Department for Levelling Up,
Housing & Communities

Scoping Report for the Evaluation of the Affordable Homes Programme 2021-2026

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Executive summary

Introduction This document is the scoping report for the forthcoming evaluation of the Affordable Homes Programme 2021-2026 (AHP 2021-2026), the fifth of a series of government programmes to provide grant funding for the construction of affordable homes in England. The project is sponsored by the Department for Levelling Up, Housing and Communities (DLUHC), the government department in charge of affordable housing policy. The government has committed to a robust independent evaluation of the evaluation of the AHP 2021-2026. This report provides a guide for those commissioned to evaluate the highly complex programme ensuring it is designed in a way that maximises the detection of impact, actionable insight and ability to assess value for money. It sets out the research questions and suggested methodologies that might be used to answer them. The report was prepared by a multidisciplinary team of academics from University College London, the London School of Economics and Durham University.

The AHP 2021-2026 The programme provides £11.5 billion of capital funding over five years to enable the supply of approximately 162,000 new affordable homes on current projections. Our delivery partners, Homes England (HE) and the Greater London Authority (GLA), respectively control £7.5 billion (to deliver 126,000 homes in England outside London) and £4bn (for 35,000 homes in London). This funding is expected to support starts on site between 2021 and 2026, with completions expected by 2028 for most projects. Approximately 50% of units funded via Strategic Partnerships will be for owner occupation (mainly Shared Ownership) and 50% for rental tenures (most with a new right to shared ownership attached). The Continuous Market Engagement route of the programme aims to deliver 40% affordable home ownership and 60% rental tenures. The programme's main objectives as identified by the Theory of Change (ToC) presented in this report are:

'To increase access to secure and decent homes for households who cannot otherwise afford to buy or rent a home at the market price; to *increase homeownership across England amongst those that might not otherwise be able to buy their own home*; and to *achieve positive impacts for wider communities and society*.'

Other strategic priorities include the use of modern methods of construction (MMC), adherence to design guides and working with small and medium size contractors (SMEs). Providers, including housing associations, local authorities and for-profit registered providers, submit bids to delivery partners for grant funding. As of May 2022, about 70% of funds have already been allocated through Strategic Partnerships to providers with long-term, multi-site delivery programmes; the rest will be allocated for schemes on individual identified sites through Continuous Market Engagement.

Evaluation The scoping exercise sets out the framework for a rigorous and comprehensive evaluation of the Affordable Homes Programme 2021-2026 as part of the department's Housing Monitoring and Evaluation Strategy. The objectives are to clarify a range of suitable methodologies together with the data required to evaluate the programme that would achieve at least level 3 on the Maryland scale[1]. The proposed

[1] The Maryland scale is a five-point scale ranging from 1, for evaluations based on simple cross sectional correlations, to 5 for randomised control trials.

evaluation includes three elements: a *process evaluation* asking whether the AHP 2021-2026 activities and outputs were delivered effectively; an *impact evaluation* asking whether the expected outcomes and impacts were achieved within the timescale of the programme; and a *value for money (VFM) evaluation* asking whether the programme was a good use of resources.

The evaluation will make use of existing secondary data from administrative databases and linking datasets using addresses and proxies as identifiers. Comprehensive data on the property development process is collected by HE and GLA. Data on affordable housing units and their tenants is available in the Continuous Recording (CORE) systems. It is possible to conduct rigorous econometric analysis by complementing data on affordable homes with data on homes sold or rented on the open market. We recommend granular analyses at property, scheme, provider and local authority levels. Where secondary data are insufficient to assess the intended outcomes, primary data should be collected through various techniques including surveys of residents and providers within a series of case study areas, interviews with key stakeholders, and site visits.

Potential challenges

- *Data availability* The scoping study identifies the datasets required to which DLUHC should secure access for the evaluators, in addition to publicly available housing data and proprietary data for which access can be arranged. Such data include information on development costs and grant rates, staircasing, sale prices, rents, resident characteristics among others. To leverage the various datasets and link them up, good identifiers are needed. We propose the use of accurate address information to achieve that.
- *Changed circumstances since programme inception* The current increases in inflation and interest rates have been sudden and unforeseen and are not reflected in initial bids and grant rates. The pressures could have a serious impact on the financial viability of individual schemes and also on the overall financial health of providers. This could limit the appetite for grant funding and significantly affect the success of the programme.
- *Monetising benefits* As part of the VFM element of the evaluation, benefits to residents will be monetised. One standard economic technique required by the Green Book is to monetise the private benefits of housing in a free market using Land Value Uplift (the increase in the value of land when planning permission is granted for housing), as was done in the business case. Evaluators will however need additionally to take account of planning and other constraints that impact on land values particularly in more pressured parts of the country, notably London.
- *Back-loading* We can expect the pace of construction to accelerate over the course of the programme, with the bulk of new homes being delivered in the final years. Many of the intended outcomes will therefore not be evident until near the end of the programme. Some outcomes might take years to occur. Ideally a later evaluation exercise focused specifically on these long-term outcomes would be conducted.

Timing This scoping study recommends the evaluation should take place in three phases from 2022 to 2029 spanning the entire programme with the initial phase taking place as soon as possible, to capture baseline information and participants' contemporaneous views of the process. The subsequent phases should proceed on a rolling basis, taking place shortly after homes are completed, and two years after completion. It is likely further evaluation will be required to assess the contribution of the programme to any longer-term outcomes.

Report glossary

AF	Area of Focus
AHP	Affordable Housing Programme
AHP 2016-2023	Affordable Housing Programme 2016-2023
AHP 2021-2026	Affordable Housing Programme 2021-2026
APRC	Annual Percentage Rate of Charge
ASHE	Annual Survey of Hours and Earnings
BCR	Benefit Cost Ratio
CBA	Cost-Benefit Analysis
CORE	Continuous Recording
CORE Lettings	Continuous Recording of Lettings
CORE Sales	Continuous Recording of Sales
CME	Continuous Market Engagement
DID	Difference-in-Difference
DLUHC	Department for Levelling Up, Housing and Communities
DWP	Department for Work and Pensions
EEA	Electronic Annual Accounts
EHS	English Housing Survey
EPC	Energy Performance Certificate
FFR	Financial Forecast Return
GDPR	General Data Protection Regulation
GIS	Geographic Information System
GLA	Greater London Authority
GLAOPS	Greater London Authority Open Project System
GVA	Gross Value Added
H-CLIC	Homelessness Case Level Information Collection
HA	Housing Association
HACT	Housing Associations' Charitable Trust
HB	Housing Benefit
HE	Homes England
HHI	Herfindahl Index
HMT	Her Majesty's Treasury
ID	Identity/Identification
IMS	Investment Management System
ITT	Invitation To Tender
LA	Local Authority
LADR	Local Authority Data Return
LAHS	Local Authority Housing Statistics
LHA	Local Housing Allowance
LPG	London Plan Guidance
LTSP	Long Term Strategic Partner
LVU	Land Value Uplift
MHCLG	Ministry of Housing, Communities & Local Government
MMC	Modern Methods of Construction

NHBC	Published National Housing Building Council
ONS	Office for National Statistics
P	Primary Outcome (from ToC)
PMB	Programme Management Board
PMV	Pre-manufactured Value
PPD	Price Paid Data
PRS	Private Rented Sector
PSM	Propensity Score Matching
PV	Present Value
RQ	Research Question
RSH	Regulator for Social Housing
RTSO	Right to Shared Ownership
S	Secondary Outcome (from ToC)
SCBA	Social Cost-Benefit Analysis
SDR	Statistical Data Return
SE	Southeast
SME	Small Medium Sized Enterprise
SO	Shared Ownership
SP	Strategic Partner
TA	Temporary Accommodation
ToC	Theory of Change
UC	Universal Credit
UPRN	Unique Property Reference Number
VFM	Value For Money
VOA	Valuation Office Agency

Chapter 1 Purpose of the Affordable Homes Programme 2021-2026

The Affordable Homes Programme 2021-2026 (AHP 2021-2026) is a government grant funding programme designed to boost the construction of affordable new homes in England to address serious housing affordability problems. Many households cannot afford to rent or buy adequate housing. Some 60% of those households who want buy do not have enough savings to pay the required deposit (DLUHC 2021) while about one million households in the private rented sector (PRS) are on housing benefit (HB) and a similar proportion are on waiting lists for affordable housing. Housing affordability (housing expenditure as a proportion of income) varies greatly across the country, with London having the least affordable housing.

The three main objectives of the AHP 2021-2026 are to provide additional rented housing for those who cannot afford it at the market price, to increase access to homeownership and to increase the supply of housing in general.[2] The programme provides £11.5 billion between 2021 and 2026 to deliver ca. 162,000 new affordable homes; the final homes will be completed by 2029.[3] About 50% of these homes are expected to be sub-market rent (including social rent and affordable rent) with a Right to Shared Ownership (RTSO) attached, and about 40-50% are planned to be low-cost homeownership, mainly in the form of the new Shared Ownership (SO) model.[4] 5-10% of delivery is expected to be supported housing, which is a sub-target. More general Government ambitions include building one million homes by the end of the current parliament and delivering 300,000 homes per year by the mid-2020s.

The AHP 2021-2026 differs from its predecessor (Affordable Homes Programme 2016-2023 or AHP 2016-2023) in a few ways, particularly related to SO. First, AHP 2021-2026 includes a new model of SO that allows buyers to acquire a smaller initial share of the property and to staircase at smaller intervals. Second, a RTSO is attached to most social and affordable rental units as a grant condition.[5] The RTSO programme is designed to address affordability constraints for sub-market tenants by allowing them to accumulate equity by buying a share of their rental unit.[6] These differences are summarised in Table 1.1. Further new elements for the AHP 2021-2026 include more defined targets for supported housing delivery and new strategic priorities around modern methods of construction (MMC), rural housing, design and quality on delivery, and engagement with small and medium sized enterprises (SMEs) and smaller housing associations.

[2] The aims are linked to the MHCLG Outcome Delivery Plan: 2021 to 2022: see MHCLG Outcome Delivery Plan.
[3] Homes England delivers the programme outside of London and receives around £7.4bn to deliver up to 130,000 affordable homes (housing starts) by 2026. In London, the GLA receives £4bn to deliver 35,000 new affordable homes.
[4] The main differences between the new and old SO models include that the minimum share to buy will be 10%, as compared to 25% in the previous model. When staircasing, households can buy increments of 1% instead of 10% as previously was the case. SO owners will share some repair costs with the housing association and claim a maximum of £500 a year over the first 10 years of the property.
[5] However, this applies to all SO units since the announcement of the RTSO in 2021, including those being built under AHP 2016-2023.
[6] To qualify for the RTSO programme, the tenant must have lived in the property for at least 12 months, have been a tenant of social and affordable housing for at least three years, and have satisfied all other SO affordability criteria including income requirements (an annual household income of £90,000 or less in London or £80,000 or less outside of London) and not owning a property. Further guidance is available here.

