12, the net figure with all other authorities falls below this absolute threshold, either because few moves occur or because moves between authorities largely cancel out.

Figure 6.12. Population shifts between local authorities year ending June 2023



Source: NRS, Migration flows between council areas

Figure 6.12 shows that the main population shifts within Scotland are people moving from City of Edinburgh or Glasgow City to neighbouring authorities. Moves from City of Edinburgh mainly flow to West Lothian, East Lothian, Midlothian, Fife and Falkirk. Moves from Glasgow City mostly flow to the wider Greater Glasgow region, apart from Inverclyde. Elsewhere, moves out of Aberdeen City mostly flow into Aberdeenshire, but also Glasgow City and City of Edinburgh to a lesser extent. Moves from Dundee City predominantly flow into Angus, but also a small net figure flows into City of Edinburgh. Net population shifts from and to Highlands and Islands authorities are largely below the net 200 people threshold, and the same is true for Southern Scotland (i.e. Scottish Borders, Dumfries and Galloway). Stirling stands out as a centrally located authority with no connections in Figure 6.12, but this is because outflows from Stirling - largely to Clackmannanshire, Falkirk, City of Edinburgh and Glasgow City - are roughly matched by inflows.

6.6. Homelessness

Homelessness is a significant source of demand for affordable housing in Scotland. In our modelling the total number of homeless households requiring housing over the next five years comprises: households that are currently homeless (or waiting to be assessed as homeless); and households that will become homeless during the next five years (see chapter 7). Total homelessness is therefore both a stock and flow cause of affordable housing demand. Figure 6.13 displays the number of applications for homelessness made in Scotland between 2002/03 and 2023/24, and the number of households in temporary accommodation at the end of March in each year. Although homelessness applications remain below their historic peak of 2005/06, they have also continued their general trend of increase since the 2020 report, notwithstanding a short dip during the pandemic. The number of households in temporary accommodation has increased over time, reaching its current peak at 16,300 households in 2024.

Figure 6.13. Homelessness applications and households in temporary accommodation in Scotland 2002/03-2023/24

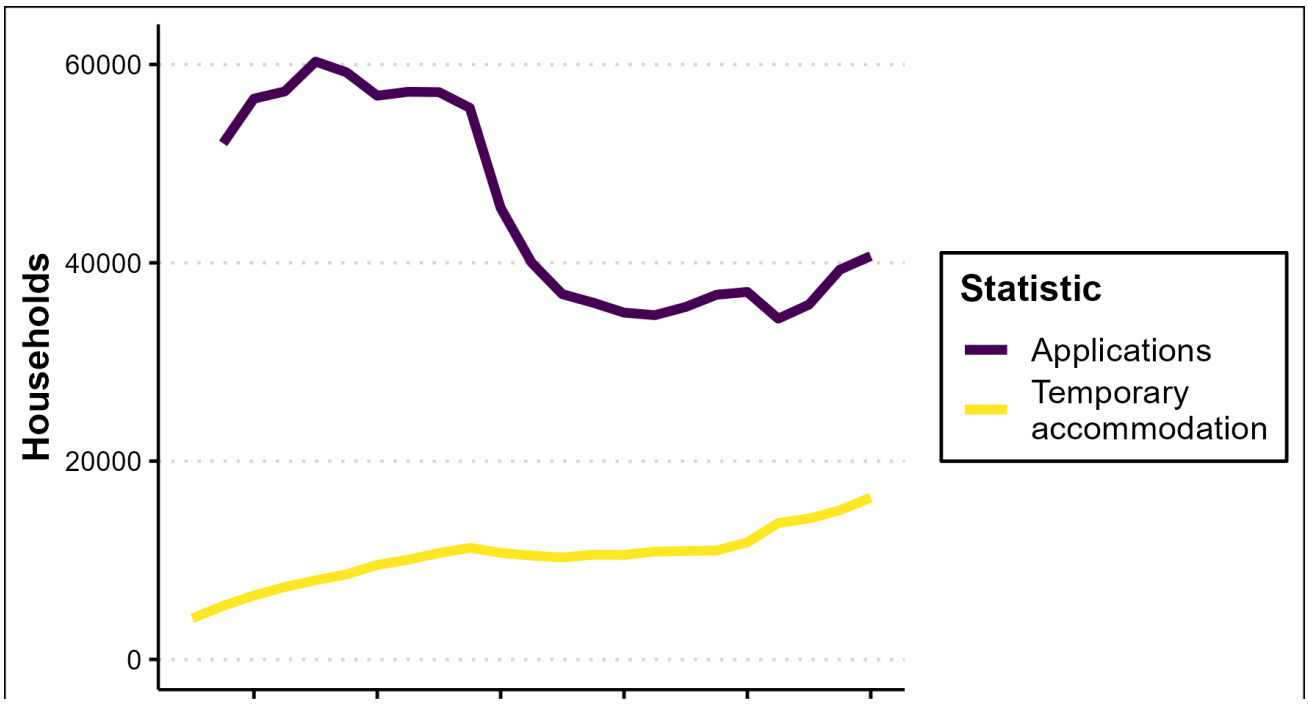
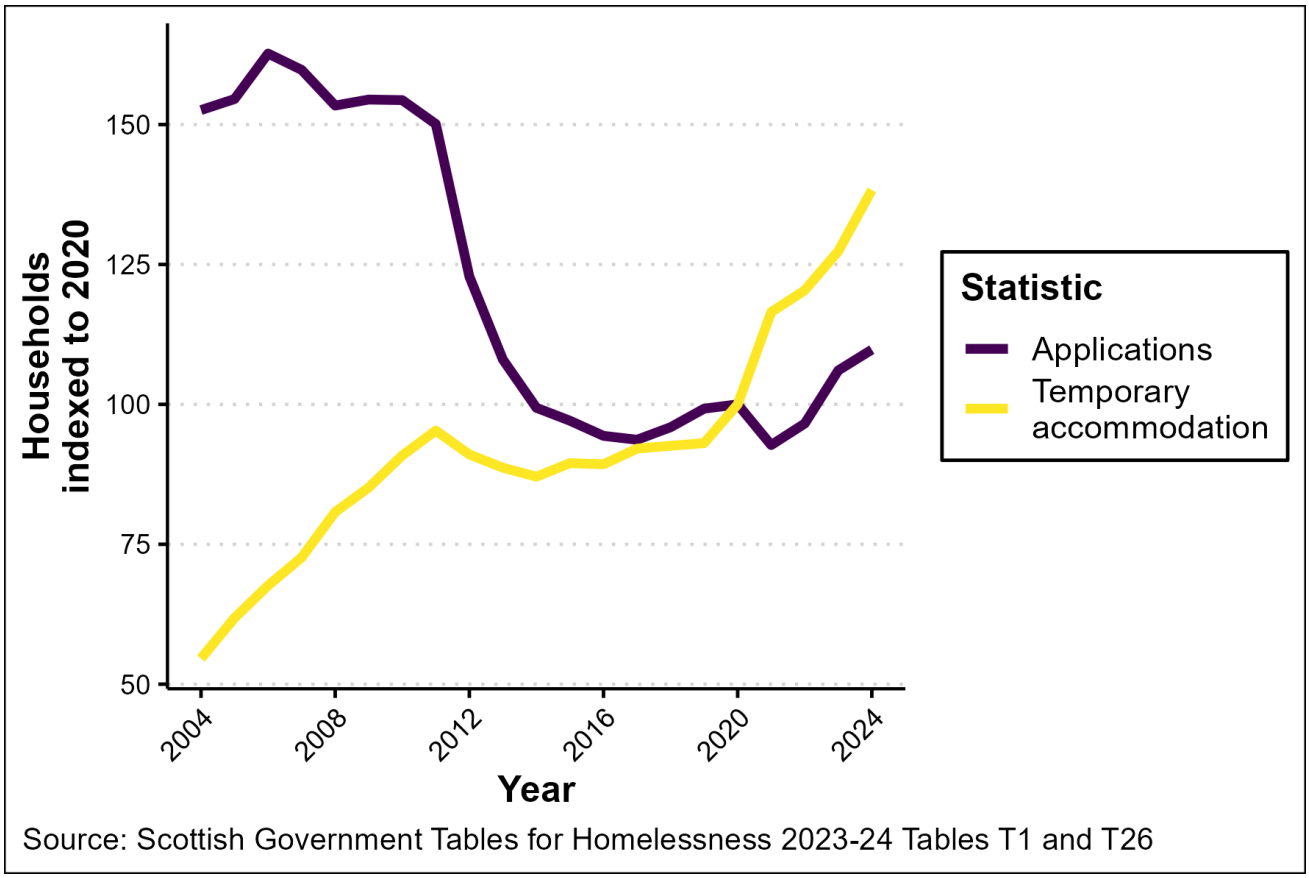


Figure 6.14 gives a sense of relative change for both homelessness applications and temporary accommodation usage since the last report, as it indexes both statistics to their level in 2020. Figure 6.14 shows that temporary accommodation usage has increased by a greater relative amount since 2020 than homelessness applications. Temporary accommodation usage has increased by 38.3% between 2020 and 2024 across Scotland, whereas the number of applications has increased by 9.8% in the same period.

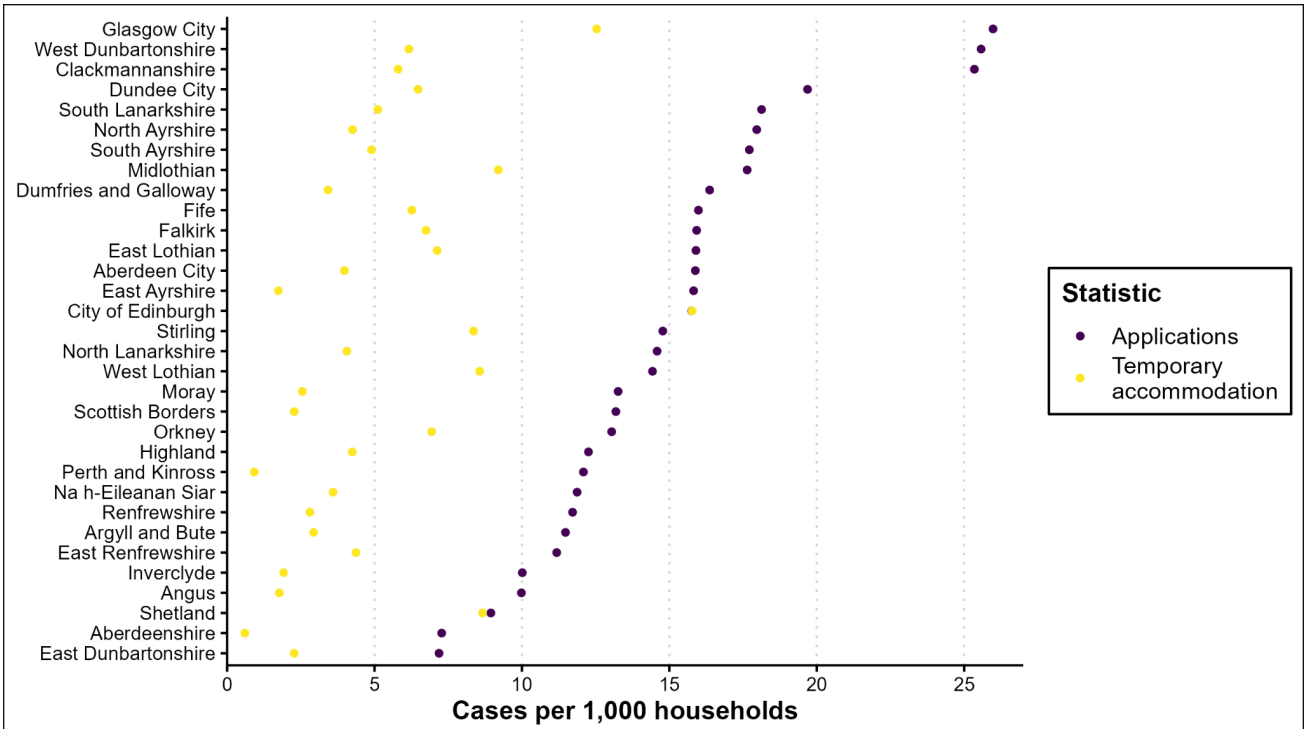
Figure 6.14. Homelessness applications and households in temporary accommodation in Scotland 2002/03-2023/24, indexed to 2020



Source: Scottish Government Tables for Homelessness 2023-24 Tables T1 and T26

Figure 6.15 shows the number of homelessness applications and households in temporary accommodation per 1,000 households for the end of 2023/24, disaggregated by local authority. Figure 6.15 shows that the highest number of homelessness applications per 1,000 households is in Glasgow City. But the highest number of households in temporary accommodation per 1,000 households is in the City of Edinburgh. City of Edinburgh has a rate of temporary accommodation usage almost identical to its homelessness applications, per 1,000 households, and so the points overlap in Figure 6.15.

Figure 6.15. Homelessness applications and households in temporary accommodation per 1,000 households in 2023/24 by local authority

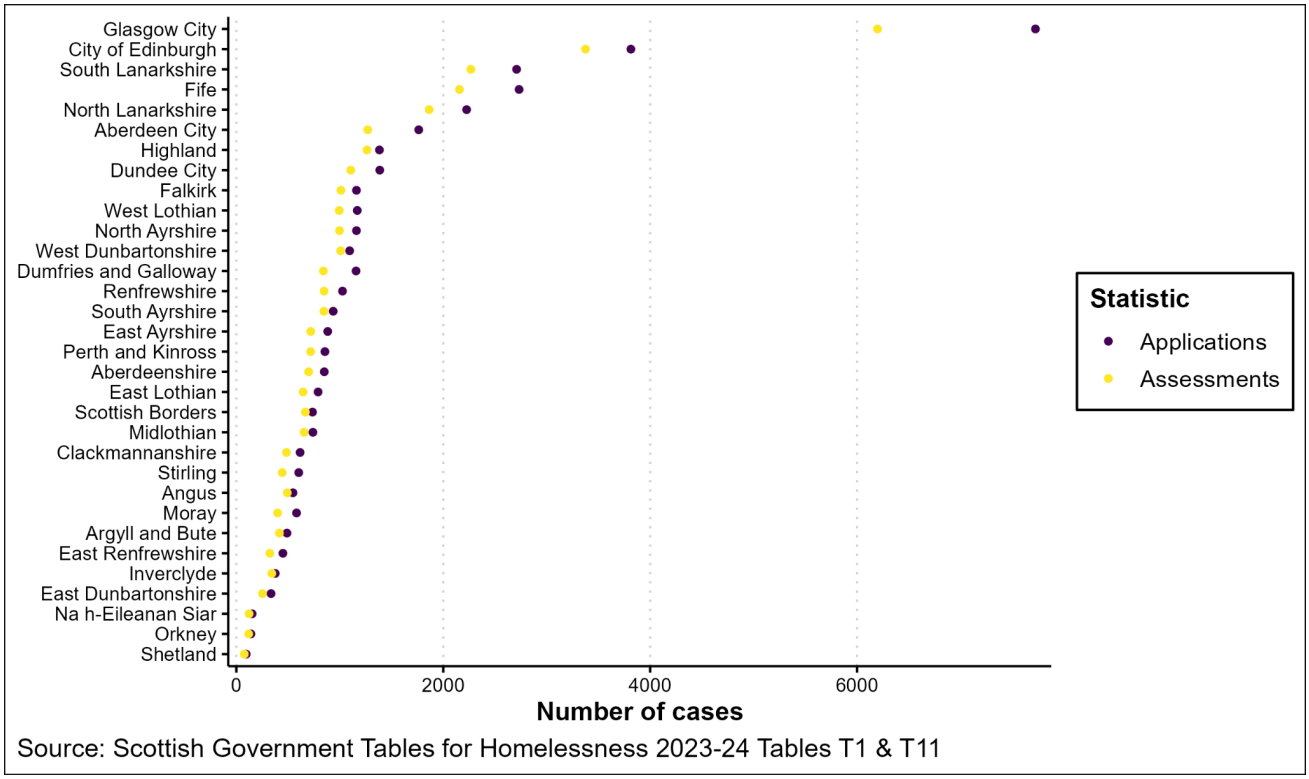


Source: Scottish Government Tables for Homelessness 2023-24 Table T1 & NRS Households 2023

Figure 6.16 displays the number of homelessness applications and homelessness assessments per local authority in 2023/24. Homelessness applications and assessments will diverge as not all applications will be assessed in the same financial year in which they are received, plus it is possible for households to make multiple applications in a year. As with the 2020 report, Glasgow City had the highest total number of applications and assessments, whilst the Shetland Islands had the least of both. Although not displayed in Figure 6.16, homelessness applications by people granted refugee status or leave to remain rose by 74.23% between 2022/23 and 2023/24, increasing from 2,235 to 4,020 across Scotland. The majority of this increase occurred in Glasgow City, where applications by people granted refugee status or leave to remain almost doubled (Scottish Government, 2024d).

As with the 2020 report, Glasgow City had the highest total number of applications and assessments, whilst the Shetland Islands had the least of both.

Figure 6.16. Homelessness applications and assessments in 2023/24 by local authority



Source: Scottish Government Tables for Homelessness 2023-24 Tables T1 & T11

6.7. Supply of existing social housing stock

A household's need for affordable housing can either be met through a new dwelling or by occupying a vacant existing affordable home. Therefore, changes in the size of the existing SRS, or changes in the number of homes becoming vacant, can affect the gross requirement for new homes. Previous iterations of this research reported on the rate of Right to Buy sales. But as Right to Buy ceased in Scotland in 2016 it is not included in this report.

Figure 6.17 shows the number of demolitions reported in both the social and private sectors by financial year. Figure 6.17 shows the total number of demolitions in 2023/24 was reported to be 1,061, which is far below its historic high from the early 2000s, and below the figure of 1,194 in 2019/20 at the time of the previous report. Nonetheless, local authority demolitions constitute the majority of total demolitions. Local authority demolitions have increased year-on-year from 2020/21 to 2023/24 but remain low by historical standards.

Figure 6.17. Demolitions of housing stock per financial year

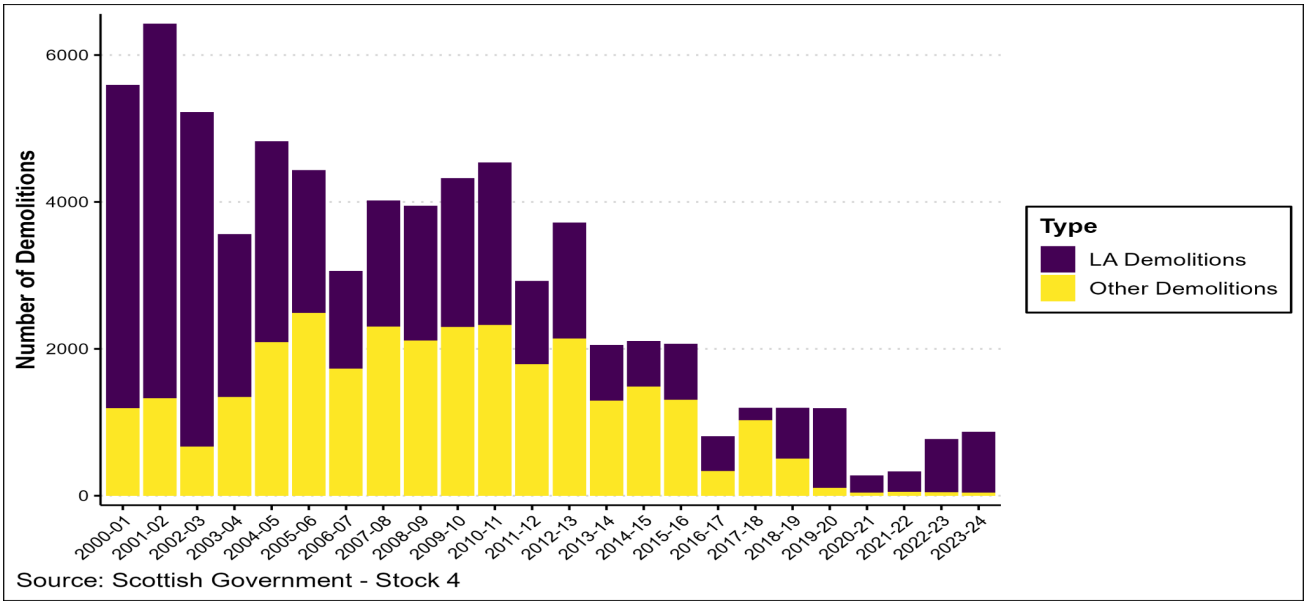
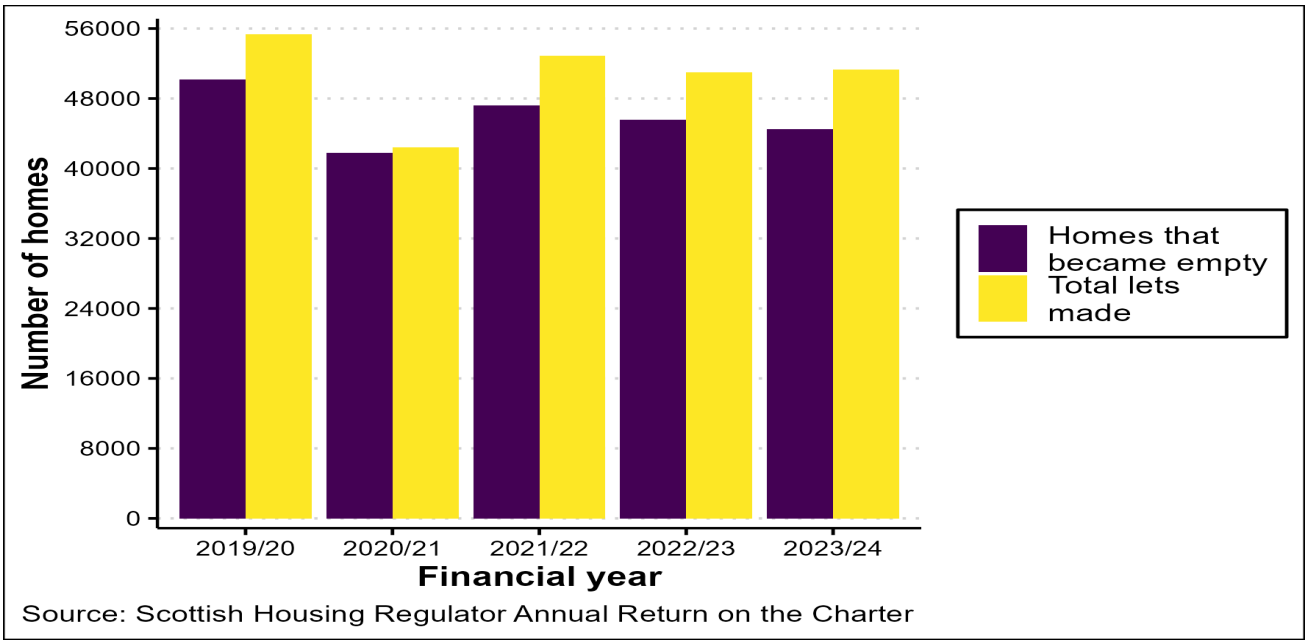


Figure 6.18 shows the number of annual social rented lets for a five-year period and the number of social homes becoming empty. Both the number of lets and the number of homes becoming empty have fallen from their pre-pandemic level in 2019/20. The number of social housing lets was roughly 4,000 homes lower in 2023/24 than in 2019/20. In chapter 7 and the Appendix we provide further analysis on the drivers of this reduction in social housing lets. Our analysis suggests the reduction in the number of homes becoming empty has had a much stronger effect on the number of lets than alternative factors e.g. the length of time properties are empty before being re-let.

Figure 6.18. Lettings activity in the social housing sector 2019/20-2023/24

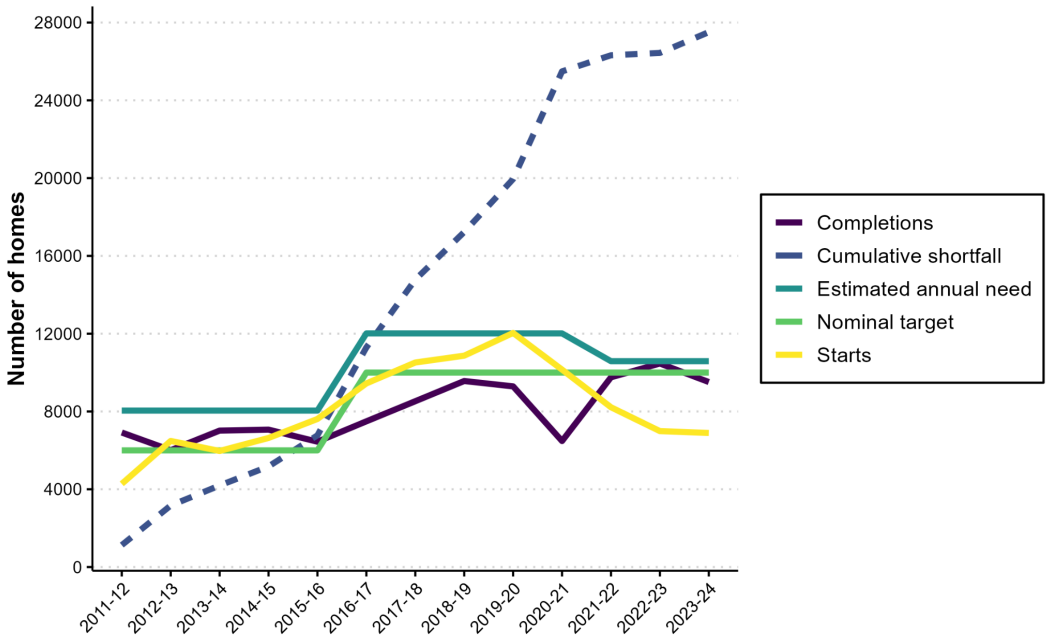


6.8. Historic AHSP delivery against estimated need

Meeting affordable housing need in Scotland requires understanding a dynamic system in which the backlog of unmet need is cumulative for each successive year where supply fails to meet need. It is common in the HNDA process to allow for five years to clear backlog need, for instance accommodating the existing homeless population, and both this report and previous research follows this convention (Bramley et al., 2006). Yet any programme which does not deliver the required quantum of new affordable housing will allow the backlog to grow. Furthermore, if new supply is also unable to meet the newly arising needs resulting from demographic growth in households and worsening affordability in the private market, this will further compound the backlog of need carried forward each year.

Figure 6.19 shows AHSP completions and starts against estimated need (ibid.; Powell et al., 2015; Dunning et al., 2020) and the nominal government target over time. Figure 6.19 also displays the cumulative shortfall of delivery against need, which as discussed above will compound backlog need. Until very recently, successive iterations of the AHSP have performed well on delivery, with levels of completions since 2011 often outstripping programme delivery targets, as well as specific tenurial targets for social rented housing. Over 33,000 completions were recorded in the 2011-16 programme period (noting that some will have been approved in previous years) against a target of 30,000. Moreover, the same period recorded over 22,500 social rented completions against a target of 20,000. Whilst the following programme, AHSP 2016-21, was affected by the onset of the COVID-19 pandemic (with declining completions rates particularly affecting 2020-21), in general the programme was building up to delivery against an increased nominal target of 10,000 homes per annum. The first three years of delivery against the 2021-32 strategy generally exceeded the nominal target of 10,000 homes per annum.

Figure 6.19. Cumulative shortfall based upon estimated need and AHSP delivery



Source: Author calculations using Scottish Government AHSP out-turn reports and the previous reports.

However, even in those years where the programme was delivering against expectations, the targets and funding available were not sufficient to totally clear the estimated backlog and arising needs. And so the cumulative size of the shortfall has grown each year. The rate of increase in this nominal cumulative shortfall was particularly marked in the early years of the 2016-21 programme, whilst delivery was still gearing up to the 10,000 homes p.a. target, and again during the COVID-19 disruption to new supply.

Since 2021, however, a slight reduction in the overall estimate of annual need combined with strong early delivery in the current 2021-32 strategy period, has slowed (but not eliminated) this rate of increase in the nominal shortfall implied by the gap between delivery and estimated needs. This high level of accumulated need is something we expect to be reflected in our current model (see chapter 7). Furthermore, AHSP is facing several significant challenges which are making delivery more challenging. First, significant increases in construction costs have eroded the value of the AHSP in real terms in recent years (Gibb et al., 2024). Although the grant funding benchmark rates have increased as a result, inflationary pressure has constrained delivery in recent years. The number of affordable housing starts fell in 2022/23 and 2023/24, which will likely flow through to reduced completions in subsequent years. A number of factors may also serve to further compound this issue in the near future, which we address in Chapter 8. Second, significant cuts to the annual AHSP investment in 2024-25 will doubtless have impacted delivery (ibid., see chapter 4). Fluctuations in the AHSP budget will have a further effect on delivery by affecting investor confidence in affordable housing supply, reflected in the HIT recommendation to provide a long-term commitment to a minimum level of funding for AHSP (HIT, 2025). Third, the HIT further suggests that the financial capacity of the social housing sector has been affected by general inflationary pressure and competing demands upon resources such as retrofit, which in turn impacts the ability of social landlords to deliver new supply. In addition, councils face the challenge of *"substantial growth in Housing Revenue Account (HRA) debt and servicing costs"* (ibid.: 13). These constraints on financial capacity were corroborated by our own interviews, with one respondent describing the *"perfect storm"* of the past few years as follows:

> The recovery period [from COVID-19] has been longer than we thought. And then you're hit with the cost-of-living crisis, and that's been another shock because you've got a construction crisis. Financially the operating environment has become more difficult for new supply.
>
> Local authority employee

Finally, whilst the present model should pick up the effects of recent factors driving up need, these factors will have been apparent for some time and in reality the estimates from the 2021 model of affordable housing need may have been outstripped by those factors in the latter years of the previous funding programme. Such factors include the cost-of-living crisis, a slowdown in lettings activity within the social and private rental sectors, and rising homelessness (Watts-Cobbe et al., 2024).

6.9. Summary

The trends presented in this chapter, alongside the evidence considered in the preceding chapters, can be summarised in several conclusions which inform our expectations for gross affordable housing need and the budgetary implications in the following chapters. In summary:

- We expect to see a growth in the level of backlog need compared to 2020, driven by rising and persistent levels of homelessness and the cumulative shortfall of past AHSP delivery relative to estimated need. Backlog need from homelessness is expected to be particularly acute in large urban areas with higher house prices.
- Both house and rental prices have increased over the past five years, but the rate of inflation has been higher within private rental housing. While growth in gross wages may have mitigated the pressure of price inflation to some extent, we should nonetheless expect long-term affordability pressure to contribute to need throughout 2026-31, especially among private renters.
- Affordable housing need will be driven, to an extent, by continued growth in the number of households. This should be more pronounced in larger urban areas.
- A trend towards lower turnover and fewer homes becoming empty in the social housing sector should reduce the capacity of the existing stock to meet need.
- Delivery of new affordable homes has fallen since 2022 and the capacity of the social landlord sector to increase new supply has been negatively impacted by construction inflation, budgetary fluctuations and competing demands upon resources. AHSP is therefore in need of urgent and sustained investment.

7. Assessment of affordable housing need in Scotland

7.1. Sub-Scotland Variation

Although the focus of the project is on affordable housing need in Scotland, there is sub-Scotland variation between local authorities and regions in terms of need. As the preceding chapter highlighted, local authorities vary in terms of house and rental prices, affordability, and homelessness. And this variation has important policy implications, for instance the level of funding required to deliver new homes in rural areas will be greater due to higher construction costs. To facilitate a Scotland-wide assessment whilst reflecting important sub-national variation we have grouped local authorities into five bespoke regional clusters. It is worth highlighting, however, that the clusters are for communication purposes only and have no implications for the estimates produced by the model.

The 2015 and 2020 reports grouped local authorities in terms of the similarity of their housing systems and demographic and economic trends. Yet feedback from stakeholders interviewed for this iteration of the research suggested that it was worth reviewing the clusters. Feedback raised regarding the 2020 clustering touched upon splitting the Ayrshire local authorities between three regions, and the non-contiguous borders of the regions which resulted in North Lanarkshire being split from the West Central region. Therefore, to update our clusters for this report we imposed the following constraints on our analysis:

- the clusters should contain contiguous authorities
- the clusters should not duplicate the boundaries of a real-world HNDA as the focus is on Scotland wide need - this precludes certain city regions from serving as cluster e.g. Glasgow and the Clyde Valley
- local authorities should not be allocated to more than one cluster, as this is a functional necessity for modelling the flow of lettings in the analysis that follows.

An updated set of regional clusters are presented in Table 7.1 and Figure 7.1. These clusters were derived from the following process. Firstly, we started with the NUTS-2 regions used for analysing and implementing regional policies in the European Union. Secondly, we adapted the NUTS-2 regions to satisfy our aforementioned constraints, resulting in North Ayrshire being allocated to Southern Scotland, as opposed to being split between Southern Scotland and Highland and Islands. Thirdly, we reallocated a small number of local authorities based upon historical trends in housing need. Specifically, we clustered local authorities based upon historic rates of overcrowding, disrepair and unsuitable homes using Scottish House Condition Survey (SHCS) data from 2012-2019 and a k-means clustering algorithm. The clusters produced from this analysis were used as a comparison to identify any local authorities that were evidently more closely related to a neighbouring region than their NUTS-2 classification. This resulted in Aberdeen City and Aberdeenshire being clustered with Tayside.

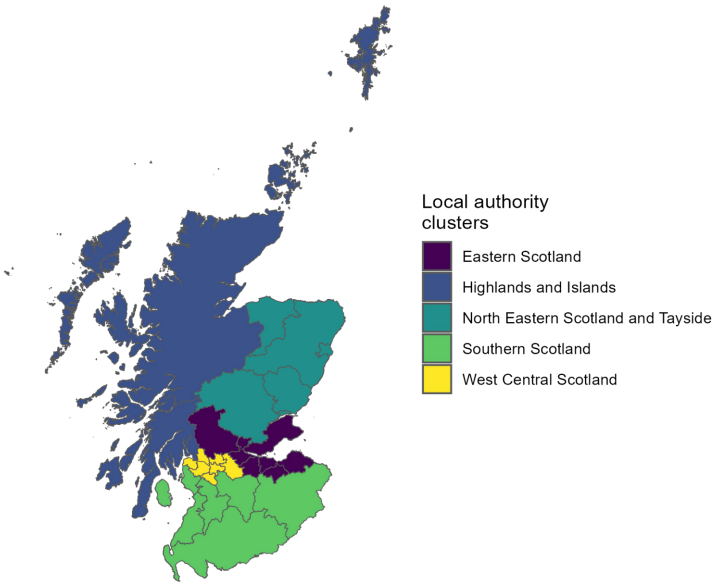
Finally, we allocated Moray to North Eastern Scotland and Tayside rather than Highlands and Islands. Moray is not eligible for the Highlands AHSP funding benchmark utilised in chapter 8, so this amendment aligns the clusters more closely to their treatment under AHSP.

Table 7.1: Clustering of local authorities

Local authority cluster	Local authorities
Eastern Scotland	City of Edinburgh, Clackmannanshire, East Lothian, Falkirk, Fife, Midlothian, Stirling, West Lothian
Highlands and Islands	Argyll and Bute, Highland, Na h-Eileanan Siar, Orkney Islands, Shetland Islands
North Eastern Scotland and Tayside	Aberdeen City, Aberdeenshire, Angus, Dundee City, Moray, Perth and Kinross
Southern Scotland	Dumfries and Galloway, East Ayrshire, North Ayrshire, Scottish Borders, South Ayrshire, South Lanarkshire
West Central Scotland	East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, North Lanarkshire, Renfrewshire, West Dunbartonshire

The presented clusters have a clear rationale outlined above and were supported by many of the stakeholders interviewed for the project. Nonetheless, all clustering solutions have limitations and they are by necessity a simplification of a more complex reality. The regional fit will be more suitable for some authorities than others - South Lanarkshire most obviously has urban areas closely integrated with the West Central Scotland cluster. However, it is worth reiterating that they are for communication purposes only and have no implications for the estimates produced by the model.

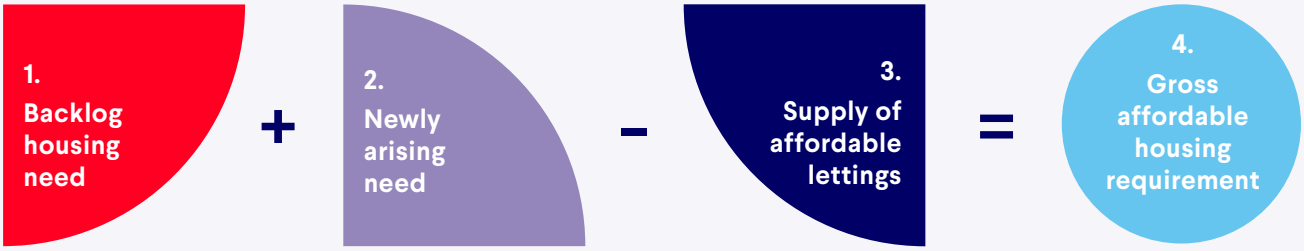
Figure 7.1. Regional clusters



7.2. Model architecture

Figure 7.2. Model architecture

The aim of the model is to provide an estimate of the gross affordable housing requirement over the next Parliament. To do so we rely upon a stock-flow model for Scotland. A stock-flow model assumes there exists at any one point in time a 'stock' of households in need of affordable housing. Over time, households may flow into need due to a combination of changing circumstances (e.g. becoming homeless) and demographic changes (e.g. new households forming). Conversely, they may flow out of need by occupying affordable homes that become available to let. To operationalise the stock-flow model, the analysis combines an estimate of backlog need currently existing in Scotland, adds to that an estimate of newly arising need expected to arise over the next five years, and finally subtracts the supply of affordable lettings. The basic elements of this architecture are displayed schematically in Figure 7.2.



The model is very similar to that used in 2015 and 2020. As was the case with those models, the model produces an estimate of the *gross* affordable housing requirement. This means that we provide a picture of housing need in the future irrespective of current or planned future policy and provision. As the authors argued in 2015:

> [The model] is not therefore dependent on assumptions about the forward supply of new affordable housing holding true. Indeed, the net affordable housing supply calculated in step three of the basic model architecture relates only to the 'natural' supply brought about through re-lets of affordable housing, and does not include the new supply brought about through construction.
>
> Powell et al., 2015: 21

Although the logic of the model architecture is similar to the 2015 and 2020 reports, there are differences in our analytical approach. The differences were driven by a lack of data in key areas, which necessitated methodological changes, rather than due to deficiencies in the previous reports. Key differences are discussed in detail elsewhere in the report, but may briefly be summarised as:

> Backlog need due to households inadequately housed was estimated using multilevel regression with post-stratification (MRP) and iterative proportional fitting (IPF), as opposed to using three waves of pooled weighted data from SHCS

> Household growth projections were modelled by the research team rather than relying upon the 2018-based NRS projections (see chapter 6 for methodology).

As with the previous reports, as much as practically feasible we have sought to reflect existing practice in assessing housing need in Scotland. In many instances we use the same data sources and assumptions as the CHMA HNDA tool. And we invited stakeholder interviewees in the previous research stage to provide comments on our methodology so as to inform and improve our approach. There will inevitably be limitations to the analysis imposed by the availability of data. But as with the previous reports, we have adopted a methodology that *"strikes a balance between generous and restrictive treatments of housing need"* (Dunning et al., 2020: 63). And we present a range of scenarios to illustrate the sensitivity of our estimates to changes in their underlying assumptions.

7.3. Conceptualisations of housing need

In chapter 3 we outlined our definition of affordable housing need but acknowledged that, as a normative concept, need is contested. As such below we identify three elements of our approach to operationalising and modelling housing need over which there may be differing views and provide some justification for our choices:

1. **The type and severity of poor stock condition that might result in occupants being deemed to be in need.** Our definition uses the Scottish 'below tolerable standard' and 'disrepair' tests alongside consideration of the extent of overcrowding and suitability to the household's needs (e.g. adaptations for those with a disability). This is a more expansive definition of need than is provided by the CHMA HNDA tool, which relies upon the HoTOC measure (see chapter 4). In defence of our more expansive definition, we highlight that our indicators are widely used within academic research on need and therefore have clear precedent (Bramley et al., 2010). Furthermore, based upon our HNDA review it is common for local authorities to adopt more expansive definitions of backlog need than the HoTOC measure, which many planning authorities consider to be a lower bound on backlog need. As we focus on the need for affordable housing, inadequate housing only results in need if the household is also experiencing affordability stress in the private sector. The significance of the affordability test is that the household cannot resolve their housing situation adequately within the market, for example an in situ adaptation of the home would not address the household's affordability issues on its own.
2. **The timescale over which need should be met.** Our position is that five years is the base timeframe for dealing with backlog need and this is a common approach taken in local authority HNDAs. Methodologically five years is advantageous as forecasts of household growth are more likely to be correct over the short-term

than they are in the medium to long-term. However, normatively it is reasonable to argue that acute indicators of need associated with significant social harm - living in temporary accommodation, overcrowding - should be seen as urgent priorities (Ryder, 2025). Interview stakeholders also highlighted that the significant costs of issues such as temporary accommodation were critical to their declaration of a housing emergency, underlying the case for urgent action.