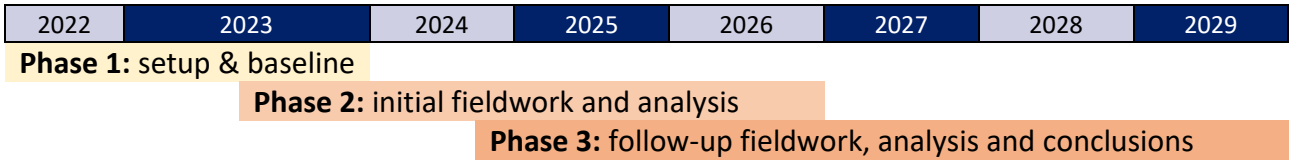
Table 1.1 Comparison of AHP 2021-2026 vs AHP 2016-2023: SO and RTSO

	AHP 2021-2026	AHP 2016-2023
Minimum initial equity share	10%	25%
Staircasing	1% option for the first 15 years Alternative: Minimum of 5%	Minimum of 10%
Repair and maintenance cost	Met by landlord up to £500 p.a. for the first ten years	Met by Shared Owner
Minimum lease term	990 years	99 years
RTSO	Available	Not available

This scoping report for the AHP 2021-2026 starts by setting out a Theory of Change (ToC) for the programme. The evaluation itself will have three elements: ensuring the most appropriate processes were followed (Chapter 2), assessing impact (Chapter 3) and evaluating VFM (Chapter 4). The report identifies recommended methodologies, data, and indicators and provides supporting evidence as to why these are the recommended approaches (Chapter 5).

The process, impact and VFM evaluations are expected to start in Summer 2022 and run until the end of the programme (2029). We propose an overlapping three-phase programme (Figure 1.1). The overlap ensures that sufficient progress can be made in each phase, before the next phase begins, and that there is flexibility for each phase to extend if necessary. The Gannt (see Figure 5.1 in Chapter 5) provides a more detailed breakout of what each phase entails. Phase 1 will kick off the evaluation with high level analysis of existing data, the initiation of primary and secondary data collection. It will start in Summer 2022 and can take up to 18 months. Phase 2 will start in Spring 2023 when the programme has been underway for some time and will follow on from the work in Phase 1 and continue with data analysis depending on progress of the AHP, It will last 21 months. Phase 3 is to start no earlier than late 2024 and will last until the evaluation is complete. It will cover substantial data analysis, which depends on completion of developments and tenants moving in the new properties.

Figure 1.1 Evaluation phases



Theory of Change

The Theory of Change (ToC) was developed with DLUHC and stakeholders as a structured representation of how the AHP 2021-2026 will achieve its intended objectives and impact its beneficiaries. The ToC is presented in Figure 1.2. It identifies causal linkages between the identified AHP 2021-2026 elements and sets out the programme's intended outputs and outcomes and their contribution, over time, to impacts. The ToC sets out the rationale for the programme; the inputs, resources or audiences it draws on; the activities and outputs it produces; the resulting outcomes (short-, medium-, and long-term); and the overall impact of the programme.

Inputs. This element includes two types of resource inputs necessary for the delivery of the AHP 2021-2026. (i) Input from Central Government, which includes staff resource from the Department for Levelling Up, Housing and Communities (DLUHC) and the £11.5 billion in government funding which has been made available for the delivery of the programme; and (ii) input from delivery partners and providers, which includes management of the programme by Homes England (HE), the Greater London Authority (GLA), Housing Associations (HAs) / Local Authorities (LAs) and for-profit providers.

Activities. The intended activities for the AHP 2021-2026 can be divided into three main areas: Initial design and assessment of bids; delivery mechanisms; and monitoring. These will be discussed in Chapter 2 as part of the process evaluation.

Outputs. Outputs are the immediate results expected from the activities carried out. The ToC assumes that activities were carried out as intended in order to achieve these outputs. These outputs, alongside with associated assumptions and risks, will be discussed in Chapter 2 and Chapter 4 under the process and VFM evaluations.

Outcomes. The ToC includes both short-term outcomes (changes occurring within 1-2 years of housing completions) and medium- to long-term outcomes (changes materialising after the first two years of housing completions). These are further split into three main types of outcome: those resulting from the supply of homes at affordable **rents** and from the supply of homes offered under **SO**, and wider outcomes that result from the overall increase in **housing supply**. Finally, outcomes are also split into *primary* outcomes (the main changes the AHP 2021-2026 was designed to generate) and *secondary* outcomes (effects expected to follow from primary outcomes). Those will further be discussed and assessed in Chapter 3 and Chapter 4 as part of the impact and VFM evaluations.

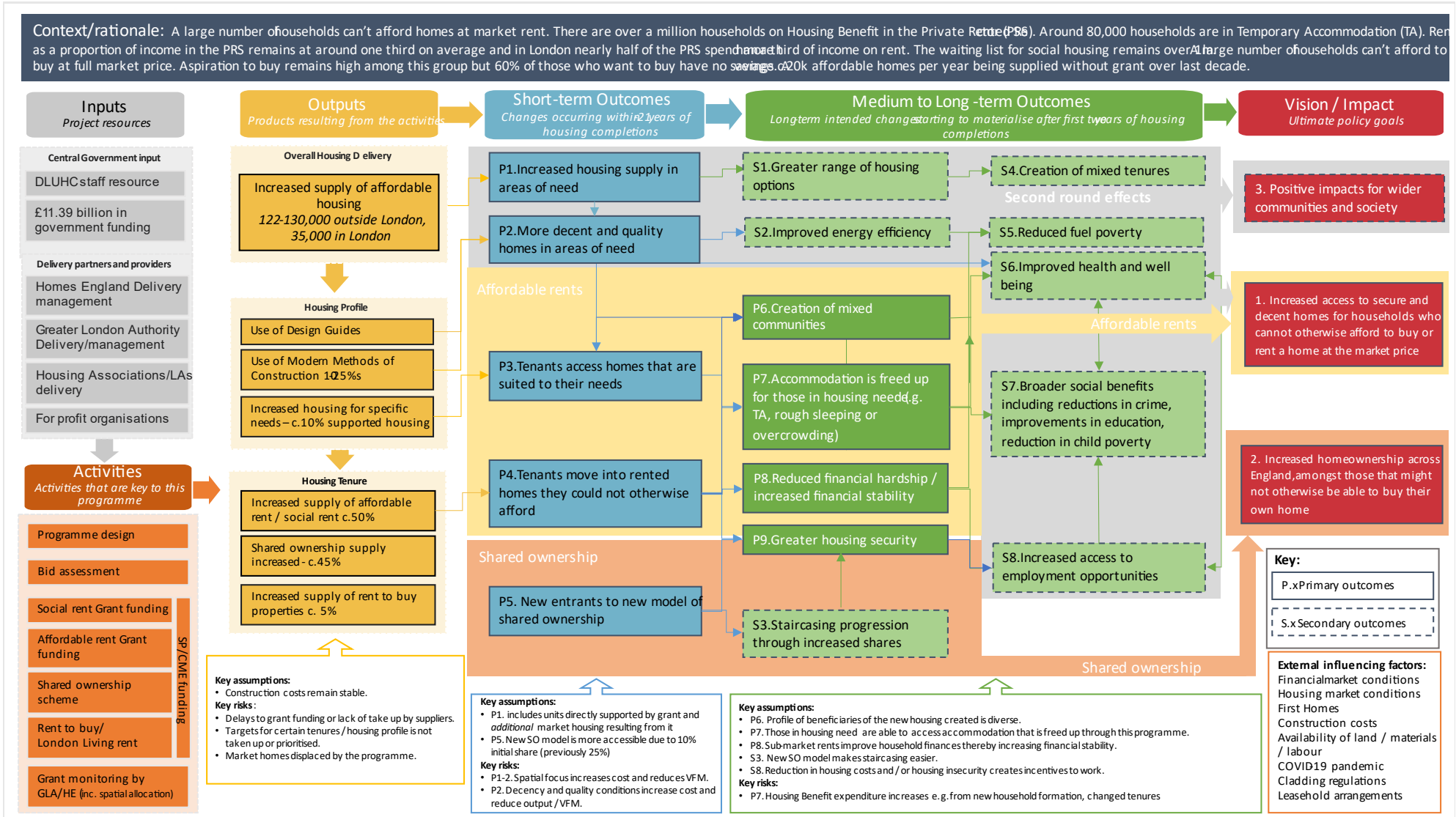
Vision / impact. This element of the ToC sets out the ultimate policy goals which the AHP 2021-2026 aims to achieve. They are the culmination all other elements; the ToC assumes that if the inputs, activities, outputs, and outcomes are all achieved as intended, then the ultimate policy goals should also be achieved.

The AHP 2021-2026 has three ultimate policy goals:

- *Increased access to secure and decent homes for households who cannot otherwise afford to buy or rent a home at the market price.* The ToC assumes that this goal will be achieved if outcomes relating to affordable rents are achieved (as discussed under the 'outcomes' element).
- *Increased homeownership across England, amongst those that might not otherwise be able to buy their own home.* This goal will be achieved if outcomes relating to SO are achieved.
- *Positive impacts for wider communities and society.* Outcomes relating to overall supply of housing and secondary outcomes such as improved health and well-being and increased access to employment opportunities will contribute to this goal.

External influencing factors. The key external factors for the AHP 2021-2026 include wider housing and financial market conditions, construction costs and the availability of land / materials / labour, which are summarized in Appendix 0. These factors are further discussed in Chapter 2, Chapter 3 and Appendix B.

Figure 1.2 Theory of Change for the Affordable Homes Programme 2021-2026



1.1 Main research questions and areas of focus

DLUHC identified 12 research questions (RQs) and 5 areas of focus (AF) in the Invitation to Tender (ITT) for the scoping exercise. Table 1.2 lists the research questions and maps them onto the three evaluation types. The 12 research questions and the respective sub-questions are summarized in Table A.2.

Referenced sections of the report address the following **areas of focus**.

A: Feasibility study of quantitative methods to determine causal effects of aspects of the delivery model on things like number of homes and grant rates.

B: Feasibility of quantitative analysis to determine causal effect of the new model of SO and the RTSO on grant rates.

C: How housing supply additionality of the AHP, particularly homeownership products, can be assessed through evaluation.

D: How further evidence can be collected to help determine the impact of new rental units on HB spend, particularly with respect to determining robust counterfactuals.

E: How to better establish counterfactuals so that the causal effect of rental units delivered through the programme on the "number of households obtaining suitable rented housing they can afford" can be better determined.

Table 1.2 Questions identified in the ITT mapped across type of evaluation

Questions	Type of evaluation
1. How well has the delivery model of the AHP 2021-2026 worked to deliver the number, tenures and locations of homes intended as well as other strategic aims of the programme? (Based on expected delivery)	Process
2. To what extent have DLUHC policy priorities pursued through the AHP 2021-2026 affected the number, types and locations of homes delivered?	Process
3. How effectively has the programme responded to external factors impacting on delivery and why?	Process
4. To what extent has the AHP 2021-2026 delivered value for money?	VFM
5. What are the demographics of households supported by AHP 2021-2026 provision?	Monitoring information
6. To what extent has the AHP 2021-2026 led to more households obtaining suitable rented housing they can afford?	Impact
7. To what extent has the AHP 2021-2026 provided good quality housing?	Impact
8. To what extent does the AHP 2021-2026 deliver the right types of general needs housing in the right places?	Impact
9. What has been the impact of AHP 2021-2026 developments on communities and neighbourhoods and why?	Impact
10. To what extent is supported housing delivered through AHP 2021-2026 meeting the needs of those occupying it?	Impact
11. How well is the new model of SO working?	Impact
12. How well is RTSO working?	Impact

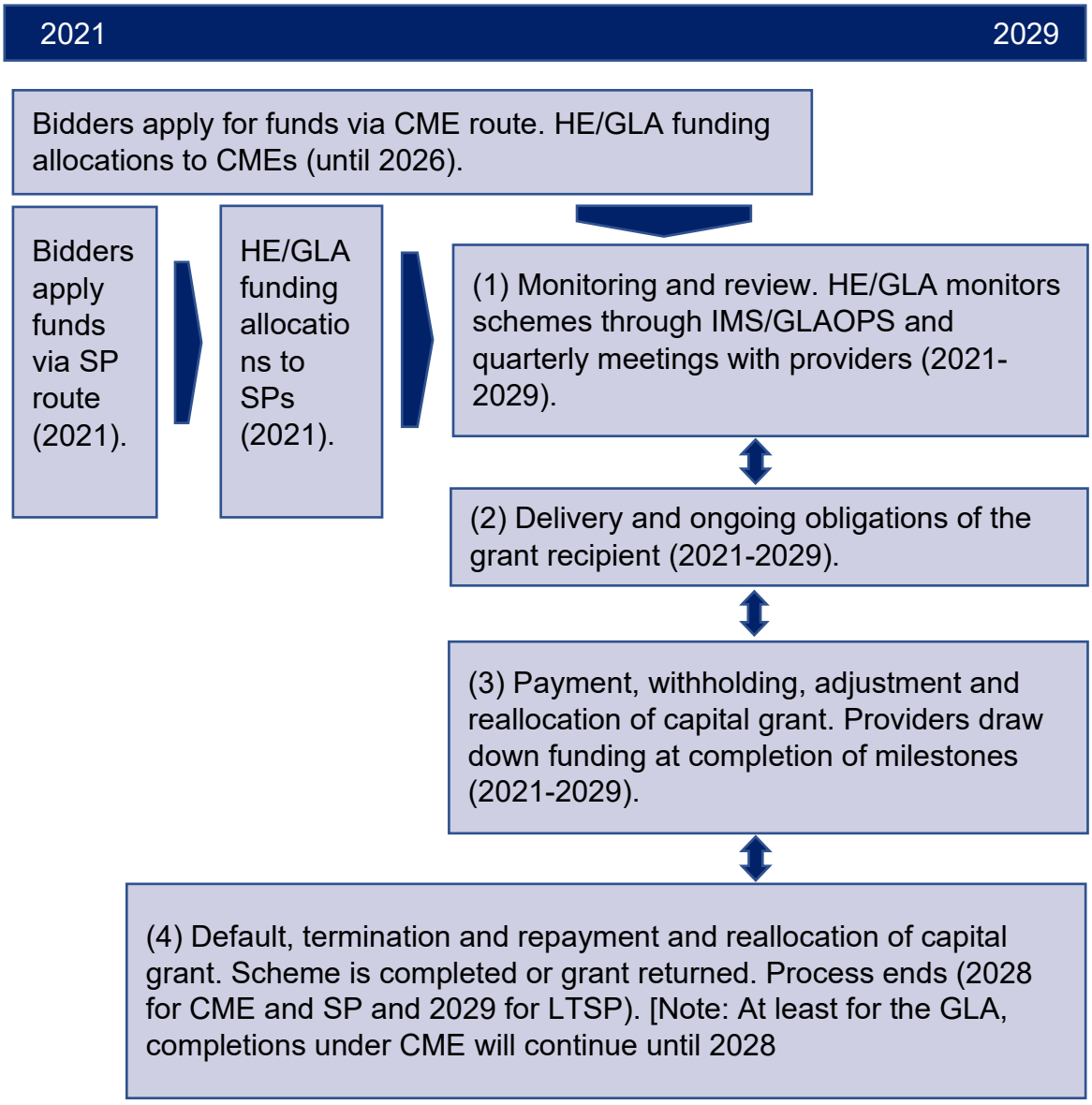
The structure of the scoping study is based on the ToC. The focus has been on building robust counterfactuals, identifying data sources and specifying appropriate methodologies.

Chapter 2 Process evaluation

2.1 Theory of Change: Activities and outputs

The process evaluation focuses on the activities, outputs, risks, and assumptions identified in the ToC. Evaluators will assess the success of the AHP 2021-2026 by analysing the bidding process, and monitoring progress of providers and across schemes. A simplified map of the delivery process of the AHP 2021-2026 is shown in Figure 2.1.[7] A detailed flow chart is provided in Figure A.1 in Appendix A.

Figure 2.1 Delivery process of the AHP 2021-2026



In the first step of the process, providers submit bids for AHP 2021-2026 funding to HE and/or the GLA. Providers can apply to both agencies at the same time. There are two

[7] More details are available in the Indicative Heads of Terms report.

routes to bid for the funding: via Continuous Market Engagement (CME) or as a Strategic Partner (SP). Via the CME route, bids are made for 'firm' schemes which have been fully identified and for which details of the planned development are confirmed (site, cost, tenure mix, delivery timeline, etc). This means that as soon as the application is made scheme-level information will be available for the evaluation via the Information Management Systems (IMS) and Greater London Authority Open Project System (GLAOPS) for HE/GLA respectively.

To submit a proposal via the SP route, providers must be a 'qualified investment partner'.[8] There are four types of SP: not-for profit, long-term, for-profit and LA.[9] In the Homes England programme only, the maximum grant ask for the first two types is £250m and £150m for the latter two types. Via the SP route, providers bid for an entire programme of work rather than a specific scheme and had to set out the overall grant amount and number of homes by tenure and region. In the Homes England programme, bidders had to commit to building a minimum of 1,500 homes and delivering MMC. On average SPs have a target of 25% of the homes to be delivered through MMC and there is a 10% cap on homes which could be acquisitions of existing stock. Some SPs can however deliver less and some more, so that it averages out to hit DLUHC targets. SP bids were submitted in 2021 and funding has already been allocated via a competitive bidding process. There is no further bidding round for SPs expected. Developments must start on site by the 31 March 2026 and be completed by the 31 March 2028[10] for SPs, with a focus on delivery rather in the first five years.[11] Most SP delivery is expected to be done through land-led[12] development.

Information into the management systems (IMS, GLAOPS) on specific schemes is not entered until grant is drawn down, i.e. the first milestone is completed. Also, SPs can make changes to individual schemes during the development process until the end of the AHP 2021-2026. For the CME route, providers can apply at any time between 2021 and 2025 (2026 in London) depending on funding availability. Providers who are SPs can also apply through the CME route, although this is rare. Given that as compared to previous programmes, the SP route will play a bigger role, and SP providers will receive the majority of funding, fully accounting for the success of the programme in achieving the desired outputs will be completed when the programme finishes although a lot of the processes can be assessed in the earlier stages.

This outline of the process raises some key issues for the process evaluation:

- The design of the AHP 2021-2026 was predicated on the assumption that grant funding would be attractive and desirable for providers, and allocation of most grant was intended to be competitive to ensure value for money (VFM). The evaluators will need to determine whether this was the case and if there are drawbacks of the current grant funding model from the point of view of providers.
- It should clearly distinguish between projects delivered via the CME and SP routes, and between those by for-profit and not-for-profit providers.
- Agencies' methods of ensuring effective delivery should be scrutinised.

[8] Organisations need either to apply for qualification in their own right or join with an existing qualified investment partner.
[9] See the SP application guidance outline.
[10] Some strategic sites are expected to complete in 2029.
[11] More details in Apply guidance for affordable homes funding through a strategic partnership.
[12] Land-led delivery is where the registered provider acts as the developer and does not buy existing affordable homes (i.e. S016). See here.

- Inflation, and in particular differential inflation (rental revenues minus costs for providers), presents a major risk to the success of the AHP 2021-2026. Given the volatile economic environment prevailing as of May 2022, evaluators should monitor the effectiveness of the AHP 2021-2026 on a quarterly basis throughout all phases.
- Evaluators should compare delivery through GLA and HE, as there are some differences in the process due to the differences between London and the rest of the country (see Appendix A).
- It is important to stress that the evaluation should adopt a local rather than regional approach given the large heterogeneity on housing markets in the UK.
- Because SPs can revise their plans during the development process, accurate data for SP schemes might only become available near the end of the programme.

2.2 Counterfactual and research questions

The process evaluation is concerned with whether the AHP 2021-2026 has achieved and how effectively it has achieved the outputs set out in the business case. In addition, the evaluators should assess the AHP 2021-2026 against the **counterfactual:** *that it employed the same criteria and processes as the AHP 2016-2023*. The main differences between the two programmes are the introduction of a new model of SO and the RTSO, and new strategic priorities including use of MMC. In addition, the rules on social rent delivery were relaxed to allow social rent to be built in all areas (with higher grant rates allowed in areas of high affordability pressure), and the GLA now follows the approach of HE and uses negotiated grant rates rather than the 'tariff' rates of the old programme. Though the Business Case is based on modelled grant rates in order to estimate delivery and set targets, DLUHC do not publish grant rates. HE and GLA balance the grant rates given to each scheme or partnership with their delivery targets. This is to secure VFM for the public.

This section outlines the key sub-questions which are relevant to assessing the effectiveness of the process in delivering the expected outcomes in the ToC. They relate to RQs 1, 2 and 3 in Table 1.2. Each sub-question is followed by a suggested methodology and discussion of data requirements and timing. More detail on the methodologies is set out in Chapter 5. Some of the process evaluation findings will feed into selection of case studies for the Impact and VFM evaluations. For the process evaluation, we set out several questions that should be included in surveys of providers.

Process sub-question P1: ***How effective was the AHP 2021-2026 in delivering its aims?***
The process evaluation should start with a high-level assessment of the effectiveness of delivery of the AHP 2021-2026, exploiting variations in the design of the AHP 2021-2026 as compared to its predecessor, variations between the CME and SP routes, variations between HE and GLA, variations in schemes over the time of delivery (early stages versus late stages of the programme), and variations across regions and tenures. Figure 2.1 will be used to guide the elements to be considered as part of this evaluation. Evaluators should conduct **stakeholder interviews (using data collection methods IFG1 and IFG2—see Chapter 5)** with providers, delivery agencies, and others involved in the AHP 2021-2026 about the delivery model and programme outcomes, in a similar way to the AHP 2016-2023 process evaluation[13]. They can also carry out **case studies of providers**

[13] More details here: 2018 AHP process evaluation.

(CS3) that are SPs for AHP 2016-2023 but are CME partners in the latest AHP if deemed necessary by the evaluators, or are delivering simultaneously for HE and GLA, to determine whether the funding channel affects grant rates.

Once access to data has been granted, evaluators can conduct a high-level **analysis of administrative data** from IMS and GLAOPS to determine, for example, whether SP-route schemes require less grant per unit than scheme-by-scheme route projects. **Descriptive statistics** can be deployed to compare grant rates by tenure, region, and (type of) provider between the AHP 2021-2026 and the AHP 2016-2023. Evaluators can then analyse scheme-level and provider-level administrative data using **regression analysis** techniques such as Difference-in-Differences (DID) modelling and spatial discontinuity analyses. Those can provide insights in situations in which a policy change occurs and in which control and treatment groups can be identified. Examples of regression models are provided in Appendix B.

Key data: Given that information on starts by tenure for SP schemes can change until the point of practical completion,[14] accurate scheme-level data for SPs will only be available once developments have been completed. Some questions can best be assessed through the collection of primary data; this and related methodologies are discussed in Chapter 5.