3. **The distance that households in need should be expected to move in order to meet those needs.** An important principle within our model is that there is a geographical limit over which it is acceptable to expect a household to move because of links to local areas (e.g. family, school, social support networks, transport). We recognise that most local authority areas contain a wide variety of housing sub-markets, yet due to the logistical difficulties of estimating need at the national scale, we consider the local authority to be the appropriate unit at which to assess need for this report, given the lack of data at a more granular level.

In addition to debate over conceptualising need, there are valid debates over how best to respond. Most pertinently for our modelling, which presents a quantity of affordable homes to be delivered, there remains a policy debate as to whether affordable housing need requires a new dwelling per household. Some of interviewees, for example, suggested a balance is needed between providing new homes and making more efficient usage of the existing housing stock. In this respect, an appropriate policy response to housing need could include in situ solutions that improve the quality and affordability of the PRS or bring long-term empty homes back into use.

It is out of the scope of this research to resolve this debate which is most appropriately treated as a matter of both national and local policy. Moreover, this research is not intended to detract from the importance of in situ interventions to improve conditions and affordability in the PRS, which are valuable in and of themselves and will benefit PRS households not in need of affordable housing. However, we have chosen to present affordable housing need as a gross affordable housing requirement as it both represents a viable intervention for policy consideration and a useful framework through which to evaluate the efficacy of interventions.

It is a viable intervention on the basis that affordable housing would provide a decent and secure home for each household in need. And it is not self-evident that new affordable homes would result in an equivalent increase in the number of empty private homes – in the context of a growing population households occupying an affordable home may vacate a private home that could be occupied by a newly formed household able to afford the market (although depending on the home's condition it may still require upgrading).

Furthermore, the gross affordable housing requirement serves as a framework to evaluate policy. Similar to the HNDA process, our work intends to stimulate policy discussion regarding appropriate responses including the efficacy and value for money of different interventions. Policy debate should consider that in situ solutions will also require some role for government investment and subsidy, for example through housing renewal programmes or ongoing demand-side subsidies such as LHA (Gibb, 2024). And interventions should be accompanied by a set of indicators to evaluate their efficacy, with the indicators of need used in this report serving as an example. While it is out of scope of this research to resolve this policy debate, quantifying the scale of need and understanding the drivers is a useful starting point to inform that discussion.

7.4. Backlog need

The first step in the model is to estimate the stock of unmet housing need. The backlog of unmet housing need is assumed to be cleared over the five-year period 2026-31. Backlog need is composed of two sources:

- Homeless households that have been open cases for three years or less
- Households inadequately housed unable to afford market housing

7.4.1. Households that are homeless

Homeless households are quite clearly in need of affordable housing given their acute need for secure accommodation. Table 7.2 displays the number of homelessness cases per cluster on 31 March 2024 that have been open for three years or less, the same threshold applied in the previous reports.[4] The data is provided by the Scottish Government. According to this definition, there has been a 45.5% increase in homelessness cases in Scotland over the past five years, increasing from 20,517 in 2019 to 29,845 in 2024.

Table 7.2: Homelessness cases open for three years or less 31 March 2024

Local authority cluster	Total
North Eastern Scotland and Tayside	2,470
Highlands and Islands	1,427
Eastern Scotland	13,113
Southern Scotland	3,991
West Central Scotland	8,844
Scotland	29,845

Source: Scottish Government

[4] The 2015 report established the three year cutoff as open cases older than three years are "likely to reflect a significant number of instances where communication has been lost with the applicant, or there have been difficulties in processing the application. Using a cut off of three years is therefore a better representation of the number of open and 'live' homelessness applications" (Powell et al., 2015: 17). However, since the 2015 report there has been a growth in the number of households in temporary accommodation (see chapter six), including households in temporary accommodation beyond three years (see Table 44 in Tables for Homelessness in Scotland 2023/24). We have retained the definition of earlier reports to allow for comparisons over time, but it also clear that households in temporary accommodation beyond three years are in need of a secure affordable home. If we were to add households in temporary accommodation for over three years to our estimate of backlog need, it would increase the national estimate of gross affordable housing requirement to 15,858, an increase of 165 homes.

7.4.2. Households inadequately housed

The second group – households inadequately housed – are seen as in need as they are in a home unsuitable for their circumstances and are unable to meet their need in the market. They would therefore benefit from a suitable affordable home. To quantify the size of this group we estimate the number of households inadequately housed in the private sector who are experiencing affordability stress. We define a household as 'inadequately housed' according to three criteria:

- **Overcrowding** – measured according to the bedroom standard
- **Quality standard** – the home fails the Scottish Housing Quality Standard (SHQS) due to either being below the Tolerable Standard or due to the presence of serious disrepair
- **Suitability** – the household lives in a home that is unsuitable for their health needs, measured using survey responses from households with a long-term health condition where their home is 'not very' or 'not at all' suitable for their needs

A household is inadequately housed if it experiences at least one of these criteria. We use the 2022 and 2023 waves of the SHCS to estimate the number of inadequately housed households. Homes failing the Tolerable Standard due to lack of satisfactory fire and carbon dioxide detection are not included in the estimate of backlog need as it is assumed this can be remediated with the household in situ, provided the home fails the Standard on this condition only.

Previous iterations of the model used three years of pooled SHCS data to estimate backlog need in each local authority, as this provides a larger sample size per local authority for robust estimates. However, this was not possible for this report as the 2020 and 2021 waves of the SHCS did not involve physical surveys of dwellings due to the COVID-19 pandemic. And we were only able to access two SHCS years via a data access request.

Consequently, to estimate the number of households inadequately housed we combine two methods: multilevel regression with post-stratification (MRP) and iterative proportional fitting (IPF). MRP involves two analytical stages. Firstly, a model is built that estimates the probability of an outcome occurring (e.g. a household being overcrowded), using predictor variables available at the census level (e.g. tenure, household size, bedroom number). Secondly, the proportion of the population matching each combination of the predictor variables (e.g. private renting households, with four household members and two bedrooms) is multiplied by the modelled probabilities to produce a population level estimate of the outcome. We build four separate MRP models to estimate, in each local authority, the level of overcrowding, homes below quality standards, unsuitable homes, and fuel poverty. We use the fuel poverty indicator as an affordability stress proxy (see below for full discussion and see Appendix for a full technical exposition of the method).

We validate our MRP estimates in three ways, and present results of these validation checks in full in the Appendix. Firstly, we analyse the correlation between our MRP estimate of overcrowding in each local authority with the 2022 census estimates of overcrowding, which is 0.98. Secondly, to assess whether the estimates are plausibly distributed across local authorities, we compare our MRP estimates for each regional cluster to the local authority 2017-19 SHCS estimates, with the first stage multilevel model built using the 2019 SHCS survey. Thirdly, we sum the MRP estimate for all local

authorities to produce an MRP estimate for Scotland as a whole and compare this with the 2023 SHCS estimate for Scotland. We present this comparison in Table 7.3. The largest difference between our MRP estimate and the SHCS 2023 estimate is for fuel poverty, where our MRP estimate is more than 10,000 households greater. Our estimate for unsuitable homes is also more than 7,500 households greater than the SHCS. However, all four of our estimates are comfortably within the range of the 95% confidence interval for the 2023 SHCS estimates (see Appendix). And there are reasonable grounds to suspect the SHCS is underestimating the rate of backlog need in some local authorities. For example, historical SHCS estimates suggest that for each of our indicators of need there are certain local authorities with no affected households i.e. no overcrowded households in the authority, or no households in unsuitable housing etc. This not only contradicts the census data on overcrowding but is generally implausible.

Table 7.3: MRP and SHCS estimates of inadequate housing in Scotland and the percentage of Scottish households affected

Estimate	Overcrowding		Below quality standards		Unsuitable		Fuel poverty	
	Total	%	Total	%	Total	%	Total	%
MRP	61,026	2.41%	46,833	1.85%	48,964	1.93%	871,622	34.38%
SHCS	60,656	2.39%	42,169	1.66%	41,275	1.63%	860,816	34.00%

Source: Author calculations and 2023 SHCS

The estimates of each backlog need indicator in Table 7.3 include some degree of double counting, for example some households will be overcrowded and in unsuitable housing. We use IPF to adjust for this double count. IPF is a technique used to estimate the joint distribution of several variables given information about the distribution of each variable individually (referred to as 'marginal totals' i.e. the totals in Table 7.3). It starts with an initial estimate of the joint distribution – which we estimate using the pooled 2022 and 2023 SHCS surveys – and then repeatedly adjusts the values such that the row and column totals match the known marginal totals by assigning a weighting to each observation. We use IPF to estimate the joint distribution of backlog need and fuel poverty, and the distribution of need across tenures. Following this we calculate the households inadequately housed in the private sector experiencing affordability stress.

Table 7.4 presents the joint distribution of households inadequately housed, showing that only a small proportion of households experience multiple indicators of inadequate housing. Table 7.4 also shows that 6.06% of households in Scotland are inadequately housed according to our definition, an increase from the 5.2% in need in 2020.

Table 7.4: Joint distribution of households inadequately housed

Local authority cluster	Over-crowded	Below quality standard	Un-suitable	Over-crowded & Below quality standard	Below quality standard & un-suitable	Over-crowded & un-suitable	Total households inadequately housed	Households inadequately housed as % of all households
North Eastern Scotland and Tayside	10,670	9,533	7,328	226	158	181	28,096	6.01%
Highlands and Islands	2,582	4,659	2,908	68	74	40	10,331	5.45%
Eastern Scotland	15,458	11,770	11,770	283	222	289	40,904	5.65%
Southern Scotland	6,519	8,624	8,624	135	180	140	24,539	5.46%
West Central Scotland	23,501	10,278	14,838	387	236	547	49,787	7.06%
Scotland	58,730	44,864	46,897	1,099	870	1,197	153,657	6.06%

Source: Author's calculations of 2022 and 2023 SHCS data, NRS 2023 mid-year households estimate

7.4.3. Taking into account needs met within the social rented sector

Backlog need for households inadequately housed is restricted to households in the private sector. As with the 2015 and 2020 reports, we assume that households in the social rented sector (SRS) in need will have their need met within the SRS, either through remediation of disrepair, adaptations, or moving within the tenure. As the 2020 report stated:

"Households that are in need in the social rented sector (SRS) are likely to have their housing need met within that sector and that this need does not therefore equate to a requirement for new housing. If a dwelling in this sector can be repaired or the household's housing met in an alternative SRS dwelling then there is no net requirement arising from that household's needs" (Dunning et al., 2020: 67).

This assumption has important policy implications for the social housing sector, most obviously that social landlords have sufficient resources and capacity to maintain their existing homes while also delivering on other commitments (e.g. retrofit) (HIT, 2025). Yet it is out of the scope of this research to determine how to effectively support capacity and maintenance within the social housing sector.

7.4.4. Accounting for mismatches in the social rented sector

Although we assume that SRS need will be met within the SRS sector, it is unrealistic to expect that there would be a perfect (one-to-one) match between households' needs and properties becoming available for movement within the SRS. There will be an unavoidable degree of mismatch between the stock of need within the SRS and the flow of lettings that relates to factors such as dwelling size and location.

As per the 2015 and 2020 reports, as the current SRS stock will not be able to clear the SRS backlog through turnover alone, we apply a mismatch adjustment which inflates the affordable housing requirement. To estimate how many SRS homes are unavailable due to a mismatch between supply and need, we use the average time a property remains empty between lettings in each local authority. This duration is then converted into a proportion of the year (out of 365 days) to give us an estimate of the proportion of available rentals that might not be able to immediately fulfil housing needs. We use the Annual Return on the Charter (ARC) data published annually by the SHR to calculate the mismatch adjustment. The ARC is publicly available data that is used by the SHR to assess social landlord performance against the Scottish Social Housing Charter. The Scotland average for the mismatch adjustment is 15.5%, an increase from the 8.7% adjustment made in the 2020 report.

Finally, we apply an affordability test to households inadequately housed in the private sector. Households failing the test are assumed to be unable to afford a market property, and by consequence would benefit from affordable housing. We use the SHCS fuel poverty indicator as an affordability proxy. According to this measure a household is in fuel poverty if, to maintain a satisfactory level of thermal comfort, total fuel costs are more than 10% of the household's net income (after housing costs), and if after deducting fuel costs, the household's remaining net income is below 90% of the UK Minimum Income Standard (Padley and Stone, 2023). The strength of this measure as a proxy for affordability stress is that it adjusts incomes for household circumstances and uses a widely accepted and rigorous definition of acceptable living standards after housing costs. A household in fuel poverty is taken to also be experiencing affordability stress. We estimate that 36.52% of the households inadequately housed in the private sector fail this affordability test, which is an increase relative to the 33.6% figure in the 2020 report. And as this is a higher proportion of a larger total number of inadequately housed households, the backlog need figure will be significantly higher by consequence.

Table 7.5 presents the final estimate for backlog need owing to households being inadequately housed and the calculation of the figure. Table 7.5 shows the number of households in need due to inadequate accommodation in Scotland is **39,749**. This is an increase of 36.7% relative to the 29,068 figure in the 2020 report. The highest number of households inadequately housed is in the West Central region. And while our regional clusters are not directly comparable to those of the 2020 report, it remains clear that there has been a dramatic increase in need within Eastern Scotland to over 9,000 households, and in North Eastern Scotland and Tayside, to over 8,000 households.

Table 7.5: Backlog need - estimating the households inadequately housed who cannot afford the market

Local authority cluster	A Total households inadequately housed Table 7.4	B Inadequately housed in SRS Author's calculations SHCS 2022 and 2023	C Mismatch adjustment for SRS Author's calculations ARC (2023-24)	D Inadequately housed in private sector, plus mismatch adjustment A - B x (100 - C)	E % inadequately housed in private sector and in affordability stress Author's calculations SHCS 2022 and 2023	F Backlog need owing to inadequate housing D x E
North Eastern Scotland and Tayside	28,096	4,167	21.4%	25,359	34.55%	8,762
Highlands and Islands	10,331	2,425	11.4%	8,198	55.29%	4,533
Eastern Scotland	40,904	17,154	17.4%	27,057	35.03%	9,479
Southern Scotland	24,539	7,998	9.7%	17,283	38.41%	6,639
West Central Scotland	49,787	20,889	16.3%	30,930	33.42%	10,336
Scotland	153,657	52,633	15.5%	108,827	36.52%	39,749

Source: Author's calculations of 2022 and 2023 SHCS data, author's calculation of Annual Return on the Charter (ARC) 2023/24

7.4.5. Total backlog need

Finally, total backlog need is the sum of open homelessness cases and households inadequately housed who cannot afford the market. As shown by Table 7.6, total backlog need is estimated to be **69,594**. The regional cluster with the highest level of backlog need is Eastern Scotland, which accounts for just under a third of total need in Scotland. The backlog need figure in Table 7.6 is a 40.3% increase from the estimated backlog need in the 2020 report, which was 49,585. Assuming a five-year period to meet housing need, at least **13,917 affordable homes are required annually** simply to clear backlog need, either through new supply or turnover within the existing stock. The comparable figure in 2020 was 9,917.

Table 7.6: Total backlog need

Local authority cluster	Open homelessness cases	Inadequately housed unable to afford the market	Total backlog need	Annual requirement to clear backlog need
North Eastern Scotland and Tayside	2,470	8,762	11,232	2,246
Highlands and Islands	1,427	4,533	5,960	1,192
Eastern Scotland	13,113	9,479	22,592	4,518
Southern Scotland	3,991	6,639	10,630	2,125
West Central Scotland	8,844	10,336	19,180	3,836
Scotland	29,845	39,749	69,594	13,917

7.5. Newly arising need

The second step in the model is to estimate the flow of newly arising housing need over 2026-31. Newly arising need emerges from two sources:

- Newly forming households unable to afford the market
- Newly arising homelessness assessments

7.5.1. Newly formed households unable to afford the market

The Scottish Government's household projections for local authorities were used as the data source for newly forming households in the previous reports. But as discussed in the preceding chapter, for this report we opted to model our own household projections due to the 2018-based household projections being dated. The methodological approach taken to project household numbers is described in chapter 6.[5]

To estimate newly forming households unable to afford the market we multiply the five-year average of modelled household growth by the percentage of households unable to afford market housing in each local authority. The percentage of households unable to afford market housing is estimated using the same methodology as the CHMA HNDA tool. The HNDA tool calculates the affordability of local housing by taking estimated distributions of local incomes, house prices and rents, applying pre-specified thresholds in terms of an affordable ratio of incomes to prices/rents, and subsequently calculating the proportion of newly formed households who could afford market housing. The remaining newly formed households are assumed to require affordable housing, either social renting or MMR. The affordability thresholds and assumptions applied in the HNDA tool are:

- a household can afford homeownership if their gross income multiplied by 3.9 is higher than or equal to the 25th percentile house price
- of those who can afford homeownership, 60% will subsequently purchase a home due to some households being unable to secure a deposit
- a household can afford a private rented sector (PRS) property if the median rent is less than 25% of their gross income

Although the thresholds of incomes to prices/rents can be changed, our HNDA review found that they are very rarely (if ever) changed by local authorities in practice (see chapter 5). Nonetheless, we update the data inputs to 2025 values for household number, prices, rents and incomes, which are set to their 2020 values in the HNDA tool. Specifically, we use our modelled household projections to estimate household numbers. We update the tool's estimates of prices and rents using Registers of Scotland house price statistics for January 2025, the ONS's Price Index of Private Rents for Scotland released in February 2025, and the Local Housing Allowance (LHA) rates payable for Scotland in 2024/25. And we inflate the tool's estimated average

[5] There are two local authorities - Inverclyde and Argyll and Bute - forecast to experience a slight population decline between 2026-31 in our modelled projections. We do not subtract these households from the gross affordable housing requirement as there is no method for determining the tenure of the homes that could become vacant. Instead, we assume zero need from household growth in these cases. However, if we were to assume population decline would reduce the gross affordable housing requirement by an amount equivalent to the reduction in the number of households - which we stress is an unrealistic assumption given they are highly unlikely to be all within the SRS - the annual affordable housing requirement would be reduced by 46 homes to 15,647.

incomes by local authority wage inflation between 2018 and 2024 according to the Annual Survey of Hours and Earnings (ASHE). The precision of the ASHE estimates are contingent upon the sample size achieved in each local authority, and so the estimates tend to have a wider confidence interval in sparsely populated authorities where sample sizes are lower. To produce more stable estimates, where a local authority ASHE estimate for a given time period has a confidence interval of greater than 10%, we inflate the relevant income by the Scotland-wide level of earnings inflation instead. Regardless, accurate income data remains a challenge in assessing housing affordability in Scotland, and this was noted in our interviews. One interview explained, "affordability needs to be understood in the context of who's paying, and knowledge of who's paying is poor. So big challenges on affordability, big challenges on data" (local authority representative).

> Affordability needs to be understood in the context of who's paying, and knowledge of who's paying is poor. So big challenges on affordability, big challenges on data.
>
> Local Authority Representative

The updated data inputs represent the 2025 starting point in our calculations. But projections of newly forming need rely upon an assumed rate of growth between 2026-31 for household numbers, incomes, house prices and rents. As discussed above, in our core modelling scenario we assume that over this period household numbers will grow in accordance with our principal projection. For the remaining inputs, we adopt the default assumptions under the HNDA tool. The assumed growth rates between 2026-2031 are: 2.5% annual growth for household incomes, 1.6% annual growth for house prices and rents. This is an optimistic projection of income growth relative to prices and rents, with recent forecasts suggesting that house prices could increase faster than earnings over the next five years, which would result in higher levels of affordable housing need by negatively affecting affordability (Rettie, 2025: 12; Savills, 2025; Scottish Government, 2025c).

Table 7.7 shows the five-year average of household growth, which results in an annual increase of 14,081 households in Scotland. Of these new households, 54.83% will be unable to afford market housing, resulting in a projection of 7,721 newly forming households in need of affordable housing annually. Just under 40% of this newly arising need is located in Eastern Scotland, which has both the highest annual household growth and highest percentage unable to afford the market.

Table 7.7: Newly arising need from projected household growth

Local authority cluster	New household formation five-year average	Percentage unable to afford market	Newly households unable to afford the market
North Eastern Scotland and Tayside	2,665	44.17%	1,177
Highlands and Islands	996	45.49%	453
Eastern Scotland	4,944	62.34%	3,082
Southern Scotland	1,922	44.33%	852
West Central Scotland	3,554	60.69%	2,157
Scotland	14,081	54.83%	7,721

Source: Author's calculations, CHMA HNDA tool

This projection is a decrease relative to the 2020 report which estimated the equivalent figure at 9,616. This finding is perhaps counterintuitive given that the policy analysis, interviews and analysis of price trends in this research suggested affordability has worsened since 2020. Yet Table 7.7 suggests affordability has improved slightly as the percentage unable to afford the market has decreased, which has resulted in lower estimated need from new household formation. An explanation for the slight affordability improvement is that in the majority of local authorities gross wages grew faster than house prices in the past five years, and in a minority of cases also grew faster than rents. Under the HNDA tool framework this has increased the percentage of new households able to afford market housing as we have inflated incomes in line with wages.

However, five things are of further note. Firstly, the percentage unable to afford the market is still more than half of newly formed households. And in that respect the estimates suggest the continuation of a long-term crisis of affordability, albeit not an exacerbation.

Secondly, recent affordability pressure is already factored into the model through the application of the affordability test to households inadequately housed. A higher proportion of households were in affordability stress by this measure relative to 2020, which contributed to a higher level of backlog need. As such, our model accounts for recent affordability pressure through backlog need but assumes affordability will not worsen through 2026-31 as incomes grow faster than prices.

Thirdly, the assumptions underpinning the HNDA tool framework may not reflect the complexity of market affordability when mortgage rates and deposit requirements have increased following the recent contraction in lending, which may have dampened price growth in some locations but had less effect on rents.

Fourthly, real wage growth has been much lower than gross wage growth due to high inflation. As such, the HNDA tool approach potentially understates the negative effect of cost-of-living pressures and rent inflation on monthly expenditure, savings, living standards and homeownership prospects.

Finally, inflating incomes by wage inflation may introduce some error to the estimate, as household incomes will be composed of sources other than wages (e.g. social security payments, capital gains), and these sources will grow at a differential rate to wages. The lack of contemporary, granular data on local income distributions remains a gap in the estimation of Scottish housing affordability, which it is beyond the scope of this research to rectify.

In this report we have chosen to proceed with the HNDA tool approach given its widespread usage in the HNDA process. But future work should explore whether the HNDA tool thresholds need reviewing. In addition, due to the inherent uncertainty around income estimation, we demonstrate the sensitivity of our estimate to variation in income inflation.

Table 7.8: Comparison of newly arising need from household growth under different income growth scenarios 2018-2024

Local authority cluster	ASHE wage inflation		ASHE wage inflation -1% point		ASHE wage inflation +1% point	
	% unable to afford market	New households unable to afford the market	% unable to afford market	New households unable to afford the market	% unable to afford market	New households unable to afford the market
North Eastern Scotland and Tayside	44.17%	1,177	47.17%	1,257	41.54%	1,107
Highlands and Islands	45.49%	453	49.31%	491	42.58%	424
Eastern Scotland	62.34%	3,082	65.23%	3,225	59.59%	2,946
Southern Scotland	44.33%	852	47.29%	909	41.83%	804
West Central Scotland	60.69%	2,157	63.31%	2,250	58.30%	2,072
Scotland	54.83%	7,721	57.75%	8,132	52.22%	7,353

Source: Author's calculations, Annual Survey of Hours and Earnings (ASHE) 2016-2024, CHMA HNDA tool

Specifically, in Table 7.8 we show how the projection for newly arising need from household growth would differ if the estimated income growth between 2018 and 2024 varied from our central estimate by plus or minus one percentage point annually. As an illustrative example, gross wage inflation in Aberdeen City between 2018 and 2024 was 4.10% annually, which we subsequently use as our income inflation rate to update the HNDA tool income estimates for this local authority. Table 7.8 displays the sensitivity of projected need to scenarios where gross wage inflation from 2018 to 2024 was 3.10% and 5.10% in Aberdeen City, and the respective inflation rate in each local authority also varied to this extent. Table 7.8 shows that projected annual need from newly formed households varies from 7,353 to 8,132 under these scenarios, roughly 370 to 410 households either side of our central projection. Relative to our central scenario, it is more likely that income growth between 2018 and 2024 was lower rather than higher. And so our central scenario for need from projected household growth is most likely a conservative projection.

7.5.2 Newly arising homelessness cases

The second source of newly arising affordable housing need is from households becoming homeless throughout 2026-31. To estimate this source of need we use the same methodology as the 2020 report. We start with the number of applications assessed as homeless or threatened with homelessness by local authority in 2023/24 and deflate this figure to 60% of total applications. This deflation is based upon the assumption that 60% of homelessness applications result in a social letting, an assumption applied in both previous reports.[6] Table 7.9 displays the estimated annual newly arising need from homelessness, which is **20,170**. This is a 16.8% increase from the estimate of 17,275 in the 2020 report.

[6] The 60% figure emerged from the Scottish Government's HaTAP (Homelessness and Temporary Accommodation Pressure) method for estimating homelessness pressure in a local authority. HaTAP estimated the amount of housing needed to prevent an increase in the level of homelessness in each local authority and reduce reliance on temporary accommodation over a five-year period. HaTAP relied upon a policy assumption that 60% of lets may be used to discharge homelessness duties, which the previous reports used as a benchmark for the flow of need from homelessness acceptances. Current data suggests that roughly 70% of closed homelessness cases result in a social letting (see tables T48, T49 and T50 in Tables for Homelessness in Scotland 2023/24). If we were to assume 70% of homelessness cases will result in a letting, the total estimate of gross affordable housing requirement would increase to 18,831. However, there is the potential for double counting between sources of newly arising need. We argue it is necessary to include some projection of need from homelessness as demographic forecasts have an in-built assumption that households are adequately housed and may consequently underrepresent the households prevented from forming due to affordability pressures (see Powell et al., 2015: 29-30 for a fuller discussion). But we retain the 60% deflator in our main model to retain consistency with the previous reports and because it theoretically reduces the likelihood of double-counting relative to 70%.

Table 7.9: Annual newly arising need from homelessness

Local authority cluster	Households assessed as homeless 2023/24	Assumed newly arising need from homelessness
North Eastern Scotland and Tayside	4,683	2,810
Highlands and Islands	1,998	1,199
Eastern Scotland	9,763	5,857
Southern Scotland	6,337	3,802
West Central Scotland	10,838	6,502
Scotland	33,619	20,170

Source: Scottish Government Tables for Homelessness in Scotland 2023-24 - Table T11

7.5.3 Total newly arising need

Table 7.10 displays the estimate of annual newly arising need in the model, which is the sum of need from newly formed households and homelessness. The estimate of **27,891** is a 3.7% increase relative to the 26,891 estimate in 2020. As discussed above, this increase is the result of the increased flow of need from homelessness, whereas need from newly arising households is lower than in 2020.

Table 7.7: Newly arising need from projected household growth

Local authority cluster	New household formation five-year average	Percentage unable to afford market	Newly households unable to afford the market
North Eastern Scotland and Tayside	2,665	44.17%	1,177
Highlands and Islands	996	45.49%	453
Eastern Scotland	4,944	62.34%	3,082
Southern Scotland	1,922	44.33%	852
West Central Scotland	3,554	60.69%	2,157
Scotland	14,081	54.83%	7,721

Source: Author's calculations, CHMA HNDA tool

Table 7.10: Annual newly arising need

Local authority cluster	New households unable to afford the market	Newly arising need from homelessness	Total newly arising need
North Eastern Scotland and Tayside	1,177	2,810	3,987
Highlands and Islands	453	1,199	1,652
Eastern Scotland	3,082	5,857	8,939
Southern Scotland	852	3,802	4,654
West Central Scotland	2,157	6,502	8,659
Scotland	7,721	20,170	27,891

Source: Author's calculations, CHMA HNDA tool

7.6. Supply of affordable lettings

The third step in calculating the affordable housing requirement is to estimate the supply of future affordable housing that is part of the existing stock. Specifically, we estimate the expected **supply of general needs re-lets available to new tenants** and the **supply of low-cost homeownership re-sales**. Doing so ensures that the affordable housing requirement is additional to that which can be met through turnover in the existing stock. Unlike the previous two steps, where data availability resulted in necessary changes to our methodology, in this stage of the analysis we have followed the approach of the 2020 report. It is, therefore, important to clarify some of the key steps and assumptions of the approach taken in the 2020 report.

Regarding key assumptions, the model is based on general needs housing and does not include supported housing lets. As the 2020 report wrote: "we assume that the nature of the support and/or care package is likely to mean that any supported households' housing needs are being or have been addressed. We further assume that homeless households in supported housing that is helping them transition to independent housing will be captured as part of our estimate of future newly-arising homelessness" (Dunning et al., 2020: 81).

The second assumption is that each social landlord's lettings are distributed in proportion to the spatial distribution of their total stock. To elaborate, as was the case in 2020, we use ARC data on lettings activity and the location of general needs stock to estimate the flow of lettings. For each social housing provider, ARC includes data on the annual number of lets, general needs lets, and lets to existing tenants. But it does not disaggregate lettings data by local authority. In a separate table, ARC provides data for each landlord on their general needs stock in each local authority. We therefore assume that, for each landlord, the proportion of lettings in each local authority is equal to the proportion of their stock in each local authority. To give a sense of the strength

of this assumption, our calculations found that 80% of social housing residents let from a landlord who is based wholly within a single authority.

We follow several steps to estimate the supply of general needs re-lets available to new tenants. Firstly, following the preceding assumption regarding the location of lettings, we use the ARC data for 2021/22 and 2022/23 to impute all lets, general needs lets and lets to existing tenants for each local authority, and take the two-year average. We use 2021/22 and 2022/23 data as this matches the most recently released AHSP out-turn reports, which we use to subtract the lets from new supply (see below).

Secondly, we estimate the number of general needs lets that are available to new tenants. To do this we calculate the proportion of all lets that are to existing tenants, subtract this from 1 and apply that proportion to the count of general needs lets.

Thirdly, we deflate the number of general needs lets to new tenants to account for what the previous reports referred to as the 'net household formation double count'. The 2015 report describes this double count as follows:

> Comparing social lets with estimates of net household formation leads to a double-counting of supply. This is because of the way that SRS dwellings released through the death of a single person living as a household, or a move to an institutional setting, are treated. If all social lets (including those released through the circumstances just mentioned) are assumed to be available to meet need, this ignores the fact that such 'needs' have already been met by virtue of taking net (rather than gross) household formation (i.e. the model 'provides' for a let to meet a need that has also been 'absorbed' by presenting household change in net terms)
>
> Powell et al., 2015: 33

To account for this double count we adopt the approach taken in the 2020 report, which is to deflate the number of general needs lets to 88% of its initial amount i.e. a reduction of 12%. The deflation proportion used in 2015 was 82.3%, and this figure was derived from analysis of 2013/14 SCORE data suggesting that on average 17.7% of SRS lets arose as a result of death or a move to institutional care. But as SCORE data was discontinued between the 2015 and 2020 reports, in 2020 this was uprated to 88% to adjust for growth in the SRS during that period. However, we choose again to use 88% as we are now further away from the discontinuation of SCORE data and consequently estimates of the number of lets from deaths or moves to institutional care have become increasingly uncertain. In the absence of any strong, data-driven rationale for adjusting the 88% figure, we choose to retain it for this iteration of the analysis.

The final stage is to account for the increase in SRS supply in recent years. The data on lets to new tenants will include both re-lets and new supply. Therefore, to arrive at the estimated number of re-lets, and a gross requirement for affordable housing, we subtract new supply from total lets to new tenants. We use the 2021/22 and 2022/23 data on completions from the AHSP outturn reports, taking the average across the two-year period, as the proxy for increase in supply.

As shown in Table 7.11, the annual supply of social re-lets is estimated at **26,305**. This is a reduction on the 28,167 figure in the 2020 report, indicating a decline in turnover in the general needs stock and capacity of the existing stock to meet need (see chapter 6).

Table 7.11: Estimated supply of social re-lets

Local authority cluster	General needs lets to new tenants	General needs lets to new tenants following 88% adjustment	New affordable supply	Supply of general needs re-lets
North Eastern Scotland and Tayside	6,405	5,637	1,357	4,280
Highlands and Islands	2,397	2,111	632	1,479
Eastern Scotland	8,276	7,283	1,857	5,426
Southern Scotland	7,298	6,423	1,411	5,012
West Central Scotland	14,267	12,555	2,447	10,108
Scotland	38,643	34,009	7,704	26,305

Source: Author's calculations of ARC 2021/22 and 2022/23, AHSP out-turn report 2021/22 and 2022/23

7.6.1 Understanding the decline in re-lets

As our model subtracts expected lettings from backlog and newly arising need, an increase in the rate of available lettings in the SRS would reduce the gross affordable housing requirement. As shown by our analysis of ARC data in Figure 6.18, the number of total lets in the social rented sector declined from 55,320 in 2019/20 to 51,342 in 2023/24. The average number of lets across 2020/21-2023/24 was 49,405 annually. This raises the question as to whether the requirement for new affordable homes could be reduced by social landlords more efficiently managing their stock. For example, according to ARC data the average number of days a social rented home remained empty before being re-let increased from 32 in 2019/20 to 57 in 2023/24. Theoretically, the supply of social re-lets could be increased by reducing the average days a home is empty to bring them back into use quicker, reducing the gross affordable housing requirement.

However, we conducted additional analysis to test this hypothesis and found the change in average days empty has **not** had a dramatic effect on the supply of re-lets. Much more important has been the decline in the number of homes becoming vacant, which fell from 50,200 (8.4%) in 2019/20, to 44,501 (7.2%) in 2023/24 (see Figure 6.18). Between 2020/21-2023/24 7.33% of the stock became vacant at some point.

Using four years of ARC data we conducted a longitudinal regression analysis to understand the drivers of the number of lets in the SRS over time. Our regression model predicted the number of re-lets according to: the rate at which properties became vacant, the average time they were empty before being re-let, and the rate of abandoned properties (a proxy for properties being taken out of supply). The results show that the rate at which properties become vacant is by far the strongest predictor of the number of re-lets. The model also allows us to predict how many lets would occur in two counterfactual scenarios, holding other factors constant. We describe the two scenarios below.

1. Under scenario one, we model the number of lets if:

    a) the average days empty was 55 days - the average across the social housing sector for 2020/21-2023/24

    b) the proportion of homes becoming empty increased to 8.4% - the proportion in 2019/20

Under scenario one, the number of annual lets would be 55,468, a 12% increase compared to the average across 2020/21-2023/24. This would return the total number of lets to above its 2020 level.

2. Under scenario two, we model the number of lets if:

    a) the average days empty was 32 days - the average across the social housing sector in 2019/20

    b) the proportion of homes becoming empty was 7.33% - the proportion of properties becoming empty across 2020/21-2023/24

Under scenario two, the number of lets would be 49,817, an increase of just 0.83%. While an additional 412 lets annually would be welcome, this analysis suggests that bringing homes back into use more quickly is not a viable substitute for increased investment in the provision of new affordable homes (see Appendix for full reporting of the additional analysis). Rather, the evidence suggests the decline in turnover in the SRS stock is driven by fewer properties becoming empty. This trend is less amenable

to change than reducing the number of days it is empty after being vacated, as the rate at which properties become empty is not wholly within landlord control and is related to factors such as local incomes and the affordability of private sector properties. It is therefore reasonable to assume recent trends in the number of lets will continue through 2026-31.

7.6.2. Low-cost homeownership re-sales

The second component of affordable housing supply is the re-sale of low-cost homeownership (LCHO) properties. Whereas the 2019 report estimated the existing supply of LCHO by projecting forward from the 2011 census, we have used the 2022 census figures. The 2022 census figures for the number of LCHO properties are multiplied by 2.35%, a figure used in the previous report based upon research suggesting that 2.35% of the stock is re-sold annually (Dunning et al., 2020: 84). Table 7.12 shows the estimated rate of annual LCHO re-sales is 504.

Table 7.12: LCHO re-sales

Local authority cluster	LCHO households	Estimated annual re-sales
North Eastern Scotland and Tayside	4,613	109
Highlands and Islands	2,341	55
Eastern Scotland	7,300	171
Southern Scotland	2,289	54
West Central Scotland	4,879	115
Scotland	21,422	504

Source: 2022 Census

7.6.3. Removing the effect of demolitions?

A question that remains is whether demolitions should be included when modelling the overall supply of affordable housing. While some housing needs models do account for future demolitions when determining the need for additional housing, we choose not to. As we've stated, our model should be viewed as a gross requirement, meaning that demolitions might necessitate the provision of extra affordable housing, depending on factors like location and property type. Two further arguments against modelling demolitions were included in the 2015 report.

"First, it is impossible to tell from the data sources the proportion of demolitions that were of affordable housing. Second, and more significantly, it is appropriate to assume that demolished properties were taken out of management and therefore unavailable to meet needs for some time prior to their demolition. As a result, it is reasonable to expect that any housing needs created by the decision to demolish (e.g.

decanted households) will have been captured in the model as homeless/threatened with homelessness. A slightly more generous specification of the model would seek to remove a proportion of these demolitions from the overall estimate of affordable supply, but we have not done so." (Powell et al., 2015: 34)

7.6.4. The overall supply of affordable housing

Table 7.13 shows that the estimate of annual total supply of affordable lettings is **26,809**, which is the sum of the supply of general needs re-lets and LCHO re-sales. This figure is a reduction on the 28,510 figure in the 2020 report, and as discussed above the primary driver of this change is a reduction in the rate at which homes are becoming empty.

Table 7.13: Annual supply of affordable lettings

Local authority cluster	Supply of general needs re-lets	LCHO re-sales	Total supply of affordable lettings
North Eastern Scotland and Tayside	4,280	109	4,389
Highlands and Islands	1,479	55	1,534
Eastern Scotland	5,426	171	5,597
Southern Scotland	5,012	54	5,066
West Central Scotland	10,108	115	10,223
Scotland	26,305	504	26,809

7.7. Gross affordable housing requirement

Two final steps remain in the modelling. The first is to combine the different components of the model under the model architecture depicted in Figure 7.2 i.e. the sum of the annual requirement to clear backlog need and newly arising need, subtract the supply of affordable lettings. This produces an estimate of 14,999 homes across Scotland. However, this estimate includes some local authorities where the estimated need is below zero. Consequently, as with the previous reports we adjust this total to constrain the calculated shortfall for each local authority area to zero or greater. Using this 'positive need' approach the estimated annual affordable housing requirement for 2026-31 is **15,693** homes. Table 7.14 displays this requirement disaggregated across five local authority clusters, showing that around half of the need is within the Eastern Scotland region.

Table 7.14: Annual gross affordable housing requirement 2026-31, core scenario.

Local authority cluster	Step one: Backlog	Step two: Newly arising	Step three: Net affordable supply	Unadjusted annual affordable requirement	Step four: Positive annual gross affordable requirement
North Eastern Scotland and Tayside	2,246	3,987	4,389	1,844	2,158
Highlands and Islands	1,192	1,652	1,534	1,310	1,310
Eastern Scotland	4,518	8,939	5,597	7,860	7,860
Southern Scotland	2,125	4,654	5,066	1,713	2,011
West Central Scotland	3,836	8,659	10,223	2,272	2,354
Scotland	13,917	27,891	26,809	14,999	15,693

There is some sensitivity around this estimate based upon the model assumptions. Some sources of sensitivity have already been discussed: the proportion of affordable lettings used to accommodate homeless households, the uncertainty of local authority household income estimates, and the assumption that available re-lets will remain below their pre-pandemic levels. As discussed above, we could reasonably expect the requirement to vary within the region of plus or minus 400 homes depending upon the accuracy of our household income estimates, and to be around 400 homes lower if the average time a social home remains empty was to be reduced. Moreover, if we assume a greater proportion of newly arising homeless applications result in a social let, the estimate could be as high as 18,831.

There are further sensitivities to the model that relate to our core scenario's assumed growth rate for household numbers, incomes, house prices and rents. Although we have adopted the HNDA tool default assumptions for our core scenario, there remains the possibility that reality will deviate from these assumptions. To illustrate the sensitivity of the estimate to deviations in these scenarios, we model four further scenarios, which are again based upon the scenarios provided by the HNDA tool:

1. **High-high:** high population growth-high price growth - household growth tracks the high-population growth projection, house prices and rents grow 2.9% annually
2. **Low-low:** low population growth-low price growth - household growth tracks the low-population growth projection, house prices and rents grow 0.3% annually
3. **High-low:** high population growth-low price growth - household growth tracks the high-population growth projection, house prices and rents grow 0.3% annually
4. **Low-high:** low population growth-high price growth - household growth tracks the low population growth projection, house prices and rents grow 2.9% annually

Table 7.15 displays the gross affordable housing requirement under each of these scenarios, plus our core scenario for comparison. The upper bound estimate is 19,493 in the high-high scenario and the lower bound is 11,254 in the low-low scenario. Table 7.15 suggests that the requirement is more sensitive to variation in the rate of household growth than variation in projected house price and rental growth. Moreover, the requirements in Eastern Scotland and West Central Scotland exhibit the greatest variation between scenarios given they are the areas of highest projected growth in household numbers.