Sub-question P2: ***How have external factors affected provider appetite for programme funding, grant rates by tenure, region, type of provider, and the delivery of the strategic priorities?***
This sub-question focuses on the external risks outlined in

Table 2.1. The evaluation should identify appropriate risk metrics and assess the incidence and importance of each of these risks, and their effects on provider behaviour and plans. The main risks likely to affect the success of the AHP are cost inflation (1) and rent inflation (2). In addition, a particular focus is also required on the financial viability of providers (9). The evaluators can use a longitudinal series of **interviews with providers (IFG1)** (small and large, HA and LA), and **interviews with HE and the GLA (IFG2)**, at the start of the evaluation and again in phases 2 and 3. In addition, some of the risks (1, 2, 3, 8, 9) should be explored using time-series **regression analyses** in phase 3 of the evaluation. During the evaluation, metrics such as default on the grant, substantial changes to initial grant terms (i.e., grant rate/location) should be monitored and assessed. At the end an ex-post **regression analysis** should be conducted looking at drivers of differential responses across providers.

Key data: Longitudinal data on scheme progress, changes to schemes, defaults, grant being returned, changes to grant rates from IMS/GLAOPS and minutes from meetings with providers. Provider level information on financing and financial health as well as revenues.

[14] Generally at the point at which a building project is complete, except for minor defects that can be put right without undue interference or disturbance to an occupier.

Table 2.1 Identified external risks and possible effects on process

	Risk	Potential effects on process
1	**Cost inflation**, if providers did not correctly price this in when preparing bids.	Higher construction costs and on-costs, higher grant rate per unit; overall lower output numbers; construction of homes in areas where they are less needed; underachievement of outcomes.
2	**Rent inflation**, affecting expected cash flows of developments.	Tenants having to pay higher rents (determined by the Consumer Price Index's measure of inflation) and higher prices of SO units (determined by the Retail Price Index's measure of inflation) might affect cash flows and financial viability of the developments. Providers reassess viability and financial health of their balance sheets on a regular basis and comply with the RSH. Inflation might affect grant appetite and lead to grant funding being returned towards the end of the AHP 2021-2026.
3	Rising **interest rates** and discount rates	Lower valuations of developments weaken providers' balance sheets and reduce their ability to borrow. Higher grant per unit and/or reduction in overall number of outputs.
4	Challenges to **supply chains and labour shortages**	Delays in the delivery of the outputs, affecting smaller providers more strongly.
5	Tighter regulations around **building safety** for existing homes	Reduction in providers' appetite for new development as they have to devote resources to existing stock.
6	**Shortage of land** / **affordable land** in the time frame of the AHP 2021-2026	Developments being built not where they are most needed but where land is most readily available. Risk is higher for schemes in London.
7	AHP 2021-2026 requirement to deliver **more housing using MMC**.	The lack of experience using MMC can lead to delays.
8	**Lower than expected demand for SO**	If they cannot sell SO units, providers may change tenure to affordable rent, where tenants do not pay service charges
9	Participating in the AHP 2021-2026 might affect the **financial viability** of providers	Participating providers might not have fully factored in above risks when bidding and this can have a negative effect on their financial viability, credit rating, RSH.

Sub-question P3: ***To what extent has changes to programme design (in particular increasing use of Strategic Partnerships and tighter controls on acquisitions) led to more land-led delivery compared to AHP 2016-2023?"***

One of the arguments for the SP route is that it enables providers to access more funding earlier, so they are better placed to secure land; a hypothesis is, this permits cheaper land acquisition.[15] In the absence of the AHP 2021-2026, and the presence of AHP 2016-2021, less of the new affordable housing has been delivered through SPs and more through CME. The counterfactual therefore is that the registered provider had to deliver through CME and not through the SP route. The evaluator can exploit whether a provider who was not a SP in AHP 2016-2023 but is a SP in AHP 2021-2026 has enabled them to buy land more cheaply or earlier in the process. This can potentially be done using a DID **regression model** [dependent variable is the cost of land as a proportion of overall scheme costs; explanatory variable is an identifier of the type of route] or a **probit model** [dependent variable is the likelihood of providing more housing or buy land more cheaply].

[15] The evaluation should consider here the differences between HE and GLA funded homes as the GLA operates differently. It has modified this from the AHP 2016-2023, where some SPs were allowed to draw down funding based on spend, to more defined milestones such as land acquisition, start on site and practical completion.

The model should control for provider and scheme characteristics. For the DID setting, the treatment group is made up of *schemes* of providers that are SPs in the current programme but were not SPs in the previous one. The control group are schemes of providers that were SPs or CME in both programmes. The regression modelling can be conducted in phase 2. Evaluators should in addition incorporate what-if questions as part of the **interviews with providers (IFG1)** discussed in Chapter 5 — similar to Milcheva (2020).[16] This can also be done in phase 2.

Key data: Identify the point in the development process land has been acquired; collect land prices/costs for relevant providers per scheme. Land costs are reported in IMS and GLAOPS. It may be harder to identify project-specific costs for the partnership route, although those are reported as a cost against which providers can claim grant.

Sub-question P4: ***Lowering the minimum initial purchase share of SO from 25% to 10% can reduce the availability of cross-subsidy funding. Does this lead to fewer homes and/or higher grant rates?***
Sale of a 10% initial share instead of 25% will reduce cash receipts for providers, which may affect the cross subsidy they can provide. All else being equal, this might lead them to request higher grant rates or deliver less affordable housing compared to the counterfactual. These effects are more likely to occur in areas with low property values. We propose a high-level analysis at provider level using publicly available data from the RSH. If this shows that providers are delivering a lower share of affordable housing out of total housing as compared to AHP 2016-2023, further analysis should be conducted to understand those differences. This will only be indicative as other changes have occurred throughout the life of the two programmes and those might have affected overall delivery. The evaluation can go further in the analysis. First, **multivariate regression models** can compare the ratio of SO homes to total homes per provider from both programmes [explanatory variable: dummy equal to one for AHP 2021-2026], controlling for provider characteristics and time fixed effects. This would give a general indication of whether programme design led to different amounts of SO being delivered. Second, however, it will not be able to show clearly that this is due to the change in minimum share, so this analysis should be complemented with **interviews with providers (IFG1)**. This should be done in phase 3.

Key data: IMS/GLAOPS for AHP 2016-2023 needed. RSH data on units per provider.

Sub-question P5: ***Does the new SO model increase maintenance costs for landlords and thus reduce provider appetite for programme funding?***
The appetite for funding can be understood as the number of applications and the agreed grant rates. Evaluators should ask this question in **interviews with providers (IFG1)** during phase 1 or 2. One caveat to keep in mind is that, since the announcement of the new SO model, all outstanding SO units delivered through AHP 2016-2023 will also be under the new SO model, as will all SO delivered through other routes like the planning system. The evaluators can in phase 3 collect data on maintenance costs and defects of new SO units before and after the date of introduction of the new SO model and conduct **regression analysis** to understand the determinants of those costs both before and after the cut-off date, controlling for provider, location and time fixed effects. Ideally homes

[16] The method details can be found in Double or Quits: The Influence Of Longer-term Grant Funding On Affordable Housing Supply.

completed during 2021-23 are best suited as this is the period that the two programmes overlap and is a natural control for other confounding factors.

Key data: Maintenance costs and defects of new SO units to be collected from selected large housing associations in phases 2 and 3 of the evaluation.

Sub-question P6: ***Does the new SO model associated with the RTSO lead to different grant rates and overall less housing as a result?***
The evaluation can use the exemption from RTSO given to some types of affordable housing[17] as a setting for a DID **regression model**. It will be up to the evaluators to decide to what extent the sample size is adequate for this modelling and alternative modelling should be proposed if not. Various indicators like grant rates, tenure mix and overall units can be regressed on a dummy which takes the value one if the provider/scheme is part of RTSO. The treatment group are the schemes subject to the new model. The control group are schemes not subject to the new model.

Key data: Grant rates and types of housing units. Identify enough observations from each group above.

Sub-question P7: ***Will the new SO model associated with the RTSO worsen the borrowing position of providers?***
RTSO may generate uncertainty amongst lenders, as they cannot know how long the asset base of the provider will remain the same. This may lead to effects on the collateral against which HAs in particular access senior corporate debt to develop affordable housing. Evaluators should **interview lenders who extend mortgages to SO providers (IFG1)**, asking whether the RTSO leads to refinancing at a higher rate or affects gearing. Furthermore, the evaluation can use the exemption from RTSO granted for some types of affordable housing as a setting for a DID **regression model** with indicators like borrowing costs per provider as the dependent variable. The treatment group are the providers subject to the new model. The control group are providers not subject to the new model. This can be done in phase 3.

Key data: Data from the RSH Data Return on borrowing costs per provider. Information on the type of units per provider (falling within RTSO or exempt) from IMS/GLAOPS.

Sub-question P8: ***Does the strategic priority to deliver more MMC and the additional grant provided for it leads to more MMC units?***[18]
The assumption is that without a requirement for the use of MMC in the AHP 2021-2026, less MMC would have been deployed. This can be tested using a **logistic regression model** assessing drivers behind providers developing similar amounts using MMC in both programmes versus those that did more in the current programme. It will be up to the evaluators to decide to what extent the sample size is adequate for this modelling and alternative modelling should be proposed if not. Evaluators should also include a question in **provider surveys (SUR3),** asking whether they would have delivered more affordable housing units, had they not been asked to used MMC. This is best done in phase 3.

[17] Exempt are LA homes, homes in designated protected areas and rural sites, supported and specialist homes (for older, disabled or vulnerable people), homes provided by co-operative HAs and by Community Land Trusts. For more on RTSO and other tenures and the exceptions applied, see Capital Funding Guide or GLA Capital Funding Guide: Section 4.
[18] The focus in the process evaluation is on whether delivery was through MMC, not on VFM considerations (see Chapter 4 for VFM).

Key data: IMS/GLAOPS MMC identifier and additional grant for MMC per scheme. Primary data collection through surveys.

Sub-question P9: ***Do scheme-level grant rates differ by provider type?***
Providers, including LAs, LTSPs, for-profit SPs and HAs, differ substantially in terms of size and their degree of focus on development. We might therefore expect grant rates for different provider types to vary as well. The evaluation should assess differences in grant rates by provider type and size using (1) a **multivariate regression model**; (2) constructing a **Herfindahl Index** (HHI) per provider similar to Milcheva and Zhu (2018) and Milcheva and Zhu (2021). The HHI measures the level of concentration across types of providers and grant rates. Both are best conducted in phase 2 or 3.

Key data: Grant rates from IMS/GLAOPS aggregated by provider and is aggregated by provider. Data on the size of provider, experience, etc. from RSH.

In addition to the above sub-questions, the evaluators should also consider

- Estimating a **spatial discontinuity model regression model** similar to Hyun and Milcheva (2018 and 2019), to see whether the SP route produces housing supply in areas *within the same region* where land is more readily available and/or is cheaper to develop (see Appendix 0);
- Assessing the difference between the two funding routes and the effects on grant rates per scheme using a **multivariate regression model;** and
- Looking at factors affecting unit size, including whether the SP route is associated with smaller units as compared to the CME route, all else equal. IMS and GLAOPS data can be used in a **multivariate regression analysis**.
- The overlap by two years of the past and current AHP from 2021 to 2023 can be used to compare homes build by each programme keeping all else equal, as they will be build in parallel.
- Where no sufficient sample size is available, alternative models to the ones proposed above should be considered. There are models who can deal with some of those technical challenges and DLUHC can consult with academics in the field if problems arise.
- The inclusion of MMC as a strategic propriety should also be analysed in relation to broader aspects of sustainability and the net zero agenda of the Government.