Table 7.15: Gross affordable housing requirement by scenario

Cluster	Scenario (Population growth - price growth)				
	Core	High-High	Low-Low	High-Low	Low-High
North Eastern Scotland and Tayside	2,158	2,830	1,454	2,706	1,469
Highlands and Islands	1,310	1,498	1,162	1,448	1,184
Eastern Scotland	7,860	9,198	6,189	8,954	6,249
Southern Scotland	2,011	2,301	1,663	2,227	1,681
West Central Scotland	2,354	3,666	786	3,496	797
Scotland	15,693	19,493	11,254	18,831	11,380

7.7.1. Explaining the growth in affordable housing requirement

Table 7.16 compares the components of the model with their 2020 equivalents. It shows that gross affordable housing need has increased by 48.23% relative to the gross requirement in the 2020 report. It is worth highlighting that although the requirement varies between scenarios, in every scenario outlined in section 7.7 the gross requirement is higher than the core scenario from the 2020 report i.e. 10,586.

Table 7.16 : Core model outputs comparison with 2020 model

Report	Report		Change (%)
	2020	2025	
Backlog need	9,917	13,917	40.33
Newly arising	26,891	27,891	3.72
Supply of affordable lettings	28,510	26,809	-5.97
Positive need	10,586	15,693	48.23

Table 7.16 also shows the reasons for this increase. Backlog need has increased by 40.33%, which is the principal reason for the increased gross requirement. Within the components of backlog need, open homelessness cases have increased by 9,328 households relative to the figures in the 2020 report. Homelessness affects the gross requirement via two mechanisms - backlog need and expected cases of homelessness - and this has driven the 3.72% increase in expected newly arising need. Although our regional clusters are not directly comparable to those used in 2020, it is evident that the majority of the growth in homelessness between 2020 and 2025 has occurred in Eastern Scotland.

Backlog need due to inadequate housing has also risen sharply to 39,749 households, an increase of 10,681 households (36.7%) relative to the 2020 figure. It is worth noting that, with the exception of overcrowding, the SHCS has also reported a significant increase in each of our indicators of inadequate housing relative to the figures in the 2020 report (see Table 7.2). Consequently, the increase in inadequate housing is unlikely to be an artefact of our MRP estimation method and is corroborated by other sources.

As shown by Table 7.16, there has been a decline in the supply of affordable lettings of 5.97%, reducing the expected capacity of the existing stock to meet need. Our additional analysis suggests this is overwhelmingly the result of a decline in the rate at which properties are becoming empty. Improving the average number of days they are empty would have only a modest impact on the housing requirement.

Finally, these trends compound one another to increase the overall housing requirement. For example, the largest increase in homelessness cases has occurred in Eastern Scotland. But Eastern Scotland has a proportionately smaller SRS than other clusters with similarly high numbers of homelessness cases e.g. West Central Scotland. In other words, backlog need has increased in areas with less capacity to absorb need within the existing SRS stock.

Consequently, while the increase in estimated need is large, it is aligned with our expectations from the preceding chapters. Such expectations included: increased backlog need from rising homelessness; increased backlog need from affordability pressure experienced by private renters; continued growth in the number of households; and a declining number of re-lets in the SRS as fewer homes become empty.

The findings from the model are therefore clear, under a range of plausible scenarios there is an unavoidable requirement for significant investment in the affordable housing sector to meet housing need. In the next chapter we consider the funding implications of this finding.

8. Policy and funding implications

8.1. Funding affordable housing

In this section we consider the funding implications of the modelling. Substantial government funding will be required to deliver the homes necessary to meet affordable housing need. Given that need is projected to be higher than in 2020, the level of funding will also need to be higher. However, the recent history of delivery in the AHSP suggests that it is necessary to modify the approach taken in the 2020 report to provide an indicative budget. Specifically, we amend the 2020 method by varying the funding estimates according to a set of potential inflationary scenarios. We also present an alternative approach to estimating the level of grant required which accounts for the role of councils in delivering new homes and the delivery of homes in rural areas.

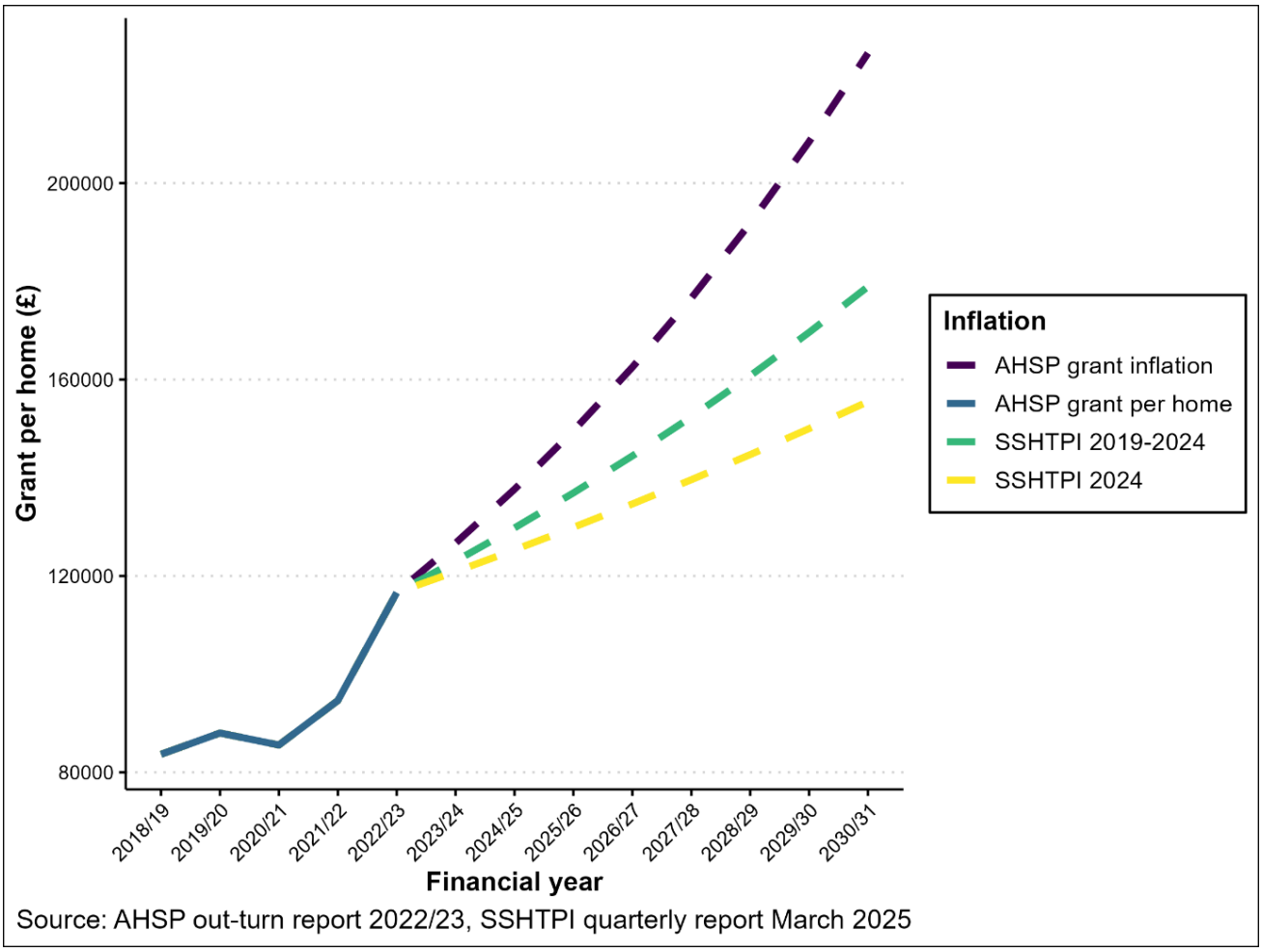
The recent history of the AHSP suggests that affordable housing delivery has been vulnerable to macroeconomic and fiscal shocks, most notably the historically high rate of construction inflation experienced in recent years. Government funding needs to account for the potential for inflationary pressure to endure. The cost of providing affordable housing between 2020-2025 outpaced the expectations of the previous report, influenced by shortages of construction labour and materials, and the high inflation period occurring in 2022. This was reiterated in our stakeholder interviews. One interviewee suggested that the necessary budget for the forthcoming Parliament would be *"double [the previous AHSP budget] or more [...] What we could deliver for £100,000 of grant, you'd now need £180,000"* (local authority employee).

Figure 8.1 displays the rising level of grant required to construct affordable housing, and the implications for future provision. Figure 8.1 shows the average AHSP grant per home which increased from £83,660 in 2018/19 to £116,601 in 2022/23, an increase of 39.37% overall. Figure 8.1 then projects average grant per home forward according to three inflationary scenarios:

1. 8.65% annually, which represents a continuation of recent trends in grant per home inflation reported above
2. 5.50% annually, which is the average annual construction inflation rate between Q4 2019 and Q4 2024 according to the Scottish Social Housing Tender Price Index (SSHTPI) reported by Scottish Government
3. 3.66% annually, which is the rate of construction inflation according to the SSHTPI for 2024

According to these inflationary scenarios, by 2030/31 the average grant per home could range from £226,502 in scenario 1 to £155,509 in scenario 3. Failing to account for the potential for inflationary pressure to continue could result in an underestimate of the model's funding requirements. As such, we present the level of funding necessary to meet housing need under different inflationary scenarios.

Figure 8.1. AHSP average grant per home by inflation scenario



Source: AHSP out-turn report 2022/23, SSHTPI quarterly report March 2025

In addition to inflationary pressure, AHSP funding needs to be sensitive to the changing nature of need and variation between regional clusters in their patterns of housing delivery. As the increased level of overall need is largely driven by increased backlog need, and households in backlog need will require social housing in most cases, AHSP funding needs to be sufficient for a significant increase in social rented homes. The AHSP budget also needs to be sensitive to the higher costs of housing delivery in rural areas and the Highlands and Islands. And it should be sensitive to the larger role for councils in delivery in certain areas e.g. Aberdeen City. Taking these factors into consideration, in this section we present two contrasting approaches to modelling the funding implications of our estimates of affordable housing need.

The first approach is similar to the approach taken in the 2020 report (hereon the '2020 method'). This approach begins with the benchmarks for the financial support of below-market housing through the AHSP published by the Scottish Government. But where the 2020 report multiplied the contemporaneous benchmark values by estimated need, in this report we uprate the current benchmarks by our inflationary scenarios. Similar to the 2020 report, we add £7,015 to the benchmark values to account for additional quality measures. These quality measures include £2,455 for homes delivered to the Energy for Space Heating requirements of the 2019 Building Regulations, and £4,560 for homes delivered to the updated provisions for energy performance, ventilation and assessment of overheating risk introduced through building regulations in February 2023. Table 8.1 presents the average housing investment benchmark for a 3-person equivalent home over the five-year period, inclusive of the additional quality measures. This is likely to be a more accurate reflection of the future costs of delivery than using the current benchmarks given the effect of inflation and that many homes will be delivered above the benchmark rate. Evidence supporting this approach is that 60% of the homes approved for AHSP grant in the 2022/23 out-turn report were approved above the contemporaneous benchmark, compared to 27% being delivered below the benchmark and 13% at the benchmark. Furthermore, average grant per home was £116,601 in 2022/23, which is very close to the RSL social rent city and urban benchmark under the 5.50% inflation scenario.

This 2020 method takes the RSL city and urban grant benchmarks under the inflationary scenarios outlined in Table 8.1 and multiples them by projected need for each of the regional clusters, with the exception of the Highlands and Islands cluster where we use the RSL West Highland, Island authorities, and remote/rural Argyll benchmark. The RSL city and urban and RSL highlands benchmarks in Table 8.1 are applied under three different tenure scenarios:

- 70% social rent, 30% mid-market rent (MMR)
- 75% social rent, 25% MMR
- 100% social rent

The 2020 report modelled scenarios with a 50:50 split and 66:34 split between social rent and MMR. However, in this report we set our lower bound scenario as a 70:30 split between social rent and MMR to reflect the current AHSP objective for at least 70% social rent. Moreover, given the dramatic rise in affordable housing need presented in the previous chapter, it is reasonable to conclude that neither a 50:50 nor a 66:34 split would provide sufficient social rented housing. We also present a 75:25 scenario as our central scenario. A 75:25 split is close to current AHSP delivery - according to data from the 2022/23 AHSP out-turn report, 77.9% of programme approvals were for social rented homes, and 75.9% of starts were social rented.

Table 8.1: Assumed benchmarks, inclusive of quality measures, under different inflation scenarios

Provider and tenure	Geography	Inflated benchmark: 3.66% inflation	Inflated benchmark: 5.50% inflation	Inflated benchmark: 8.65% inflation
RSL social rent	City And Urban	£110,025.47	£113,882.85	£120,814.95
RSL social rent	Other Rural	£116,628.44	£120,733.08	£128,109.52
RSL social rent	Highlands	£133,137.49	£137,860.33	£146,347.75
Council social rent	City And Urban	£101,441.71	£104,977.66	£111,332.11
Council social rent	Other Rural	£106,724.52	£110,458.29	£117,168.25
Council social rent	Highlands	£116,628.44	£120,733.08	£128,109.52
RSL MMR	City And Urban	£77,670.15	£80,315.93	£85,070.68
RSL MMR	Other Rural	£81,631.72	£84,425.85	£89,447.19
RSL MMR	Highlands	£84,273.12	£87,166.16	£92,365.26
Council MMR	City And Urban	£71,726.72	£74,149.94	£78,504.73
Council MMR	Other Rural	£75,028.74	£77,575.62	£82,152.61
Council MMR	Highlands	£77,009.53	£79,630.58	£84,340.86

Source: Author's calculations of Scottish Government affordable housing investment benchmarks, AHSP out-turn report 2022/23, Scottish Social Housing Tender Price Index (SSHTPI)

Note: Inflation is accounted for by inflating the current benchmark annually by the relevant percentage, and then taking the five-year average

The second approach (hereon the 'regional variation method') accounts for variation between regions in terms of council delivery and that some proportion of the AHSP will be delivered in 'other rural' areas, where the grant benchmarks are higher than city and urban areas. The 'regional variation method' utilises data from the 2022/23 AHSP out-turn report to calculate the proportion of AHSP homes delivered by provider type (i.e. RSLs and councils) and geography (i.e. other rural areas and city and urban areas).

The regional variation method proceeds as follows:

1. Calculate the proportion of total social rented homes delivered by provider type within each cluster, i.e. delivery by RSLs and councils respectively
2. Repeat the step above for MMR homes
3. Calculate the proportion of homes delivered in city and urban areas and other rural areas across the AHSP as a whole, excluding the Highlands and Islands cluster and Glasgow City[7]
4. For a given tenure scenario, multiply the affordable housing requirement in each region by the proportions calculated in steps 1-3, which provides an estimate of the housing requirement by tenure, provider type and geography for each region
5. Multiply the estimated housing requirement from step 4 by its respective benchmark value from Table 8.1, with the exception of the Highland and Islands cluster which is multiplied by the Highlands benchmark in Table 8.1
6. Repeat steps 1-5 for each tenure scenario

While the regional variation method is more complex than the 2020 method, it still relies upon some simplifying assumptions due to lack of data. The strongest assumption is step 4 where the proportion of homes delivered in 'city and urban' and 'other rural' areas is assumed to be constant across local authorities. However, the out-turn report only reports the distribution of new homes by geography across Scotland as a whole, whereas data on new homes by provider type is provided per local authority. Consequently, this simplifying assumption is applied in the absence of more granular data. Table 8.2 displays the proportions of RSL and council delivery by tenure within regional clusters. Table 8.3 displays the proportion of homes by geography across Scotland. For the regional variation method we also vary the funding estimate according to the three inflationary scenarios discussed above.

[7] The AHSP out-turn report publishes data on the number of approvals by the geographic benchmark against which they were assessed, with the exception of Glasgow City. The rationale is that the Glasgow City Council has a separate standard that it requires RSLs to deliver to and undertakes detailed appraisals of all projects. Yet in the absence of data on Glasgow City specifically, we assume the proportions from step 3 and reported in Table 8.2 apply to Glasgow City too.

Table 8.2: Delivery by provider type per region and tenure

Cluster	Social rent		Mid-Market Rent	
	RSL proportion	Council proportion	RSL proportion	Council proportion
North Eastern Scotland and Tayside	55.82%	44.18%	100.00%	0.00%
Highlands and Islands	37.69%	62.31%	85.59%	14.41%
Eastern Scotland	50.63%	49.37%	74.28%	25.72%
Southern Scotland	31.16%	68.84%	100.00%	0.00%
West Central Scotland	66.85%	33.15%	100.00%	0.00%

Source: AHSP out-turn report 2022/23

Table 8.3: Delivery by geography, excluding Glasgow City

Geography	Scotland	Scotland excluding Highlands and Islands
City and Urban	75.68%	77.62%
Other Rural	21.82%	22.38%
West Highland, Island Authorities and Remote/Rural Argyll	2.50%	

Source: AHSP out-turn report 2022/23

Table 8.4 presents the funding estimates from these calculations, and their variation according to the three inflationary scenarios, for our core need scenario in the previous chapter i.e. 15,693 homes. Given the higher level of backlog need estimated in the previous chapter, and the discussion regarding inflation, we consider our central scenario to be a programme delivering 75% social rent and 25% MMR, with 5.50% annual inflation, and funding calculated using the regional variation method. According to this scenario, the funding requirement is **£1.64bn annually, and £8.20bn over the next Parliament**.

Table 8.4 also shows that the lowest funding estimate is £1.56bn annually, and £7.80bn over the Parliament, which is to deliver a programme of 70% social rent and 30% MMR assuming 3.66% inflation annually. The highest funding estimate is £1.93bn annually, and £9.65bn over the Parliament, which is to deliver a programme of 100% social rent assuming 8.65% inflation annually, calculated according to the 2020 method. However, thirteen of our eighteen modelled scenarios are in the region of £1.6-1.83bn annually, or £8-9.2bn over five years. Our key message, therefore, is that for the AHSP to have a reasonable prospect of meeting affordable housing need over the next five years, the **funding should be within the range of £8-9.2bn**. It is worth noting that the 2020 method arrives at a very similar, but slightly higher, estimate of the funding requirements than the regional variation due to the lower benchmarks for council delivery. The similarity of the estimates should provide confidence that this recommendation is robust to the usage of different methods and that they give a realistic depiction of the investment required.

The figures presented in Table 8.4 are in relation to the central scenario for affordable housing need presented in the previous chapter. Should affordable housing need differ from the central scenario then the funding requirement may be higher or lower. In the Appendix we replicate Table 8.4 for both the high-high need scenario and the low-low need scenario. Assuming a 75:25 tenure split, 5.50% inflation and calculated using the regional variation method, the cost of the high-high need scenario would be £2.04bn annually and £10.18bn over the five-year period. For the low-low scenario, the equivalent programme would cost £1.18bn annually and £5.88 over the five-year period.

Table 8.4: Estimated programme funding costs under different tenure and inflationary scenarios, and according to each method

Tenure scenario (social rent: MMR)		2020 method			Regional variation method		
		3.66%	5.50%	8.65%	3.66%	5.50%	8.65%
70:30	Annual	£1,598,121,909	£1,653,843,550	£1,753,981,035	£1,559,782,903	£1,614,068,884	£1,711,626,342
	5-year programme	£7,990,609,546	£8,269,217,751	£8,769,905,174	£7,798,914,514	£8,070,344,421	£8,558,131,710
75:25	Annual	£1,624,850,048	£1,681,571,774	£1,783,506,515	£1,583,837,687	£1,639,023,647	£1,738,198,457
	5-year programme	£8,124,250,238	£8,407,858,871	£8,917,532,576	£7,919,188,435	£8,195,118,233	£8,690,992,285
100:00	Annual	£1,756,906,466	£1,818,574,024	£1,929,396,930	£1,702,542,170	£1,762,173,979	£1,869,338,435
	5-year programme	£8,784,532,328	£9,092,870,119	£9,646,984,648	£8,512,710,852	£8,810,869,895	£9,346,692,173

Source: Author's calculations of Scottish Government affordable housing investment benchmarks, AHSP out-turn report 2022/23, SSHTPI

8.2. Funding - Additional Considerations

Although it is not possible to model their impact formally, it is worth briefly addressing several additional factors which may have an impact on per unit costs. Here we briefly discuss the potential impact of building to net zero standards, construction labour shortages, demolitions and regeneration activity, and land use planning.

8.2.1. Impact of the New Build Heat Standard

In Scotland the New Build Heat Standard (NBHS) requires that new homes and buildings constructed with building warrants applied for on or after 1 April 2024 must achieve zero direct emissions for space and water heating/cooling. In practice this means that gas, oil, or other fossil fuel-based heating systems cannot be used in new construction or significant conversions. Construction must instead use low-carbon heating methods such as ground- or air-source heat pumps, connection to district heat networks (even if powered using fossil fuels), electric heaters, 100% hydrogen systems, solar thermal systems or similar. A full cost benefit analysis produced as part of the policy's impact assessment concluded that the policy would generate positive net present social value (NPSV) thereby representing a net beneficial impact (Scottish Government, 2023c). This however relates to all impacts on social welfare and all costs of the policy. To understand the potential impact on construction inflation requires an assessment of the costs of installing NBHS-compliant systems in new properties versus conventional systems. Using data on average new build house prices and the costs from a DECC-commissioned study by Delta-ee (Department for Energy & Climate Change, 2016) of heating technology and installation prices (adjusted to 2021 prices), the anticipated costs of compliant zero emission heating systems in a new build property could be on average £8,425 more than a gas central heating installation. This would add around 3% to building costs (Scottish Government, 2023c), which are assumed to be passed on directly to purchase prices. The impact assessment found that the effect on running costs for householders could not be concluded definitively. The marginal cost advantage on energy bills of net zero compliant heating technologies depends to some extent on the respective prices of electricity and gas, the latter of which can be particularly volatile.

8.2.2. Impact of the Social Housing Net Zero Standard (SHNZS)

In addition to the NBHS, the Scottish Government has consulted on a new Social Housing Net Zero Standard (SHNZS) to replace the existing Energy Efficiency Standard for Social Housing (EESSH2). The proposed standard would require social landlords to

- increase the fabric efficiency of properties (the amount of energy required to heat a property (measured in kWh/m2 per year) by 2033 (with consultation on options as to the target level); and
- install a clean heating system (as per the NBHS) in all social homes by a backstop date of 2045, with consultation options on how best to encourage social landlords to undertake works and phase activity rather than leave compliance until close to 2045.

Scottish Government (2023d) estimates that the average cost to convert an existing home to clean heating is around £14,000 and an average cost to upgrade the fabric energy efficiency is around £4,500 per home. The SHNZS consultation estimates a total capital cost of upgrading the existing stock to be £5.88 billion, whilst noting that social landlords can apply for grant funding from the Social Housing Net Zero Fund and other schemes which can cover a portion (but not all) of the required costs.

Whilst the per unit costs of SHNZS-compliant new housing should be cheaper than the per unit costs of retrofitting the existing stock, making existing stock compliant will require that social housing providers use some of their own resources and will place an additional call on the available capacity of labour and supply chains.

8.2.3. Construction labour

The ability for affordable housing providers to secure their construction supply chain could impact the costs of delivery. In the shorter term, if the construction industry is unable to secure an adequate skilled labour supply, this may have an impact on build rates and/or costs. In the longer term, this impact may be moderated by skills and labour market activation programmes to build up a pool of skilled construction labour. The Scottish construction sector has expressed some alarm about the potential impact of the UK government's migration white paper (SELECT, 2025). The impact of policies that restrict migration into labour markets elsewhere in the UK could precipitate higher levels of outmigration of Scottish construction labour to those areas. If the housing supply chain is unable to recruit sufficient workforce at current pay levels, the upwards pressure on pay could add to unit costs.

8.2.4. Demolitions and scheme regeneration

Social housing providers continue to undertake strategic regeneration of schemes and estates where there are opportunities to better configure the housing stock to meet needs in their area and where remodelling or retrofit of the existing stock to modern standards may be unviable. AHSP funding is often combined with other sources such as local strategic housing funds, providers' own resources, and Scottish Government regeneration grants like Regeneration Capital Grant Funding (RCGF) to enable the demolition and replacement of social homes. Where a provider considers it impossible or unviable to retrofit stock to the proposed SHNZS (see above) the demolition and regeneration of a site may be the most cost-effective alternative. Where this occurs, the rate of demolitions in a local area may increase. As noted earlier, the rate of demolitions is outside the scope of the needs model and any housing needs that arise as a result of demolitions are assumed to form part of the future homeless cases. It is impossible to model these potential impacts precisely given the high degree of uncertainty around the eventual relevant standards (including SHNZS) and the time scales over which providers will seek to comply with them. It is acknowledged, however, that any significant increases in demolitions as a result of regeneration and net zero compliance could increase gross requirements in future years, and any further iterations of this model should seek to monitor this.

8.2.5. Land use planning

As noted in the discussion of the policy context in Chapter 4 of this report, recent reforms to the national planning framework (NPF4) have given rise to concerns that land requirements based on minimum unit numbers derived from MATHLR and the HNDA process could be based on an underestimate of backlog need. Additionally, as the land requirements are for all tenures, any underestimate could in principle lead to higher competition for available land in the private housebuilding market with a knock-on effect on the costs of acquiring sites for social and affordable housing developments. There are specific concerns about how the lack of sufficient granularity of analysis informing NPF4 could impact on rural areas in particular. For both these reasons it would be prudent to consider the funding requirements discussed in this Chapter as susceptible to further increases.

References

Bell, A., Fairbrother, M. & Jones, K. (2019). Fixed and random effects models: making an informed choice. *Quality & Quantity*, 53, 1051–1074. DOI: 10.1007/s11135-018-0802-x

Bramley, G., Khofi Karley, N. and Watkins, D. (2006) *Local Housing Need and Affordability Model for Scotland – Update (2005 based)*. Edinburgh: Communities Scotland.

Bramley, G., Pawson, H., White, M., Wakins, D., Pleace, N. (2010). *Estimating Housing Need*. Department for Communities and Local Government.

British Property Federation (2023). *Assessment of Rent Freeze*. Available at: bpf.org.uk/media/6181/assessment-of-of-scotlands-rent-freeze-and-impacts.pdf [Accessed 15 July 2025].

Bruch. C. and Felderer, B. (2023). Applying multilevel regression weighting when only population margins are available. *Communications in Statistics - Simulation and Computation*, 52(11), 5401-5422. DOI: 10.1080/03610918.2021.1988642

COSLA (2024) *Scotland's Housing Emergency*. COSLA. Available at: www.cosla.gov.uk/__data/assets/pdf_file/0021/54561/LD240109-Housing-Emergency.pdf [Accessed: 11 August 2025].

Department for Energy & Climate Change (DECC) (2016). *The scope for cost reductions in a mass market for low carbon heating technologies*. Available at: www.gov.uk/government/publications/the-scope-for-cost-reductions-in-a-mass-market-for-low-carbon-heating-technologies [Accessed: 14 July 2025].

Dunning, R., Ferrari, E., Hoolachan, J., Keskin, B., Moore, T., O'Brien, P. and Powell, R. (2020). *Affordable Housing Need in Scotland Post-2021*. Scottish Federation of Housing Associations, CIH Scotland, Shelter Scotland. Available at: www.cih.org/media/wu1jkp2e/affordable-housing-need-in-scotland-post-2021.pdf [Accessed: 14 July 2025].

Ferrari, E, Leahy Laughlin, D and Watkins, C (2011) Planning and the housing market: Reflections on Strategic Housing Market Assessments in England, *Town Planning Review*, 82, 4, 393-423.

Gibb, K. (2024) *Housing subsidy's long-term shift from supply to demand and what might be done about it*. CaCHE: Glasgow. Available at: housingevidence.ac.uk/wp-content/uploads/2024/06/Housing-subsidys-long-term-shift-from-supply-to-demand-and-what-might-be-done-about-it-v2.pdf. [Accessed: 11 August 2025].

Gibb, K and James, G (2021) *Housing in Scotland: Evidence for Scottish Government 2021-26*. CaCHE: Glasgow.

Gibb, K., Young, G. & Earley, A. (2024) *Sustainable Housing Policy in Scotland: Re-Booting the Affordable Housing Supply Programme*, UK CACHE. Available at: housingevidence.ac.uk/wp-content/uploads/2024/10/031024-JRF-AHSP-Scotland-v3.pdf [Accessed: 14 July 2025].

Homes for Scotland (2024). Scotland's SME Home Builders 2024: Data Review and Industry Insights. Available at: homesforscotland.com/download/scotlands-sme-home-builders-2024-data-review-and-industry-insights/ [Accessed: 14 July 2025].

Housing Investment Taskforce (2025) *Main Report*. Available at: www.gov.scot/binaries/content/documents/govscot/publications/independent-report/2025/06/housing-in-

vestment-taskforce-report/documents/housing-investment-taskforce-report/housing-investment-task-force-report/govscot%3Adocument/housing-investment-taskforce-report.pdf [Accessed: 14 July 2025].

James, G., Satsangi, M., and Lawson, V. (2024) *Land supply for housing in rural Scotland*. Scottish Land Commission.

Leemann, L. and Wasserfallen, F. (2017). Extending the Use and Prediction Precision of Subnational Public Opinion Estimation. *American Journal of Political Science,* 61, 1003-1022. DOI: 10.1111/ajps.12319

Lovelace, R. and Dumont, M. (2016). *Spatial Microsimulation with R*. Taylor & Francis: New York.

Marshall, M., Hincks, S., Powell, R. (2023). Housing and Welfare in England. In: Grander M, Stephens M (eds.). *Routledge Handbook of Housing and Welfare*. Routledge.

Padley, M. and Stone, J. (2023). *A Minimum Income Standard for the United Kingdom in 2023*. Joseph Rowntree Foundation. Available at: www.jrf.org.uk/a-minimum-income-standard-for-the-united-kingdom-in-2023 [Accessed: 14 July 2025].

Powell, R., Dunning, R., Ferrari, E and McKee, K. (2015). *Affordable Housing Need in Scotland Final Report – September 2015*. Scottish Federation of Housing Associations, CIH Scotland, Shelter Scotland. Available at: assets.ctfassets

net/6sqqfrl11sfj/3crPbGnATxr5xUupWO5Okx/4df3e2b90fc524e1104c43baf4b16111/7909_Final_Housing_Needs_Research.pdf [Accessed: 14 July 2025].

Reid, G., Mackay, D., Crawford, C. and Belford, H. (2020) *The Role of Land in Enabling New Housing Supply in Rural Scotland,* Scottish Land Commission.

Rettie (2025). *Spring Market Briefing March 2025*. Rettie. Available at: rettiecdn.co.uk/722691/spring_briefing_2025_final.pdf [Accessed: 6 August 2025].

Ryder, B. (2025). Still waiting for a home: Stories of people waiting for social housing. Scottish Federation of Housing Associations & Wheatley Group & Altair. Available at: www.sfha.co.uk/sites/default/files/2025-03/127462.pdf [Accessed: 14 July 2025].

Savills (2025) *Revised House Price Forecasts: 2025-2029*. Savills. Available at: www.savills.co.uk/research_articles/229130/379365-0 [Accessed: 6 August 2025].

Scottish Government (2019) *Local Housing Strategy Guidance*. Scottish Government. Available at: www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2019/09/local-housing-strategy-guidance-2019/documents/local-housing-strategy-guidance-2019/local-housing-strategy-guidance-2019/govscot%3Adocument/local-housing-strategy-guidance-2019.pdf [Accessed: 6 August 2025].

Scottish Government (2020) *Housing Need and Demand Assessment: A Practitioner's Guide*. Edinburgh: Scottish Government.

Scottish Government (2021) *Housing to 2040*. Scottish Government. Available at: www.gov.scot/publications/housing-2040-2/pages/2/ [Accessed: 14 July 2025].

Scottish Government (2023a) *Rural and islands housing: action plan*. Scottish Government. Available at: www.gov.scot/publications/rural-islands-housing-action-plan/ [Accessed: 14 July 2025].

Scottish Government (2023b). *National Planning Framework 4*. Scottish Government. Available at: www.gov.scot/publications/national-planning-framework-4/pages/1/ [Accessed: 14 July 2025].

Scottish Government (2023c). *New Build Heat Standard (NBHS): Final Business and Regulatory Impact Assessment (BRIA)*. Scottish Government. Available at: www.gov.scot/publications/new-build-heat-standard-nbhs-2024-business-regulatory-impact-assessment-bria/documents/ [Accessed: 14 July 2025].

Scottish Government (2023d). *Social Housing Net Zero Standard: Consultation*. Scottish Government. Available at: www.gov.scot/publications/consultation-new-social-housing-net-zero-standard-scotland [Accessed: 14 July 2025].

Scottish Government (2024a) *Affordable Housing Supply Programme: Affordable housing investment benchmarks*. Available at: www.gov.scot/publications/affordable-housing-supply-programme-affordable-housing-investment-benchmarks/pages/baseline-benchmarks/ [Accessed: 14 July 2025].

Scottish Government (2024b) *Acquisition Programme: information*. Available at: www.gov.scot/publications/acquisition-programme-information/pages/types-of-purchase-supported/ [Accessed: 14 July 2025].

Scottish Government (2024c) *More homes*. Available at: www.gov.scot/policies/more-homes/innovative-financing/ [Accessed: 14 July 2025].

Scottish Government (2024d) *Main tables - Homelessness in Scotland: 2023-24. Table 58.* Scottish Government. Available at: www.gov.scot/publications/homelessness-in-scotland-2023-24/documents/. [Accessed: 6 August 2025].

Scottish Government (2025a). *Housing Statistics for Scotland Quarterly Update: New Housebuilding and Affordable Housing Supply to end March 2025.* Scottish Government. Available at: www.gov.scot/publications/quarterly-housing-statistics-june-2025/pages/affordable-housing-supply-programme/ [Accessed: 14 July 2025].

Scottish Government (2025b) *Open Market Shared Equity Scheme*. Available at: www.mygov.scot/open-market-shared-equity-scheme [Accessed: 14 July 2025].

Scottish Government (2025c) *Scotland's Fiscal Outlook The Scottish Government's Medium-Term Financial Strategy 2025*. Scottish Government. Available at: www.gov.scot/publications/scotlands-fiscal-outlook-scottish-governments-medium-term-financial-strategy-3/ [Accessed: 6 August 2025].

Scottish Housing News (2025) *End of rent cap sparks concerns over rising costs for tenants*, 1st April 2025. Available at: www.scottishhousingnews.com/articles/end-of-rent-cap-sparks-concerns-over-rising-costs-for-tenants [Accessed: 14 July 2025].

Scottish Housing Regulator (2024). *National Report on the Scottish Social Housing Charter - Headline Findings - 2023-2024*. SHR. Available at: www.housingregulator.gov.scot/landlord-performance/national-reports/national-reports-on-the-scottish-social-housing-charter/national-report-on-the-scottish-social-housing-charter-headline-findings-2023-2024/#section-1 [Accessed: 14 July 2025].

Scottish Housing Regulator (2025). *Our risk assessment of social landlords: summary outcomes - March 2025*. SHR. Available at: www.housingregulator.gov.scot/landlord-performance/the-risks-we-will-focus-on/our-risk-assessment-of-social-landlords-summary-outcomes-march-2025/#section-1 [Accessed: 14 July 2025].

Scottish Human Rights Commission (2024). Economic, Social and Cultural Rights in the Highlands and Islands. Available at: www.scottishhumanrights.com/media/2881/main-report_economic-social-and-cultural-rights-in-the-highlands-and-islands.pdf [Accessed: 14 July 2025].

Scottish Land Commission (2021) Legislative proposals to address the impact of Scotland's concentration of land ownership. Available at: www.landcommission.gov.scot/downloads/601acfc4ea58a_Legislative%20proposals%20to%20address%20the%20impact%20of%20Scotland%E2%80%99s%20concentration%20of%20land%20ownership%20-%20Discussion%20Paper%20Feb%202021.pdf [Accessed: 14 July 2025].

SELECT (2025). *Immigration plans could be 'ticking time bomb' for Scottish construction*. Available at: select.org.uk/SELECT/SELECT/Website/About/News/News_Content/2025/May25/Immigration-plans-Scottish-construction.aspx [Accessed: 14 July 2025].

Sims, R. and Allard, M. (2023). Locked Out: Local Housing Allowance and affordability in the private rented sector in Scotland. Crisis. Available at: www.crisis.org.uk/media/myxppkub/locked-out-local-housing-allowance-and-affordability-in-the-prs-in-scotland.pdf [Accessed: 14 July 2025].

SOLACE Scotland (2023). *Housing in Scotland: Current Context and Preparing for the Future July 2023.* SOLACE Scotland. Available at: solace.org.uk/wp-content/uploads/2023/07/Solace-Current-Context-and-Preparing-for-the-Future-1.pdf. [Accessed 8 August 2025].

South of Scotland Regional Economic Partnership (SoSREP) (2024). *South of Scotland Housing Action Plan*. Available at: www.southofscotlandrep.com/media/cncpfn4x/sos-rep-housing-action-plan-2024_digital-version.pdf [Accessed: 14 July 2025].

SPICe (2024) *Scotland's Housing Emergency*. Available at: spice-spotlight.scot/2024/06/27/scotlands-housing-emergency/ [Accessed: 14 July 2025].

SPICe (2025) *Affordable Housing Supply Programme, SPICe Briefing*. Available at: bprcdn.parliament.scot/published/2025/4/22/3913360a-6827-4452-9c13-9fe831cb053a/SB%2025-15.pdf [Accessed: 14 July 2025].

The Diffley Partnership and Rettie & Co. (2024). *Existing Housing Need in Scotland: A survey commissioned by Homes for Scotland*. The Diffley Partnership, Rettie & Co. and Homes for Scotland. Available at: homesforscotland.com/download/existing-housing-need-in-scotland/?wpdmdl=4635&refresh=65acfb449d0481705835332 [Accessed: 14 July 2025].

The Scottish Parliament (2024) *Housing Emergency and Housing to 2040, a review by the Local Government, Housing and Planning Committee*. Available at: www.parliament.scot/chamber-and-committees/committees/current-and-previous-committees/session-6-local-government-housing-and-planning/business-items/housing-to-2040-and-housing-emergency [Accessed: 14 July 2025].

The Scottish Parliament (2025) *Housing Inquiry, 1st Report, 2025 (Session 6)*. Available at: bprcdn.parliament.scot/published/LGHP/2025/5/15/5e27adfd-6d08-4d34-a701-17fc4ffe5f83/LGHPS062025R10.pdf [Accessed: 14 July 2025].

Wang, W., Rotcschild. D., Goel, S., Gelman, A. (2015). Forecasting elections with non-representative polls. *International Journal of Forecasting*, 31(3), 980-991. DOI: 10.1016/j.ijforecast.2014.06.001

Watson, A., James, G., Gibb, K. (2023). Rapid Rehousing Transition Plans: Assessing the affordability of the private rented sector for LHA recipients in Scotland. CIH Scotland, Fife Council and UK Collaborative Centre for Housing Evidence. Available at: www.cih.org/media/szslk3vv/0362-rapid-rehousing-transition-plans-report-final.pdf [Accessed: 14 July 2025].

Watts-Cobbe, B., et al, (2024) *The homelessness monitor: Scotland 2024*. Available at: www.crisis.org.uk/media/ogcj2sun/homelessness-monitor-scotland_report2024_v7.pdf [Accessed: 14 July 2025].

Wilmore, J. (2025) Sector 'wary' as report says for-profits should be allowed in Scotland, *Inside Housing* (12th June 2025). Available at: www.insidehousing.co.uk/news/sector-wary-as-report-says-for-profits-should-be-allowed-in-scotland-92196 [Accessed: 14 July 2025].

Appendix

Multilevel regression with post-stratification and iterative proportional fitting

The previous reports utilised three years of pooled SHCS data to estimate the level of inadequate housing and fuel poverty in local authorities. But due to the pandemic preventing physical surveys of dwellings in 2020 and 2021, we were only able to access the 2022 and 2023 SHCS datasets. In the absence of sufficient sample sizes, we modelled our own local authority estimates using multilevel regression with post-stratification (MRP) and iterative proportional fitting (IPF).

In simple terms, MRP involves two broad steps:

1. Fit a hierarchical logit model predicting the relevant indicator of need, with predictors being variables that can be matched to a census variable, and random effects at a relevant geographic level
2. Post-stratify the results by multiplying the predicted probability from the model for a given demographic cell by the proportion of the population in each cell.

The output of stage two provides a population level estimate of the outcome for the given demographic cell. For example, the predictors in our model for homes below quality standards are: property age, Energy Performance Certificate (EPC) band, property type, tenure, urban/rural. And we have random intercepts at the local authority level. An example of a singular demographic cell would therefore be households where:

- property age = pre-1919
- EPC = E
- property type = detached
- tenure = social rented
- area = urban

The predicted probability of the outcome for a household fitting these criteria is multiplied by the proportion of households in this demographic cell within each local authority, which provides an estimate of the outcome for households in this cell in each local authority. Summing the estimates across all demographic cells in a local authority (i.e. all possible combinations of the predictors) provides the estimate of the outcome for each local authority. And summing the estimates of each local authority provides the estimate for Scotland.