Chapter 3 Impact evaluation

3.1 Theory of Change: Outcomes, impacts and vision

The ToC identifies 17 short-, medium- and long-term outcomes. For the scoping of the impact and vfm evaluation, we have divided them into supply-side and demand-side outcomes. Supply-side outcomes (Section 3.2) include those related to the supply of homes at *submarket rents* or for *SO*, and wider outcomes resulting from an overall increase in *housing supply*. Demand-side outcomes (Section 3.3 and 3.4) are about how *tenants benefit* from the quality, affordability, and security of their new homes; about *new homeowners* through SO, and about *second-round effects* on households moving into properties vacated by direct beneficiaries. Section 3.5 covers wider social impacts.

Appendix 0 shows the research questions and areas of focus mapped across the ToC outcomes and impacts. The ToC distinguishes between primary outcomes (the main changes the AHP 2021-2026 was designed to generate) and secondary outcomes (effects expected to follow from primary outcomes). This scoping covers outcomes expected to occur within the next five years. We identify key sub-questions to be assessed as part of the impact evaluation. These are linked to research questions 6-12 in Table 1.2 and are explored in detail below.

3.2 Supply-side outcomes: More and better homes

Questions related to *Increased housing supply in areas of need (P1)* and *Greater range of housing options (S1)*

Impact Sub-question I1: *To what extent is AHP-funded provision additional?*
The question of additionality is at the heart of all counterfactuals. Additionality identifies the proportion of units that would not have been built had there been no AHP 2021-2026. It is thus one of the most important questions that evaluators must address. Additionality will vary between supply and demand, between rental and owner-occupied homes, and between areas; the reasons for this are set out in Appendix B.2 Assessing the additionality of grant-funded homes. The business case assumed that 100% of new affordable housing for rent would be additional; that existing units acquired with AHP 2021-2026 funding would have 0% additionality; and that 60% of SO homes would be additional. Overall additionality for AHP-funded homes was expected to be about 75%.[19]

DLUHC requires the evaluation to directly address the evidence on additionality which is itself closely related to the counterfactual. The counterfactual (here and for all impact sub-questions unless otherwise specified) is a situation without AHP 2021-2026. The most appropriate approach which we recommend the evaluators to adopt, would be to assess how relevant actors would have behaved in response to the lack of AHP 2021-2026. In that case at least some additional new affordable dwellings would likely be produced through other mechanisms, notably developer contributions. Market housing responsiveness would depend on planning constraints, land and construction costs in the

[19] Some of the relevant information around these assumptions can be found in Appendix B.2 Assessing the additionality of grant-funded homes.

absence of AHP 2021-2026. In areas of housing pressure, a no-AHP situation should see more market output because there is less competition for land and construction services, meaning costs would be lower. AHP-funded rental housing may substitute for unsubsidised market homes where affordable rents are close to market rents. For SO, the expectation is that grant-funded homes substitute significantly for market homes in terms of both demand and supply.

While this approach is the most appropriate it may prove difficult to obtain the wide range of evidence necessary. Were this to be the case it may be necessary in some cases to accept the 75% additionality assumption used in the business case together with qualitative evidence of response. It may also be useful to examine the extreme case by subtracting the number of AHP-funded units from total supply and assuming the mix of other types of affordable and market housing did not change.

Additionality should be addressed at regional and local level (ideally ward-level) and for rental versus ownership housing products. We recommend four methods. First, **regression analyses** of the impact at LA level of planning constraints and relative cost on supply responsiveness (building on the department's housing supply model and/or following the methods and literature set out below). A starting point of the evaluation which can be done in phase 1 is to estimate additionality for the AHP 2016-2023 and project into the future by simulating potential outcomes and using counterfactuals. Then in phase 3, the model can be re-estimated with the most up-to-date data reflecting the effects of the AHP 2021-2026. It will be essential to identify the locations of the newly supplied properties – both AHP-funded, other affordable housing and open market housing; and both for rent and to buy.

Assessing the level of additionality is inherently difficult due to endogeneity concerns as both market supply and supply with programme funding in different areas is determined endogenously and depend on the price of land and planning constraints. One way to address these endogeneity concerns is by including a large amount of control variables or/and fixed effects for areas and years in regressions. A starting point can be a regression model with the dependent variable being housing output by ward (or LA) net of the supply provided by the programme for that ward (LA). Explanatory variables are demographic and economic factors (e.g., price to earnings ratio, population growth, employment, industrial production, etc.) and a dummy variable equal one for the duration of the programme. A more rigorous analysis can be done similar to the empirical specifications in Carozzi et al. (2020) in which housing market output net of the programme is regressed on the treatment dummy and other area specific factors. A difference-in-differences set-up similar to Huang and Milcheva (2022) can be aimed for with treated and control groups; treated areas being those which have had certain among of AHP units and control areas those with little or no AHP units. The before/after the programme effect will be harder to test as AHP 2021-2023 was preceded by AHP 2016-2023. Ideally, areas where no AHP 2016-2023 should first be identified, if sufficient number of those exist. Also, we recommend a more granular level of analysis than LA, i.e. at ward level, as not sufficient observations will be available for the splits into treatment/control/before/after groups. The evaluators should work alongside academics to further elaborate on and correctly identify above policy effects (accounting for the endogeneity issues raised above) using econometrics.

Second, qualitative analysis including what-if questions as part of **surveys of providers (SUR3)** and **surveys of developers (SUR4)** asking how they *would have behaved* in a

no-AHP world (see Finlay et al., 2016; Whitehead et al., 2018). These surveys should also ask about the degree to which demand for SO homes led to an increase in housing supply. Finally, approximately 10 mixed-methods **case studies of LA areas (CS1)** where additionality might be expected to vary to determine whether, in a no-AHP world, land supply for different types of sites (size, tenure mix, SP or CME) would permit market and affordable sectors to build without affecting each other's output levels.

Key data: Property-level asking rents and transaction prices to be accessed by (i) Land Registry Price Paid Data (PPD) (only prices), (ii) data scraping or purchasing from private providers (rent and sales); (iii) additional property characteristics to come from Energy performance Certificate (EPC) data. The key data includes exact address, postcode, listing price, purchase price, asking rent, property attributes (e.g. size, number of bedrooms and bathrooms, garden, etc.). Locations of AHP units from (IMS/GLAOPS); Prices/rents on AHP units from CORE Sales/Lettings. Ideally collect the exact address or UPRN in addition to full postcode.

Timing: Phase 1: determination of the most appropriate model at local level concentrating on land supply constraints; initial surveys and case studies. Phase 2: estimate substitution effects, second round of qualitative research. Phase 3: repeat all elements.

Sub-question I2: ***What happened to overall housing supply in the course of the AHP 2021-2026, and how did the programme affect that supply?***
Answering this question is key to understanding supply-side outcomes. Evaluators must quantify the overall supply of new homes and the range of housing options provided at national, regional, and local level, and identify the contribution of AHP 2021-2026 to those figures. The Department has indicated that the counterfactual for impact is no AHP 2021-2026 which we advise should be addressed as set out in sub-question 11.

High level quantitative analysis will include **descriptive statistics** including both AHP process and output data as well as detailed housing completions data including (i) the increase in total housing supply (national, regional and LA levels; by tenure); (ii) the numbers of new social sector units (from the AHP 2021-2026 and other sources; national, regional, LA; by tenure) (iii) total numbers of new units and AHP 2021-2026 units per capita (national, regional, LA) (iv) share of AHP-funded and affordable housing by area type (banded by rate of population growth; house price level; house price growth; urban versus rural; and dominant housing tenure). **Correlation analysis** will examine the relationship between numbers of AHP 2021-2026 affordable homes by area and tenure, other affordable housing, and total supply; and between the current and preceding AHP. Standard policy-on/policy-off evaluation techniques will compare authorities that did not receive much funding to those that did, in terms of households/dwelling balance, affordability and other important characteristics. **Econometric analysis** using some inputs and assumptions from the Department's **housing supply model** (if available) will test whether the AHP 2021-2026 has a significant effect on supply nationally/regionally. Similar to the regression models described in sub-question I1, the evaluators can expand on the most suitable econometric modelling considering, i.e. **panel regression models and DID models** with LAs or more granular areas (i.e. wards) as the unit of analysis including as controls relevant demand-side economic and demographic variables (e.g. population, income, employment, household formation, mortgage lending, local average cost of renting, etc.), time fixed effects, dummies for programme period, etc. To get a better idea of new supply – both open market and affordable housing, individual transactions can be

used to deduce what the demand for housing which can then be aggregated up at ward or LA level. To deduce the supply of housing per area, in addition to regional aggregated data like new starts and completions, planning application data for individual units can be used and mapped across wards/LAs. Comparing areas which received no AHP-funded housing versus areas that received substantial amount of AHP-funded housing can be the starting point for the identification of the policy effect. Accessing information on the AHP-funded developments, which are part of a bigger development or a regeneration project will enable to assess how AHP funding is linked to additional housing.

Key data: IMS and GLAOPS on AHP and housing completions by tenure (national, regional, LA). Live data from DLUHC on housing supply and affordable housing supply. Macro-economic variables from DLUHC and ONS. Primary data to be collected through **surveys of providers (SUR3)** and **surveys of developers (SUR4)** in phase 1, to include questions about the factors determining overall and AHP 2021-2026 housing supply and the mix of provision. Update questions in phases 2 and 3. IMS/GLAOPS identifiers for if the site is a regeneration site and has S106 contributions.

Timing: Baseline analysis of outcomes and analysis of initial AHP 2021-2026 completions in phase 1. Interim assessment of numbers, spatial patterns, and affordable tenures in phase 2; final assessment in phase 3.

Sub-question I3: ***Was AHP 2021-2026 housing concentrated in 'areas of housing need'?***

Evaluators must first define 'areas of need'. We advise at least two approaches. First, additional housing is needed (regardless of affordability) in most areas with increasing numbers of households or shortages of available dwellings, as reflected in DLUHC's delivery test.[20] Second, poor housing affordability indicates a need for affordable homes: one common metric for both tenants and owners is housing-related expenditure (gross of HB) over household income (Meen & Whitehead, 2020; Barton et al., 2022). Other measures at LA level include the numbers of statutorily homeless households; time in temporary accommodation (TA); and the waiting list for social housing. Evaluators should see whether grant-funded homes per capita are disproportionately located in defined areas of need by undertaking a **regression analysis** linking AHP units by using the locations of those with market data of nearby housing transactions (for SO) and listings for rental units (for affordable and social rent). This will allow a more direct comparison of the AHP units and the market units for sale or rent.

Key data: DLUHC delivery targets, individual unit rents and transaction prices to be accessed by (i) Land Registry PPD, (ii) data scraping or purchasing from private providers (rent and sales); locations of AHP units from (IMS/GLAOPS); residence-based incomes from CORE Sales and CORE Lettings (also the Annual Survey of Hours and Earnings (ASHE)); rent burden for new lettings from CORE lettings; numbers of households in TA and on social housing waiting lists by LA (LA Housing Statistics (LAHS) and Homelessness Case Level Information Classification (H-CLIC)).

Timing: Collection of baseline figures for post-2016 supply of new dwellings, measures of regional and local need and rent burden by LA for new social sector lettings to start immediately to ensure appropriate data are in place (phase 1); interim assessment of

[20] See Housing Delivery Test: 2021 measurement.

spatial pattern of AHP 2021-2026 outcomes vs. housing need after 2/3 years (phase 2); final assessment at the completion of the programme (phase 3).

Sub-question I4: ***How have external factors and risks affected total AHP 2021-2026 output and its composition?***
The evaluation must address the effects of external factors on the numbers and composition of AHP-funded homes (see Appendix 0); this is closely related to outcome P2. The ToC identifies external risks including changes in housing, finance and labour markets, and regulatory change. In addition, there are the continuing effects of covid and the Ukrainian war. The introduction of First Homes funded from developer contributions may also affect the mix of affordable housing output. Currently, the highest risks are around general inflation and macroeconomic responses; inflation has already risen markedly since the agreements with strategic partners were made. Some of those risks affecting programme delivery are already covered in Section 2. Here the counterfactual is the economic situation and policy framework prevailing at the start of the AHP 2021-2026. Evaluators should compile **descriptive statistics** comparing original agreed output levels with actuals. Furthermore, data in IMS/GLAOPS regarding forecasts of project costs and data from the Regulator for Social Housing (RSH) on providers forecasts can be used to monitor changes in those forecasts and anticipate potential implications for the outputs of the ToC. Published estimates of supply elasticities should be used to estimate the impact of changes in the economic environment on market and submarket rented supply. **Descriptive analysis** of major economic factors affecting demand and the benefits and costs to HAs of providing SO products should also be conducted. This can be complemented by asking both SO purchasers and providers (as part of **beneficiary surveys [SUR1, SUR2]** and **surveys of providers [SUR3]**) how interest rate changes and the modified product affected their decisions.

Key data: As sub-question I1 plus macro-economic data from HMT and Bank of England. RSH provider financial forecasts; IMS/GLAOPS data in changes in plans for sites.

Timing: Analysis of expected effect of observed changes in interest rates and inflation on supply of market, affordable and social rented housing and SO in phase 1 as well as initial surveys of providers and developers (phase 1); assessment of changes in expected and actual supply of market and sub-market housing including regression analysis of determining factors; surveys of beneficiaries, providers and developers (phase 2). Repeat all elements in phase 3.

Questions related to *More decent and quality housing in areas of need (P2)* and *Improved energy efficiency (S2)*

Sub-question I5: ***To what extent do the dwellings built under the AHP meet required design, energy and building standards?***
The relevant guides include the National Design Guide (MHCLG, 2020) and the GLA's draft Housing Design Standards LPG (Mayor of London, 2022). Because planners are encouraged to apply the guidance to all new residential schemes, whether AHP 2021-2026 funded or not, the evaluators' first task will be to establish whether the grant funders' requirements were in fact more stringent than those typically applied in LAs. If a difference is found, then the counterfactual is **that schemes must meet the standards normally applied** for similarly sized residential schemes. If there is no difference – that is, if AHP-funded homes must meet exactly the same design standards as non-AHP schemes – then

the conclusion will be that the required standards had no impact, as the guidance would have been applied in a similar way by LA planners even without this requirement in the AHP 2021-2026. The evaluation will also look at these standards compared to earlier programmes.

This sub-question will also address the use of MMC. MMC is an umbrella term that encompasses a range of prefabricated building techniques, from individual panels to entire modular dwellings. In the UK, the use of MMC has increased very rapidly over the last 15 years, with high-profile investors such as Legal & General entering the market (Wilmore 2019). The government is encouraging wider uptake of MMC, which is seen as a way of increasing productivity in the construction industry and constructing buildings faster, to a higher standard and, eventually, more cheaply. If MMC techniques made construction cheaper (all else being equal), then we would expect housing providers to adopt the techniques when possible, regardless of programme requirements. Social providers often specify higher space and energy efficiency standards for their rented housing than required minima. Evaluators will have reviewed documents on contracted standards under Section 2.

Descriptive statistics to be produced on proportions of AHP 2021-2026 homes by tenure and provider type meeting each relevant requirement. Detailed **case studies of schemes (CS2)** to determine the degree to which design, energy and building standards are met. The case studies should include at least six that used MMC, and approximately six that look specifically at design--three in London and three outside of London. For these six, the evaluators should select one scheme considered of high design quality, one average, one low (as assessed by the advisory board of the DLUHC Office for Place). Design-focused case studies to include full Building for Healthy Life assessment (Birkbeck et al., 2020). **Interviews with providers** and developers **(IFG1)** about implications (structural and financial) of the requirement to use MMC and to meet design codes. Questions in **beneficiary surveys (SUR1, SUR2)** about building standards, design and MMC.

Key data: Documentation from IMS/GLAOPS including data on grant-funded units meeting minimum AHP 2021-2026 thresholds and data on MMC.

Timing: Phase 1: Identify differences in quality standards between homes funded through AHP and not, preliminary assessment of adherence. Phase 2: Mid-term review. Questions on these topics to be included in each stage of provider and developer interviews. Case studies, at least one year after schemes are completed, in phase 3.

Sub-question I6: ***Do the types and sizes of the AHP 2021-2026 units reflect national, regional, and local need, including requirements for supported housing?***
The sizes and tenure mix of AHP-funded units will vary depending on local need. Evaluators must take account of other new social and supported-housing supply, including that delivered through developer contributions. The expectation is that 10% of AHP-funded homes will be accommodation including additional support. The evaluation will determine how much was in fact provided; whether the homes were built in appropriate locations; and who owns and manages them. **Descriptive statistics** should first be produced comparing the size distribution of AHP 2021-2026 units to evidence of housing need by household size in each LA (especially those waiting longest), and tenure mix to evidence of need for social/affordable/SO housing. Provision of supported housing will be compared to evidence of need (i.e. waiting list information). Household characteristics of new residents

will be matched to characteristics of AHP-funded homes and where possible to their previous housing, to see whether and how their housing conditions improved.

Key data: IMS/GLAOPS data on AHP 2021-2026 dwellings of all types completed including tenure, size, and supported/general needs. Waiting list data are available in Section C of the LAHS but waiting time by the size of unit and whether in need of support will need to be collected from LAs directly. We adviser that the Department requests these data. Evidence on household characteristics of families in TA is available. Sizes of households in social housing will become available from the 2021 Census. The English Housing Survey will cover later years. CORE Lettings contains demographic information about tenants of new social rental homes, plus information about dwelling attributes and locations of previous homes (regardless of sector) which will be key to the impact evaluation. We note that AHP units in CORE cannot be individually identified at the present time and suggestions are provided in Chapter 5 as to how to address this.

Sub-question I7: ***How does the quality of AHP-funded SO homes compare to other AHP-funded units and to new market homes?***
The evaluation will look at how SO homes compare to other AHP units and other new affordable housing units, in particular whether they are smaller. Comparison with market housing will be possible in case study areas, through questions to developers and from Land Registry PPD. The appropriate mix of sizes will in part depend on affordability and the demographics of would-be buyers. The English Housing Survey (EHS) shows that SO buyers come from the PRS or are newly forming households and may thus want smaller homes. However, there may also be 'flipping' between tenures by providers. The evaluation should clarify differences in size and standards at planning stage and in terms of actual provision. For this question, the counterfactual is the AHP 2016-2023. The evaluation will use **descriptive statistics** to examine the size of units by tenure and location in the current AHP 2021-2026 and its predecessor, and existing SO properties however funded. It will also compare the size distribution of SO homes by dwelling type (house, flat) with those in the new-build market sector.

Key data: Size, tenure, and location of grant-funded homes from GLAOPS/IMS; 2021 census data on existing SO ownership properties. Number of bedrooms is in CORE Sales. Land Registry PPD and case study area data should also be available. Published National Housing Building Council (NHBC) data include type of dwelling (house/flat) although coverage in London appears to be only partial. GLA's Planning London Datahub has more detail. NHBC do not publish bedroom numbers; evaluators should request access. Energy Performance Certificate (EPC) data can also be used. Management information data from HAs on SO housing.

Timing: Secondary source analysis and data collection from HAs and LAs should be conducted in phase 1. Satisfaction with attributes including energy efficiency and cost will be measured through a longitudinal **beneficiary survey (SUR1, SUR2),** administered to households shortly after they move in and again at the end of phase 3. **Surveys of providers (SUR3)** to ask how dwellings compare (when homes are built, phases 2 and 3).

3.3 Demand-side outcomes: Renting (social & affordable)

Questions related to *Tenants access homes that are suited to their needs (P3)* and *Accommodation is freed up for those in need (P7)*

This section looks at who lives in grant-funded housing and whether the homes meet their needs. There are four sub-questions, all aspects of the same issue.

Sub-question I8: ***What types of households live in AHP-funded homes, and are the homes an appropriate size?***
The evaluation should look at the characteristics of households accommodated in grant-funded housing (number of people; attributes of any children; whether adults are of working age; full-time/part-time employment; income; long-term illness and disability) and assess the suitability of the accommodation for them. It can compare beneficiaries to other households allocated to the social sector in the same period and compare density of occupation in AHP 2021-2026 units to that of other social units to determine whether beneficiaries are more appropriately housed in the former. The counterfactual would be no AHP 2021-2026, meaning beneficiary households would spend more time on waiting lists and AHP and SO households would not form or would remain as tenants. The additionality assumption (see discussion under 11) would determine the numbers affected. Given that at the moment AHP units cannot be identified in CORE Lettings, which is the main database needed for this analysis, the assumption can be made by the evaluators that tenants and SO owners do not differ across AHP-funded and non-AHP funded affordable homes. This seems to be a plausible assumption but can be further assessed by the evaluators.

Descriptive analysis at national, regional, and local levels will look at household characteristics of beneficiaries as well as eligibility for Universal Credit (UC) and other benefits, previous tenure, and attributes of former homes to the extent possible. Household structure, including age, will be compared to the number of bedrooms to assess whether AHP-funded homes are formally suitable and how this compares to other households in the social sector and the PRS. **Beneficiary surveys (SUR1, SUR2)** to ask about satisfaction and about characteristics of previous homes. **Case studies of LA areas (CS1)** to include questions on allocation policies.

Key data: CORE Lettings is the main source of above information. It covers attributes of both households and dwellings at the initial point of entry in the property and would provide most of the data required. In addition, data about social dwellings and characteristics of social and private tenants are also available in the EHS but is best to use it at the regional level or above. The Census will include these data.

Timing: Phase 1: Baseline information about households and their housing as soon as allocations commence; surveys of providers and beneficiaries. Phase 2: repeat surveys, plus initial interviews leading to an interim assessment. Phase 3: secondary data analysis and further interviews leading to overall assessment.

Sub-question I9: ***Who lives in AHP-funded supported housing, and does it meet their needs?***

The evaluation will look at the attributes of households accommodated in supported housing and the suitability of their accommodation compared to their previous homes. A large proportion of rough sleepers require additional support so this group should be examined separately. The counterfactual is that the expected numbers of supported units in the AHP 2021-2026 (10% of rented units) are not built although there may be offsetting provision through other schemes.

Descriptive analysis of characteristics of beneficiaries and their supported housing. Further information on supported housing includes, e.g. client group (housing for elderly, people with learning disabilities, care leavers, mental health issues), level of support provided by the landlord, whether anyone in the household has a long term illness, whether the resident needs housing adaptations, and whether the property they are given is wheelchair accessible. The Department has detailed secondary data on dwelling and household characteristics to which evaluators will have access. More detailed household information including details of previous homes, and satisfaction to be collected via **beneficiary surveys (SUR1, SUR2)** and **surveys of providers (SUR3)** of supported housing. Information on need and data on characteristics of dwellings and services will be collected from **provider surveys (SUR3).** Supported housing will be covered in **case studies of LA areas (CS1)** including through interviews with LA and HA providers. A small number of supported-housing dwellings will be included in **case studies of schemes (CS2)**. At each phase there will be detailed examination of what is being provided and to whom it is being allocated as compared to evidence from the EHS. The surveys are to be conducted in each phase, and the case studies at the end of phase 3.