The principal benefit of MRP is that it handles sparse cells effectively i.e. demographic cells with few or no respondents in the survey sample. The issue of sparse cells is evident in the SHCS local authority estimates, where historic SHCS data suggests that for each of our backlog need indicators some local authorities have no households experiencing said indicator i.e. no overcrowded households, no households in unsuitable housing etc. MRP handles sparse cells effectively as the hierarchical model 'borrows strength' from similar cells with many sampled units. In other words, the parameters in our hierarchical model are informed by the global average across Scotland and the average within local authorities, which produces more stable estimates (Bruch and Felderer, 2023; Wang et al., 2015).

In practice, there are several additional steps and challenges in MRP which we discuss here. Firstly, MRP requires an adequately fitting model. We use the SHCS 2023 survey for three of our four models, with random intercepts at the local authority level. The exception is the model for unsuitable homes, where we pool the 2022 and 2023 SHCS data to build the model again with random intercepts at the local authority level. We make an exception for the unsuitable homes model as this improved the precision of our estimates considerably. Using a single year of survey data produced very large, but uncertain, estimated effects for certain variables. And these large estimates subsequently had a disproportionate impact at the post-stratification stage, resulting in a very high overall projection of unsuitability in the population.

Model selection proceeded by fitting a model including several variables theoretically assumed to predict the outcome and available at the census level (e.g. tenure, property type, household type, household size, property size, primary heating source, economic status of household reference person, urban/rural). We also included EPC and property age in the initial models (see below for how we estimate their incidence in the population). Subsequently, we removed predictors with the smallest effect size until the model fit ceased to improve, as measured by reductions in the AIC statistic. It is worth highlighting that there will be omitted variables that could plausibly improve the model fit in some cases, but they are omitted by necessity due to being unavailable at the census level.

Secondly, post-stratification requires matching SHCS variables to analogous categories in the census. In some cases this is straightforward e.g. tenure. But with other variables it requires researcher judgement as to whether SHCS categories are equivalent to census categories. This was most clearly the case with household type and economic status. To match categories with the census we referred to descriptions of the variables in the documentation accompanying both the SHCS and the 2022 census. To avoid misclassification we adopted a conservative approach to household type, matching the lone parent, single working households and single retired households with their census equivalent and collapsing all other categories into an 'other'. For economic status the principal judgement was how to classify full-time students also classified as economically active in the census. We include full-time students who are economically active within the 'other' category that we created to collapse low frequency categories in SHCS within our models. We do so because households in full-time education in SHCS were collapsed into the 'other' category.

Thirdly, some important predictors of backlog need are not collected in the census - EPC and property age. For these variables we used the pooled local authority estimates from the 2017-2019 SHCS waves and applied a multiplier to inflate the household numbers to match the 2022 census household numbers. Although this will be an imperfect estimate, our judgement is that it will be a reasonable approximation given these variables will have changed relatively little in the recent past. And including them, accepting some marginal degree of error, is preferable to their exclusion given their importance to key outcomes e.g. fuel poverty.

Fourthly, post-stratification requires data on the joint distribution of the predictor variables within the population i.e. how many households are in each relevant demographic cell. But in practice it is common only to have access to their marginal distribution e.g. either the proportion of social rented households or the proportion of detached homes, but **not** the proportion of social rented households living in detached

houses. To overcome this challenge we used iterative proportional fitting (IPF, also known as 'raking') to simulate the joint distribution of our predictor variables. IPF is an algorithm used to estimate the cell values in a multi-dimensional table when only some marginal totals are known, by iteratively adjusting initial estimates to match each known marginal total until a convergence threshold is achieved. IPF provides a set of weights for each cell such that it can approximate the general population. We conduct IPF for each local authority separately, for each set of predictors for a given model, with the initialisation of the algorithm being the estimated joint distribution from the 2017-2019 SHCS waves using the local authority survey weights. Further details on the IPF procedure followed can be found at Lovelace and Dumont (2016).

To conduct post-stratification we multiply the modelled predicted probability by the number of survey respondents in each cell, weighted by their IPF weights, and divided by the number of households in the local authority population. A full technical description of this process is available in Bruch and Felderer (2023).

Finally, some households will experience multiple indicators of backlog need e.g. being overcrowded and in unsuitable housing. And we need to be able to disaggregate need by tenure for the stock-flow model. The final estimate of backlog need due to inadequate housing therefore needs to adjust for this double counting and variation across tenures. To do so we conduct two adjustments to the MRP figures. Firstly, we adjust for double counting by taking the product of the marginal distribution of each indicator of need within each local authority. In other words we take the product of our MRP estimates of overcrowding, below quality standards, and unsuitability as a proportion of total households. Taking the product of the marginal distributions has been shown to be a reliable method for estimating the population joint distribution where the variables are independent in the survey data (Leemann and Wasserfallen, 2017), which we confirm by regressing each indicator on one another to confirm there is no relationship. Secondly, we conduct a final IPF. The final IPF utilises the marginal distribution of three variables: tenure, fuel poverty (as estimated by MRP), and a binary indicator of inadequate housing (derived from the previous adjustment). We use IPF rather than taking the product, as per the previous step, as tenure, fuel poverty and inadequate housing are not independent of one another. We initialise the IPF algorithm using the pooled 2022 and 2023 SHCS data and conduct a separate IPF for each local authority. The subsequent IPF weights are used to calculate households in inadequate housing and fuel poverty by tenure per local authority. Analysis was conducted using the R packages *tidyverse*, *lme4, mipfp, SRP* and *srvyr.*

Below we present the regression tables for the hierarchical logit models, with the estimates of each predictor and their standard errors on the log odds scale, and relevant statistics of model fit (see Tables A1, A2, A3, and A4).

Table A1: Regression table for overcrowding

Dependent Variable	Overcrowded
Fixed effects	
	Est. (S.E)
Intercept	-7.808 (0.965) ***
Property Type: Flat other	1.84 (1.215)
Property Type: Flat purpose	-0.275 (0.69)
Property Type: Semi-detached	-0.521 (0.715)
Property Type: Terrace	-1.219 (0.745)
Property Age: 1950-1991	0.551 (0.514)
Property Age: 1919-1949	1.17 (0.577) *
Property Age: Pre-1919	-0.102 (0.624)
Household Size	2.453 (0.224) ***
Bedrooms: 2	-2.869 (0.59) ***
Bedrooms: 3	-6.593 (0.897) ***
Bedrooms: 4	-9.506 (1.607) ***
Bedrooms: 5+	-34.08 (64383.821)
Tenure: Own with mortgage	0.235 (0.621)
Tenure: Social rented	0.443 (0.611)
Tenure: Private rented	0.713 (0.629)
Random effects	
Intercept: Local Authority	
Groups	32
Variance	3.48E-10
Model statistics	
N	3151
Pseudo R^2	0.95
AIC	307.69
Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1**	

Table A2: Regression table for below quality standards

Dependent Variable	Below quality standards
Fixed effects	
	Est. (S.E)
Intercept	-5.072 (0.586) ***
Property Age: 1950-1991	0.581 (0.579)
Property Age: 1919-1949	1.217 (0.618) *
Property Age: Pre-1919	1.62 (0.579) **
EPC: E	0.649 (0.404)
EPC: F/G	1.374 (0.465) **
Property Type: Flat other	0.444 (1.087)
Property Type: Flat purpose	0.717 (0.464)
Property Type: Semi-detached	0.108 (0.469)
Property Type: Terrace	0.627 (0.43)
Tenure: Own with mortgage	-0.227 (0.388)
Tenure: Social rented	0.028 (0.44)
Tenure: Private rented	0.222 (0.409)
Urban/Rural: Urban	-0.682 (0.355) .
Random effects	
Intercept: Local Authority	
Groups	32
Variance	6.10E-13
Model statistics	
N	3129
Pseudo R^2	0.18
AIC	526.02
Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1**	

Table A3:

Dependent Variable	Unsuitable
Fixed effects	
	Est. (S.E)
Intercept	-5.849 (0.52) ***
Tenure: Own with mortgage	-0.183 (0.456)
Tenure: Social rented	0.392 (0.291)
Tenure: Private rented	0.422 (0.405)
Property Age: 1950-1991	0.972 (0.388) *
Property Age: 1919-1949	1.539 (0.417) ***
Property Age: Pre-1919	0.282 (0.516)
Economic Status: Other	1.153 (0.558) *
Economic Status: Part-time	0.912 (0.485) .
Economic Status: Retired	0.893 (0.378) *
Economic Status: Self-employed	-0.03 (0.767)
Economic Status: Unemployed	1.024 (0.79)
Economic Status: Long-term sick	2.621 (0.388) ***
Urban/Rural: Urban	-0.304 (0.262)
Random effects	
Intercept: Local Authority	
Groups	32
Variance	5.19E-12
Model statistics	
N	6134
Pseudo R^2	0.22
AIC	858.15
Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1**	

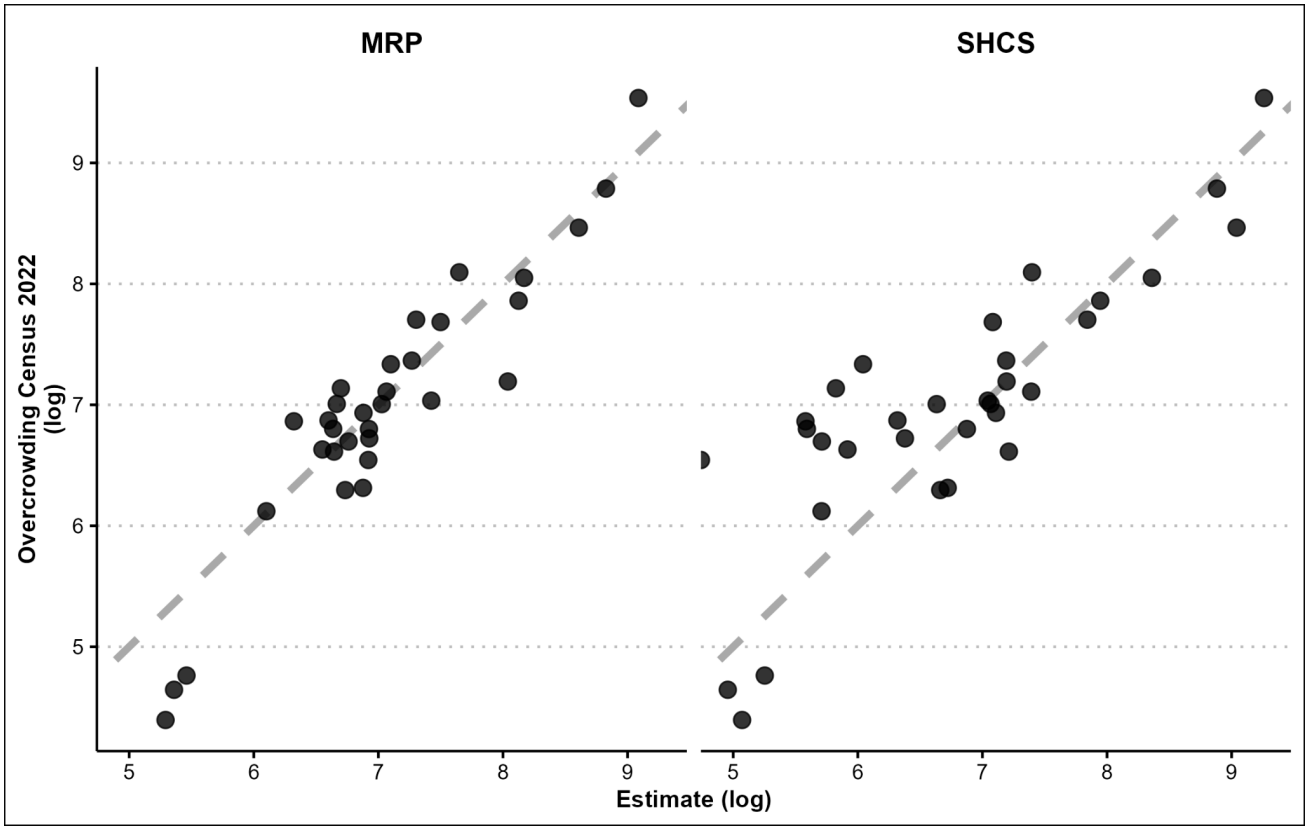
Table A4: Regression table for fuel poverty

Dependent Variable	Fuel poverty
Fixed effects	
	Est. (S.E)
Intercept	-2.933 (0.175) ***
Property Type: Flat other	0.196 (0.482)
Property Type: Flat purpose	-0.107 (0.151)
Property Type: Semi-detached	-0.024 (0.134)
Property Type: Terrace	-0.077 (0.142)
Heating Source: Electric	0.651 (0.138) ***
EPC: D	0.327 (0.11) **
EPC: E	0.637 (0.171) ***
EPC: F/G	0.973 (0.251) ***
Tenure: Own with mortgage	0.384 (0.148) **
Tenure: Social rented	1.344 (0.133) ***
Tenure: Private rented	1.348 (0.163) ***
Economic Status: Other	2.06 (0.253) ***
Economic Status: Part-time	1.182 (0.174) ***
Economic Status: Retired	1.699 (0.133) ***
Economic Status: Self-employed	0.542 (0.197) **
Economic Status: Inactive	2.462 (0.203) ***
Household type: Lone parent	1.107 (0.227) ***
Household type: Single retired	0.621 (0.129) ***
Property Age: 1950-1991	0.264 (0.13) *
Property Age: 1919-1949	0.303 (0.168) .
Property Age: Pre-1919	0.064 (0.169)
Random effects	
Intercept: Local Authority	
Groups	32
Variance	2.70E-02
Model statistics	
N	3104
Pseudo R^2	0.33
AIC	3164.71
Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1**	

Following the MRP, we conducted three validation checks. Firstly, we compared our overcrowding MRP estimates to the 2022 Census data and the 2017-2019 SHCS local authority estimates. This revealed that our MRP estimates had a very high correlation with the census data. The correlation coefficient for our MRP estimates with the census is 0.933, whereas the SHCS estimates have a 0.913 correlation coefficient with the census. This is displayed in Figure A1, with all variables being displayed on the log scale.

But visualising the relationship also demonstrated that MRP underestimated the overcrowding level in Glasgow City. As Glasgow has the highest number of overcrowded households, more than double the second highest local authority, this led to underestimation of overcrowding across Scotland. As such, we replaced our MRP estimate for Glasgow City with the predicted value of a regression model where the outcome was the 2022 census data on overcrowding, and the predictor was our MRP estimates. We retained our MRP estimate for all other authorities in the stock-flow model reported in the main text. This brought our estimate closer to the Scotland level of overcrowding estimated by the 2023 SHCS and increased the correlation with the census indicator of overcrowding to 0.98. We use this hybrid estimate in our stock-flow model (see Table 7.3 in main report).

Figure A1. MRP estimates of overcrowding by 2022 Census variable, and SCHS 2017-19 estimates



Our second validation is to attempt to replicate the regional cluster estimates from the pooled 2017-19 SHCS using MRP. For this validation test we refresh our MRP analysis by using the 2019 SHCS survey wave to build the hierarchical logit models, while keeping all other steps reported above unchanged. Figures A2, A3 and A4 present the results by regional cluster for each outcome. Figure A2 shows the main discrepancy for overcrowding is in West Central, and this is primarily due to the under-estimation of overcrowding in Glasgow Central by MRP. Yet as discussed above, we adjust for this by using a hybrid approach in the main analysis.

Figure A2. Overcrowding by regional cluster, MRP 2019 and SCHS 2017-19 estimates

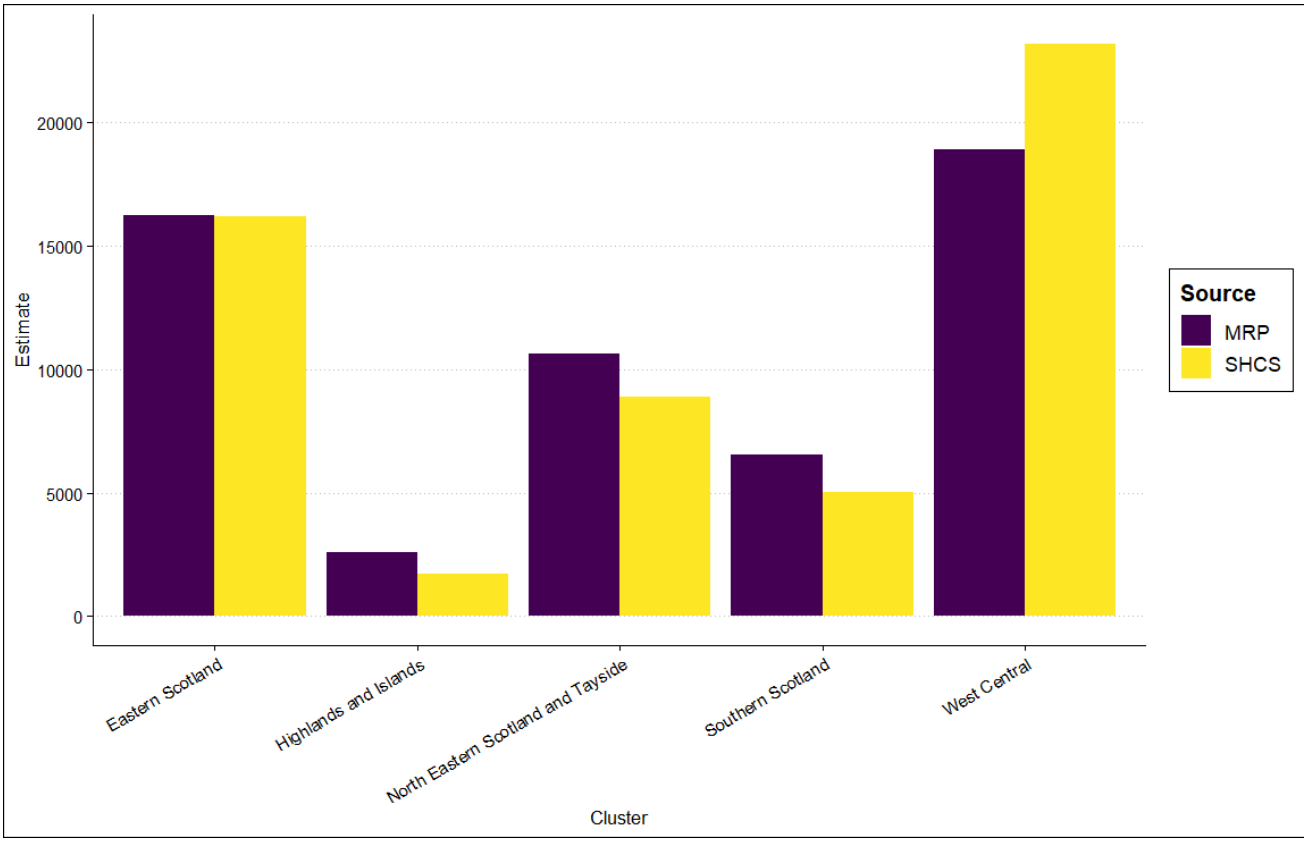


Figure A3 shows the regional cluster MRP estimates for households below quality standards are broadly comparable to the SHCS 2017-19, again with some discrepancy in West Central. However, we consider the results close enough to be plausible - they fall comfortably within the 95% confidence interval of the SHCS estimate for each regional cluster.