Key data: CORE Lettings has data about beneficiaries. The Department has data available on client groups and needs which should be requested. Primary data to be collected as set out above.

Sub-question I10: ***Are beneficiaries better housed in AHP-funded homes?***
Outcomes set out in the ToC implicitly represent improvements on existing conditions. To assess whether households benefited from moving to new homes, evaluators must understand how they were *previously* housed including the suitability of that property in terms of size and tenure and whether the household was in emergency/TA, newly formed, and/or overcrowded. Analysis as with sub-question I8 with respect to previous accommodation at national, regional, and local level. **Descriptive statistics** should be presented on the attributes of households coming from TA and characteristics and costs of that TA (not necessarily possible at individual level so using secondary data). Each element will be addressed in each phase.

Key data: CORE Lettings requests information about previous accommodation and its tenure and location, including TA. EHS data on housing conditions of households with similar household characteristics. It may be possible to track beneficiaries coming from TA using the H-CLIC database, if it is available in this form at the time of the first evaluation. Evaluators will require access to LSE's unpublished 2019 report for DLUHC on the costs of TA (Whitehead et al., 2019). Questions about previous residential conditions will also be asked in the **surveys of beneficiaries (SUR1, SUR2).**

Sub-question I11: ***Do other households benefit from moving to freed-up homes?***
To assess the full effects of the AHP 2021-2026 programme it is necessary to track *second round effects***,** to see whether the accommodation vacated by beneficiary households has

enabled other households to form or to live in more appropriate housing. Ideally it would be desirable to continue down the chain, for moves within the social rented sector. The extent to which it is possible to track second-round moves will depend upon the quality of data on the vacated units' addresses in CORE Lettings and CORE Sales. There is no obvious mechanism for tracking individual vacated privately rented units from secondary sources, although evaluators should examine the potential for using consumer data to track moves in the private sector so the evaluation relies heavily on accessing address data on current and previous accommodation from CORE (Kuleszo et al., 2021).

A counterfactual of not having AHP 2021-2026 implies those who would have been accommodated (based on additionality) remain on waiting lists for longer and may remain in their existing units. Therefore, to compare the benefit of being in an affordable home versus in a privately rented accommodation (which might the majority of the households), access to listings on rental properties in the area of the previous accommodation of the AHP resident should be secured (i.e. Zoopla/Rightmove). Local Housing Allowance (LHA) rates should also be taken into account. More details for reference can be found in Appendix 0. (This will be important with respect to HB – see below.) **Descriptive analysis** of second round (and where possible subsequent) moves by household type, size, and income; before-and-after tenure; before-and-after dwelling size; and before-and-after rent. **Mobility maps** can also be produced showing how households move across locations. This can be done using GIS coding at ward level. This will be valuable as there is little information about spatial patterns of moves in the private and affordable housing market.

Key data: Past address and type of accommodation from CORE. Data on household and dwelling attributes as for first-round beneficiaries from CORE. Property ID in CORE.

Questions related to *Tenants move into rented homes they could otherwise not afford (P4)*, *Reducing financial hardship/increasing financial security (P8)*, *Greater housing security (P9)* and *Reduced fuel poverty (S5)*

Sub-question I12: ***Are AHP-funded homes affordable and secure for beneficiaries?***
This relates to the demographic questions covered in the previous section but focuses on whether those who move into AHP 2021-2026 accommodation can *afford* their new homes and the resultant effect on the HB bill. There are many definitions of affordability (Meen and Whitehead, 2020), from a simple percentage of income paid on rent to measures of residual income or the HB rules themselves. Evaluators will need to identify the most appropriate measure given the data available. The ToC outcomes target those who cannot afford market rent for an appropriate home. Sub-market rents together with UC should ensure affordability but it is also necessary to assess whether beneficiaries could have afforded a comparable private rented property. This will vary between LA areas. The intended outcomes of financial stability, housing security and lower fuel poverty relate to security of affordable housing tenure and the predictability of rents and running costs (i.e. service charges) in the affordable housing sector. Those moving from emergency housing or TA will generally benefit most. Those coming from the PRS gain greater security and more generous HB conditions. Newly formed households gain the same benefits. More generally the impact of the AHP will allow more households in need to be accommodated faster.

The evaluation will look at whether beneficiaries could have afforded a similar property in

the market sector by comparing market rents for similar units close to the location of the tenant to actual rents paid and to household incomes. This can be done using **propensity score matching (PSM)** of properties with similar characteristics matching CORE Lettings and CORE Sales data with property-level market data (for sale and for rent). If individual AHP properties cannot be obtained may use site level or lowest available area. The evaluation should also compare affordability in AHP-funded (or comparable affordable) homes and previous accommodation.

The programme's contribution to households' financial stability can be assessed by change in residual income and by qualitative self-assessment, collected through **beneficiary surveys (SUR1, SUR2)**. Housing security will be evaluated by the numbers and proportions of beneficiary households moving from less-secure tenures to social and affordable rented housing. Second-round effects will be assessed in a similar way using data from CORE Lettings about dwellings and their changing occupants.

As part of **case studies of LA areas (CS1)**, providers should be surveyed about their allocations policies. **Beneficiary surveys (SUR1, SUR2)** of tenants should ask about satisfaction; rent paid in previous accommodation; whether the accommodation was overcrowded; other problems encountered; rent vs income in previous accommodation and now; and self-assessed financial stability of the household. As the section depends on the timing of tenant allocations timing will depend on progress with the AHP 2021-2026. It will be a continuous process as spelled out above, involving each element in each phase.

Key data: CORE Lettings/Sales has data on the households' previous tenure, make-up of the households, incomes, rents and whether the tenant is eligible for HB. Individual rental and sales data can be sourced from listings websites. Those websites will only have asking rents/prices. Transaction prices can be matched using the PPD by Land Registry. Big data techniques can be used for that. See Huang and Milcheva (2021, 2022)

Sub-question I13: ***Does investment through the AHP 2021-2026 reduce the HB bill?***
The effect of the AHP 2021-2026 on the HB bill comprises one important element of impact and feeds directly into VFM. The Department's appraisal model assumes that in the counterfactual, beneficiaries would live in the privately rented sector and, where eligible, receive the maximum LHA (given location, household structure and income). Their appraisal also includes the effect of newly forming households and uses secondary data and reasonable assumptions at the regional level. The objective of this sub-question is to improve this initial assessment and provide more detail about the sources of change in the HB bill. It thus directly addresses the issue of the counterfactual with respect to HB. The programme's effect on HB depends on changes in the housing circumstances of those allocated an AHP 2021-2026 home, changes in their eligibility for HB as a result of the move, and changes in the amount they receive (if any). There are four initial pathways for beneficiary households, each with its own effect on HB (see Appendix B for more detail). Table 3.1 illustrates this.

In principle evaluators could estimate the net effects using data on beneficiaries' actual rents/costs and eligibility for UC in their previous and AHP 2021-2026 housing, assigning each household to a category and calculating net effects. Some of these data will be gathered through **beneficiary surveys (SUR1, SUR2)**, which will ask about Universal Credit or HB received in previous and current accommodation. It may be necessary to supplement these data with local average amounts for HB receipts, rents, and incomes.

Key data: Information on beneficiary rents and eligibility for UC in previous and current housing from CORE Lettings and beneficiary surveys.

Table 3.1 Pathways and effects on HB

First-round pathways into AHP-funded homes	Effect on HB
Tenant comes from a similar-sized unit in the privately rented sector where rents are normally higher	Reduction in HB
Tenant comes from overcrowded or otherwise unsuitable accommodation into suitable (larger) AHP 2021-2026 housing.	If original unit is social, HB bill will increase as larger social units generally have higher rents than smaller ones
	If original unit is private, HB could increase or decrease depending on relative rents
Tenant comes from emergency or TA where rents are usually significantly higher than for normal tenancies, especially where support is provided	Move into suitable AHP 2021-2026 accommodation normally results in a significant saving for the public purse and higher quality accommodation for the tenant
Tenant is a newly formed household eligible for HB	Increases HB bill
Selected second-round pathways	**Effect on HB**
Newly formed households eligible for HB move into the accommodation vacated by tenants obtaining an AHP 2021-2026 dwelling	Increases HB bill
Tenants move from overcrowded or otherwise unsuitable accommodation into the vacated (larger) unit	If original unit is social, HB bill will increase as larger social units generally have higher rents than smaller ones
	If original unit is private, HB could increase or decrease depending on relative rents.
	If original unit is TA, HB will decrease

Note: dark blue cells = HB falls; light blue cells = HB rises; mid blue cells = unclear.

3.4 Demand-side outcomes: Ownership (SO and RTSO)

Questions related to *Entrants to the new model of SO (P5)* and *Staircasing progression through increasing shares (S3)*

Key changes to the AHP 2021-2026 include the new SO model and the RTSO. The assumption underlying the ToC is that those changes improve affordability of ownership tenures relative to the AHP 2016-2023. It is important to mention that in future the SO programme is expected to become much more common than it has been in the past. From

a total supply of 162,000 homes, between 40 and 50 percent will be SO units relative to an average supply of 233,690 per annum of additional dwellings for the period 2018-2021".[21]

The evaluation has identified a number of sub-questions which address the demographics and tenure composition of shared owners; their behaviour and the short- and medium-term benefits accruing to them; and the long-term benefits of the policy. The majority of the evaluation related to SO should be done in phase 3 as SO units start to sell. Phases 1 and 2 can be used to explore the extent to which the sub-questions could be addressed with secondary data including data collection, descriptive analyses, regression analyses and theoretical models. During phases 1 and 2, gaps and data needs for understanding the characteristics, behaviour, and experience of participating households should be identified.

Sub-question I14: ***How would households have behaved without AHP 2021-2026?***
This sub-question establishes the counterfactual for outcome P5 in the ToC. In the absence of the AHP 2021-2026, households could have stayed longer in other tenures (e.g., private renting or living with friends and family) or purchased a different type of home with a conventional mortgage. CORE Sales data tracks the mix of households entering the scheme by age, gender, previous location and tenure, and has information on deposit, length of mortgage, and gross annual income. For each observation in CORE Sales, we recommend the use of **PSM** to identify a corresponding non-SO household match in the EHS and the Understanding Society datasets. Differences can then be studied along several dimensions – e.g., size of home, location, price, number of bedrooms, annual cost and proportion of income spent on housing. This can be done in phase 3. It should be noted that CORE Sales covers only PRP sales. Sales by LAs and non-registered providers are not included in the CORE Sales dataset although they can currently be funded for SO delivery. The demand for SO, however, depends on household characteristics and the characteristics of the property, rather than the characteristics of the supplier. Thus, an analysis of CORE Sales data would provide reliable inferences regarding household behaviour. If CORE Sales data is deemed insufficient, the evaluators may decide to use other data sources or engage in additional data collection, provided that such efforts result in comparable or better quality of data relative to CORE Sales.