Figure A3. Households below quality standards by regional cluster, MRP 2019 and SCHS 2017-19 estimates

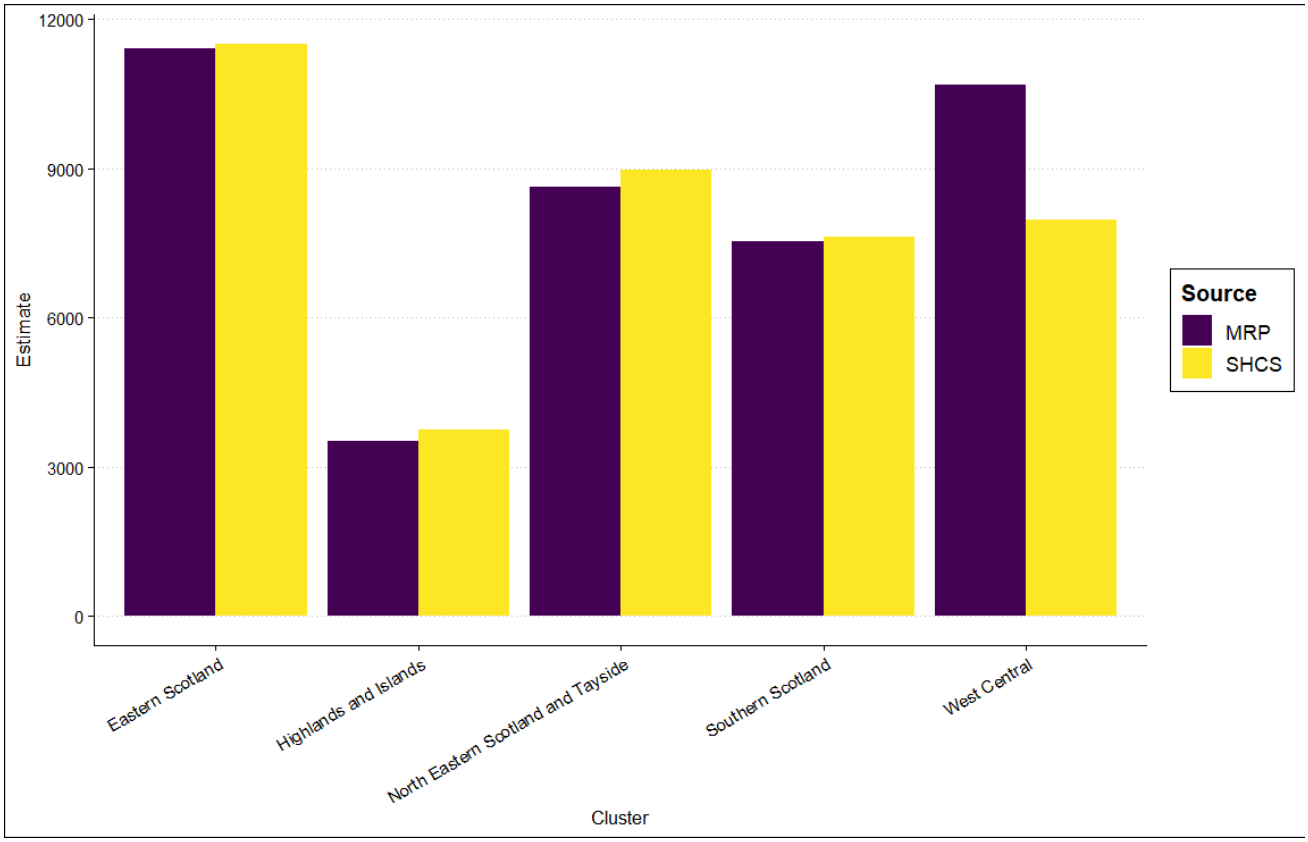


Figure A4. Unsuitable homes by regional cluster, MRP 2019 and SCHS 2017-19 estimates

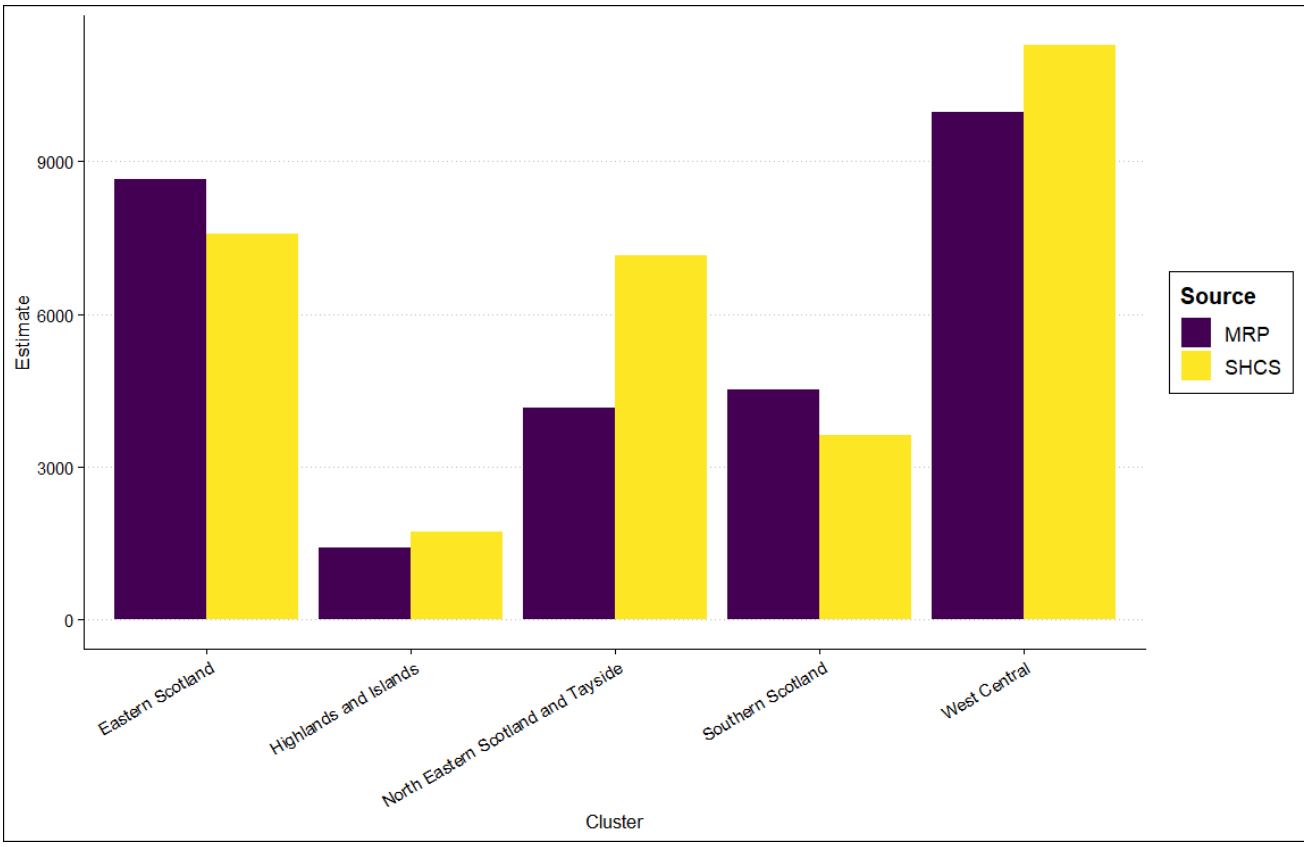


Figure A4 displays the same estimates for unsuitable housing. There are some discrepancies with the SHCS 2017-19 estimates, especially in North Eastern Scotland and Tayside. But the estimates fall within the 95% confidence interval of the SHCS estimates and we consider them close enough to be plausible.

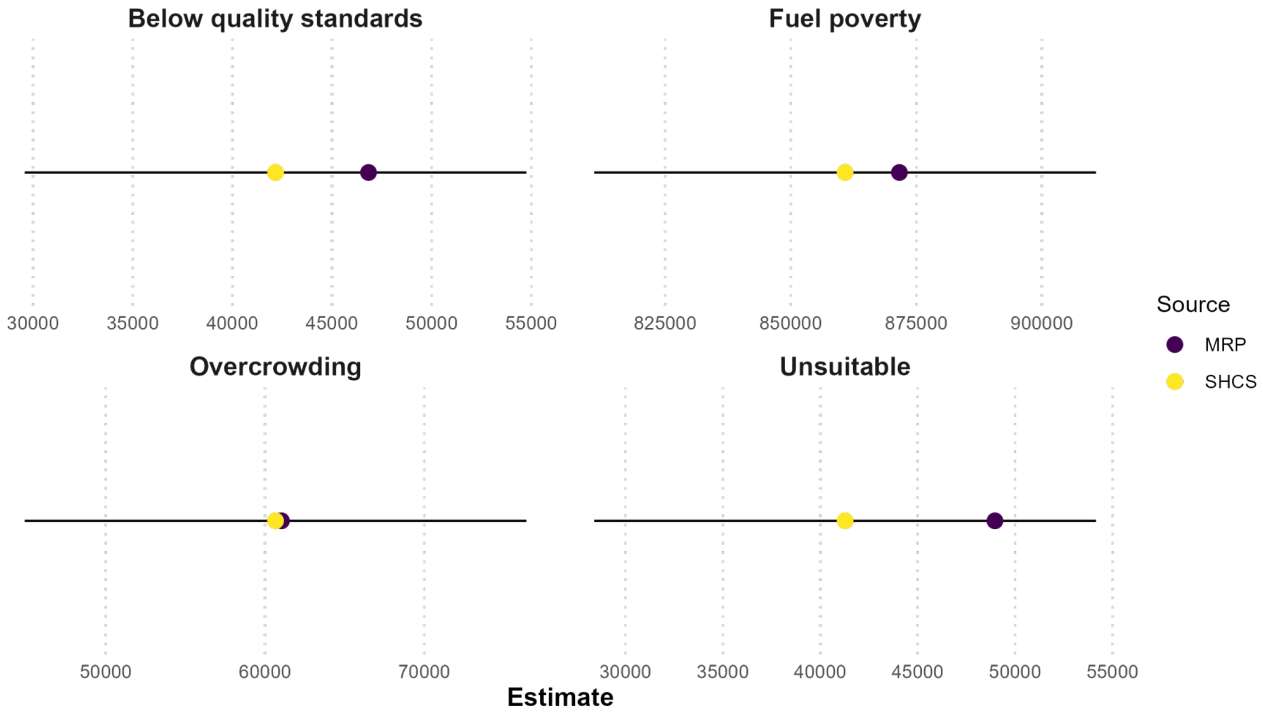
The third and final validation check is to compare the MRP estimates for the stock-flow model with the 2023 SHCS national estimates for Scotland. We present and discuss this check in the main report under Table 7.3. In Table A5 and Figure A5 we represent the validation check alongside the 95% confidence interval for the 2023 SHCS national estimates.

Table A5: MRP and SHCS estimates of inadequate housing in Scotland, with SHCS 95% confidence intervals

Indicator	MRP	SHCS	SHCS lower	SHCS upper
Overcrowding	61,026	60,656	44,902	76,411
Below quality standards	46,833	42,169	29,582	54,755
Unsuitable	48,964	41,275	28,399	54,151
Fuel poverty	871,622	860,816	810,893	910,740

Source: Author calculations and 2023 SHCS

Figure A5. National estimates of backlog need indicators, comparison of MRP with SHCS 2023 estimates and 95% confidence intervals



Longitudinal lettings analysis

To understand the drivers of the decline in lettings in the social rented sector (SRS), we conducted additional longitudinal analysis on the rate of SRS re-lets.

We modelled the rate of re-lets across social landlords for the 2020/21-2023/24 financial years. Annual Return on the Charter (ARC) data on lettings activity and landlord stock numbers, for the financial years 2020/21-2023/24, served as the data source. We built a random-effects-within-between (REWB) model, where the outcome variable was the number of re-lets per 100 properties owned, and each observation was a landlord in a given financial year. A REWB model seeks to decompose the variance within landlords from variance between landlords (Bell et al., 2019). *Within landlord variation* is change over time, for example a rise in the average time a property is empty within a landlord. *Between landlord variation* is the difference between average landlord values during the time period, for example differences between landlords in their average number of empty properties over the four-year period. The between effect of each predictor is modelled by taking the mean for each landlord of said predictor. And the within effect of each predictor is modelled by subtracting the landlord mean from the relevant predictor.

Our predictor variables were:

- the number of empty properties arising per 100 properties owned
- the average time a property is empty in days
- the number of properties abandoned per 100 properties owned

For each predictor an observation is an individual landlord in a given financial year. And we construct both a between and within version of the predictor as per the process described above. We also include a fixed effect for the financial year. As our focus is on general needs lettings, we excluded landlords with less than 154.7 general needs homes - the 5th centile of general needs homes owned. We removed a further 16 outlying observations, with outliers identified as being 2.24 standard deviations from the mean on the outcome variable. Thus n=629 observations for 171 landlords.

Table A6 presents the results of the REWB model. We removed the within and between predictors for properties abandoned as they had no effect on the outcome and did not improve the model fit. The final model has a Pseudo-R^2 of 0.80. Table A6 shows that increases in the rate of empty properties both within and between landlords are strongly associated with an increase in the number of re-lets. An increase in the average time properties are empty between landlords is associated with a decrease in the number of re-lets, but the effect size is much smaller than the effect of properties becoming empty. When looking at differences between landlords, each additional empty property per 100 owned is associated with an additional 0.925 re-lets per 100 properties owned, an almost 1-to-1 relationship between empty properties and re-lets.

Table A6: Regression table for longitudinal re-lets analysis

Dependent Variable	Re-lets per 100 properties
Fixed effects	
	Est. (S.E)
Intercept	0.206 (0.154)
Properties becoming empty per 100: within	0.855 (0.032) ***
Properties becoming empty per 100: between	0.925 (0.022) ***
Days to re-let: within	0.001 (0.002)
Days to re-let: between	-0.003 (0.001) **
Year	0.131 (0.029) ***
Random effects	
Intercept: Landlord	
Groups	171
Variance	1.91E-03
Residual	6.44E-01
Model statistics	
N	629
Pseudo R^2	0.80
AIC	1526.35
Signif. codes: 0 '*' 0.001 '**' 0.01 '*' 0.05 '.' 0.1**	

Following this REWB regression we model hypothetical scenarios across the entire Scottish SRS stock. The Scottish Housing Regulator (SHR) publishes an annual report on social landlord performance. In Table A7 we replicate the most recently published table on lettings activity across the Scottish SRS by the SHR (SHR, 2024) and append our additional scenarios. The columns headed 2019/20 to 2023/24 are a direct replication of the SHR table.

As the within predictor for average days empty was non-significant, we model our scenarios around the coefficients from the between landlord predictors. Consequently, we set our baseline scenario as the average lettings activity across Scotland in 2020/21-2023/24. Table A6 shows the average across this time period was 49,405 total lets, 44,769 empty properties (7.33 per 100), and 55 days empty. Relative to this baseline scenario we then model two hypothetical scenarios.

Firstly, we model the effect of increasing the rate of empty properties per 100 to 8.40 from 7.33, while keeping the average days empty at 55. To do so we effectively treat the Scottish SRS housing stock as the stock of a hypothetical national landlord and assume lettings activity changes in accordance with the between landlord coefficients from our REWB model. We also assume that our REWB outcome, which is re-lets per 100, directly translates to an equivalent increase in total lets per 100. This a reasonable assumption given that re-lets and lets from new supply will be independent of one another in the short-term.

On this basis the number of lets per 100 properties is calculated as:

$$\mathbf{Yscenario} = \mathbf{Ybaseline} + \beta\mathbf{1} \times (\mathbf{Xscenario} - \mathbf{Xbaseline})$$

Where *Yscenario* is the predicted rate of lets per 100 properties, is the rate of lets per 100 in the baseline scenario, $\beta 1$ is the relevant coefficient from the REWB model, and *Xscenario - Xbaseline* is the difference between the predictor in the modelled scenario and the baseline scenario. As such, the formula can be rewritten for scenario one as:

$$\mathbf{9.08 = 8.08 + 0.925 \times (8.40 - 7.33)}$$

Under scenario one, the rate of lets per 100 would be 9.08, which converts to **55,468** lets total.

Secondly, we model the effect of decreasing the average days empty to 32 from 55, while keeping the empty properties per 100 at 7.33. Using the formula above, this results in:

$$\mathbf{8.15 = 8.08 - 0.003 \times (32 - 55)}$$

Under scenario two, the rate of lets per 100 would be 8.15, which converts to **49,817** lets total.

Table A7: Scenario modelling the effect of changes in lettings activity

	2019/20	2020/21	2021/22	2022/23	2023/24	Average 2020/21-2023/24	Scenario One	Scenario Two
Total stock	597,619	605,884	605,295	615,554	618,069	611,164	611,164	611,164
Properties becoming empty %	8.40%	6.90%	7.80%	7.40%	7.20%	7.33%	8.40%	7.33%
Properties becoming empty per 100	8.40	6.90	7.80	7.40	7.20	7.33	8.40	7.33
Properties becoming empty	50,200	41,806	47,213	45,551	44,501	44,768	51,338	44,768
Average days to re-let	32	56	52	56	57	55	55	32
REWB coefficient B1	-	-	-	-	-	-	0.925	-0.003
Xscenario - Xbaseline	-	-	-	-	-	-	1.08	-23.25
B1 x (Xscenario - Xbaseline)	-	-	-	-	-	-	0.99	0.07
Lets per 100	9.26	7.00	8.74	8.28	8.31	8.08	9.08	8.15
Total lets	55,320	42,387	52,894	50,996	51,342	49,405	55,468	49,817

Source: Author's calculations of ARC 2019/20-2023/24
Note: some figures may not be exact due to rounding of numbers in the table

Funding under different scenarios

Table A8: Estimated programme funding costs in low-low scenario for affordable housing need, assuming 5.50% inflation.

Tenure scenario (social rent: MMR)		2020 method	Regional variation method
66:34	**Annual**	£1,190,166,519	£1,158,801,768
	5-year programme	£5,950,832,593	£5,794,008,838
75:25	**Annual**	£1,210,390,131	£1,176,919,372
	5-year programme	£6,051,950,654	£5,884,596,861
100:00	**Annual**	£1,309,499,398	£1,265,559,885
	5-year programme	£6,547,496,988	£6,327,799,424

Table A9: Estimated programme funding costs in high-high scenario for affordable housing need, assuming 5.50% inflation

Tenure scenario (social rent: MMR)		2020 method	Regional variation method
66:34	**Annual**	£2,051,880,728	£2,004,592,698
	5-year programme	£10,259,403,642	£10,022,963,489
75:25	**Annual**	£2,086,254,694	£2,035,587,014
	5-year programme	£10,431,273,471	£10,177,935,070
100:00	**Annual**	£2,255,836,610	£2,188,302,420
	5-year programme	£11,279,183,050	£10,941,512,101

HNDA review proforma

A: Definitional Clarity and Outputs

Title/Area:	Date of Report:
LAs included:	
URL/Source:	
Definition of Affordability:	
Estimate of Need:	
Overall Requirement:	Clear Summary: yes/no
Disaggregation: **Tenure** yes/no	Summarise breakdown: By Tenure? Market/Own Occ Social Rent Private Rent Below Market
Stock type: yes/no	By Type?
Geography/Sub area: yes/no	By Area
Specialist provision: yes/no	By Specialist?
Clear summary of drivers: yes/no	Key drivers:

B: Technical and Methodological Robustness

Replicability	**Yes/No/Partially – comments?**
To what extent was CHMA tool used?	Describe/outline deviations:
Use of qualitative data? yes/no	Describe what (e.g. resident views, consultations etc) and how used:
'Other' Data (beyond SHCS, SHS, Care Homes Census, Cemsus, ISD A to Z, Health and Community care stats, HE stats, Equality Evidence Finder, SFC, NRS Migration Data), SHR Charter Data (eg GTA)	**Sources:**

C: Process, Inputs and Approach

Ownership of HMA (lead; HMP, use of consultants?)	**Describe:**
Methodology, limitations and quality control explicit? Yes/No	I**f yes, describe** (eg sensitivity testing, discussion of errors, etc):

Interview schedule

Trends and housing need

1. This work is an iteration of previous projects, the last of which completed in 2020. In your experience, what have been the significant trends in the Scottish housing system since then? These could relate to:
    - Affordability
    - Supply and sector capacity
    - Residential mobility
    - Poverty and living standards
    - Homelessness
        - For local authority interviewees: please elaborate on key drivers of need and stock pressure with reference to your local area?
2. What are the implications of these trends for meeting housing need?

Estimating and delivering against housing need

3. Please explain your experience with strategic housing planning?
    - **Prompt:** For example, have you conducted a HNDA for a local authority?
    - **Prompt:** Or been involved in some other part of the planning process?
4. What is your view of how effective the HNDA process is in estimating local housing need?
    - **Prompt:** What are the strengths of the current process?
    - **Prompt:** Any areas of improvement?
    - **Prompt:** What the challenges in estimating need e.g. data availability?
5. What are the key challenges in meeting local need in your area?
    - **Prompt:** availability of sites?
    - **Prompt:** funding and capital grant?
    - **Prompt:** coordinating stakeholders?
6. For interviewees conducting HNDAs specifically – how effective is the CHMA tool in supporting the HNDA process?
    - **Prompt:** Do you modify the estimates of the tool in any way to meet your local context? And if so, what data sources do you use?

Stock-flow model

7. To estimate housing need at the national scale, we are using a stock-flow model (explain if necessary). Do you have a view on how housing need should be estimated nationally?
    - **Prompt:** Do you foresee any challenges in estimating housing need via the stock-flow model e.g. data availability?
    - **Prompt:** Do you have any comments on the findings or methodology used in the previous reports?

Clustering

8. To present our findings we will group similar local authorities into wider regions. What is your view of our proposed groupings? (Share clustering groups)