Sub-question I15: ***What are the characteristics and previous tenures of the households buying SO?***
The extent to which the programme relaxes affordability constraints depends on the demographic profile of beneficiary households. The sales of homes in the SO scheme are reported by HAs to DLUHC. These data, along with demographic characteristics of households, are available in CORE Sales and could be used to create **descriptive statistics** of the age composition, household types and previous tenures of shared owners. CORE Sales data are biased toward responses from Southern England. This can be done as soon as units start to sell, in phase 3. Information about buyers' financial characteristics will also be collected through the **survey of mortgage lenders (SUR6).**

Sub-question I16: ***How do the regional demographics of shared owners in AHP 2021-2026 compare to AHP 2016-2023? How has this composition changed as a result of the introduction of the new SO model and RTSO?***
As a first step, evaluators should produce **descriptive statistics** annually and by region. Using **panel regression** analyses, evaluators will examine whether the changes in AHP

[21] DLUHC Statistical release on housing.

2021-2026 rules led to changes in the demographic composition of households participating in the programme. Data from previous years should be used to assess the impact of the AHP 2021-2026 provisions. More detail on the empirical specifications is provided in Appendix 0. Information about buyers' financial characteristics will also be collected through the **survey of mortgage lenders (SUR6).** The evaluators should note that preliminary conversations with CORE Sales team indicate that there should be awareness that relying on CORE sales to provide a regional analysis can lead to skewed results. This should be further explored in the evaluation.

Sub-question I17: ***Has SO allowed families to overcome affordability constraints? Do shared owners buy the same type of homes that they otherwise would?***
Mortgage financing is critical for the growth of SO. From the buyer's standpoint, the SO and RTSO schemes are shared-equity mortgage arrangements. To establish the availability of credit and the level of competition among mortgage lenders, the evaluators should use CORE Sales to compile a list of mortgage lenders offering SO mortgages as well as the annual percentage rate of charge (APRC) of these mortgages compared to conventional ones. To understand the availability of credit for shared owners, **surveys of mortgage lenders (SUR6)** and **interviews with mortgage lenders (IFG1)** on the assessment of credit risk and the type of credit offered to shared owners should be carried out in phase 2. The above questions also imply the assessment of whether the household would have been able to buy at all if there were no offer of SO properties in the AHP 2023-26.

Sub-question I18: ***How do shared owners staircase and what does it mean for their wealth accumulation?***
Empirical methods can shed light on how households staircase and what this means for their lifetime wealth. The SO scheme allows substantially more flexibility in staircasing than a conventional mortgage. Data from Land Registry, CORE Sales and from selected HAs with large SO programmes can be used to assess behaviour. The effects of demographics and market dynamics like local house prices and rents on staircasing can be evaluated using a probit **regression model**, in which the probability of staircasing is regressed on variables such as age, gender, gross annual income, receipt of HB, local rents, house prices and affordability metrics. Evaluators should also analyse optimal staircasing behaviour and assess the benefits of increased flexibility for the lifetime wealth of the household. The theoretically optimal behaviour should be contrasted with actual behaviour with respect to the initial equity purchased and the observed staircasing behaviour. Parameters of observed staircasing behaviour should be used to calibrate **agent-based models** on the actual behaviour and experience of shared owners. A more fundamental question is the potential effect of the SO programme on household financial decisions and participants' ability to manage lifetime wealth, which can be assessed using **theoretical models** in the absence of secondary data by the end of the evaluation. Information about buyers' staircasing behaviour will also be collected through the **survey of mortgage lenders (SUR6).**

Sub-question I19: ***Does SO provide a secure tenure?***
Alternative mortgage products, including SO, allow borrowers some control over the size of their monthly payments. There is evidence that this type of repayment schemes allows borrowers to better manage their lifetime financial resources (Cocco 2013). Therefore, it is expected that the hybrid nature of SO relaxes affordability constraints making defaults less likely. The SO payments have three distinct components: mortgage payments, rental

payments, and possibly staircasing payments. The major uncertainty and threat to the security of the SO tenure is associated with defaults on mortgage and rental payments. How these defaults depend on household characteristics need to be studied empirically once SO data become available. Using data from UK Finance on arrears and possessions, evaluators can perform a **regression analysis** using a binomial logit model, where the outcome variable is whether the household defaulted on its mortgage, regressed on whether the home was purchased as SO or with a conventional mortgage. Another useful comparison is that to a shorthold tenancy in which the landlord can unilaterally decide not to extend the tenancy contract. This can be done in phase 2 of the evaluation. **Provider surveys (SUR3)** should collect data about the percentage and characteristics of shared owners vulnerable to default and how HAs manage delinquent tenants. This can be done in phase 2 or 3.

Sub-question I20: ***What is the value of the RTSO for social tenants?***
SO buyers come predominantly from the private rented sector, but the RTSO programme is available to tenants in affordable and social rent, where tenure security is higher and housing costs lower than in the PRS. The 2008 evaluation of the HomeBuy Pilot Scheme[22] (a similar arrangement) showed that take-up was slow due to the limited benefit to social and affordable housing tenants. RTSO embeds the optionality of changing tenure from social rent to SO. While this optionality is given to social tenants for free, it does have an embedded value, which can be assessed using **theoretical models** such as real option theory. The analysis can be conducted in each phase of the evaluation. Tenants' own views of the value of RTSO, and how their perception changes over time, will be assessed through longitudinal **focus groups of tenants who have RTSO (IFG3).**

3.5 Broader social impacts

Questions related to *Creation of mixed tenures (S4)* and *Creation of mixed communities (P6)*

Sub-question I21: ***Did grant-funded homes contribute to the creation of mixed tenures and mixed communities?***
Mixed tenure implies a range of tenures are being provided in the area including owner-occupation, shared ownership and different forms of affordable rented housing. It may also imply different sizes and types of dwellings. Mixed communities implies varying demographics and varying income levels among households in the area. Policies are usually applied to new build and regeneration developments so can only affect in proportion to the levels of new build.

Many grant-funded units will be built as part of mixed tenure developments, including a range of market and affordable dwellings units and, often, commercial or retail uses. These outcomes focus first on the tenure make-up of AHP-funded schemes; the types of sites and areas they occupy (greenfield/brownfield; near other social housing/ex-commercial/suburban/mono-tenure housing etc.). They also relate to the demographics of AHP 2021-2026 households and their neighbours. 'Mixed communities' refers to the diversity of local residential populations and their relationships – but also ultimately whether the AHP 2021-2026 reduces disadvantage. Research has shown that more

[22] See live table 683 in the Evaluation of Social HomeBuy Pilot Scheme for Affordable Housing report. The numbers continue to be small.

housing is being provided in areas that were not traditionally residential, with significant tenure and household-type mixing as a result in part of developer contributions. On the other hand, in regeneration areas, younger purchasers (often buying through SO) move into traditional single-tenure areas (Crook et al., 2011).

In principle, the counterfactual is the site and the immediate local area without the AHP 2021-2026 element of the development. The creation of mixed tenures is the easier to monitor and evaluate. Evaluators should collect data on the tenure mix of new build on each site with AHP-funded homes. Many, especially the larger ones, will include a range of tenures and house types. All new dwellings on each site (not just the affordable ones) should be categorised by tenure, size and dwelling type. To understand the surrounding areas, evaluators will need to collect data about the existing stock from sources including the 2021 Census[23] (once Small Area Statistics are available), other household surveys and planning documents. Designations such as regeneration area, urban area, greenfield site, etc., have been shown to be relevant in assessing the likely community mix (Cho and Whitehead, 2021).

Some analysis can be done of the grant application forms, which include details of any community infrastructure that may be agreed on a site-by-site basis. These data can be identified and related through spatial **regression analysis** to size of site, mix of tenure being provided on the site, location (urban/rural and LA/region), etc. More fundamental analysis would address whether there have been changes in the levels of disadvantage in these areas (income; unemployment etc. – see below). In addition, **beneficiary surveys (SUR1, SUR2)** and the stakeholder interviews in the **case studies of LA areas (CS1)** and **case studies of schemes (CS2)** should include questions on perceptions of the area; how AHP-funded schemes are integrated into the locality, etc.

Timing: Phases 1 and 2: Collection of site-specific data as well as basic data about the local area from the census. Phase 2: Compare household attributes of local AHP 2021-2026 beneficiaries with Small Area Census data. Surveys and interviews within case study LA areas. Phase 3: Repeat surveys and case-study interviews to assess changes in tenant experience/attitudes; complete detailed analysis. Case studies of schemes. Note that many community impacts take a long time to emerge and will not be apparent by the end of the evaluation.

Key data: Details of existing populations' age, household structure, tenure, ethnicity etc. can be obtained from the Census Small Area Statistics. Income cannot be obtained this way although there are surrogates. Demographics from CORE can be aggregated at a narrowly defined area/community to determine the tenure mix. Exact addresses are not needed for this exercise. In case the evaluators need the exact addresses, Chapter 5 explains in more detail how to go about this. Surveys of households will complement above data.

[23] It is important to recognise that the Census was taken under very difficult circumstances.

Questions related to *Improved health and wellbeing (S6)*, *Reductions in crime; reductions in child poverty, improvements in education (S7)*, and *Increased access to employment (S8).*

Sub-question I22: ***How are beneficiaries' lives changed by living in their new homes?***

The counterfactual is beneficiaries' previous housing situation. Existing research into housing quality suggests that moving from a dilapidated or overcrowded home to a more suitable one can have beneficial impacts on residents' physical and mental health (e.g., Roys et al., 2016). Moving from an unaffordable home to a more affordable one can reduce financial and therefore psychological stress. These effects are however long term and may be difficult to pin down in the timeframe of the evaluation. **Theoretical models** and **agent based models** can be used instead during the evaluation to forecast household behaviour and are further elaborated in Appendix B.4 The impact of the AHP 2021-2026 on housing benefit**. Beneficiary surveys (SUR1, SUR2)** are best suited for this question although they will only be a proxy and might not be able to clearly identify the effects unless the evaluators interview a similar cohort of residents to that which has moved into AHP homes but has not had the chance to move to an AHP home. This can be done by tenure type, location, type of previous accommodation, income level, etc. from CORE as a starting point in identifying the control group. The surveys hence will collect information about both former and AHP 2021-2026 homes including size, physical condition, housing expenditure and with whom they were living. The surveys will also collect self-reported physical and mental health information. However, the impact of AHP will likely only be one of many elements that could impact on wellbeing. Qualitative questions to beneficiaries are likely to provide stronger evidence.

Sub-question I23: ***How has the AHP 2021-2026 housing affected local levels of employment, crime, education etc.?***

AHP 2021-2026 housing is aimed to benefit the neighbourhoods where the homes are located, not only residents themselves. These neighbourhood effects may come through the construction process (e.g., employment) but also through high-quality design and increased social mix. The counterfactual depends on scheme type. For AHP-only schemes, the counterfactual is the area prior to the development; for mixed-tenure schemes it would be the scheme as built excluding AHP 2021-2026 housing. In all cases there are likely to be many other confounding factors which makes the identification of the AHP 2021-2026 outcomes difficult. The quantification of such effects can be further explored by the evaluators if deemed important. For example, effects can be modelled using an **agent-based model** and academics can be commissioned to do so. **Beneficiary surveys (SUR1, SUR2)** can collect information about respondents' views of employment, crime, and education locally, but this might not necessarily be associated with the impact of the AHP. These neighbourhood effects can also be explored in all **case studies of LA areas (CS1)**, which should include before and after interviews of stakeholders in LAs and the police. In particular the effects can be more clearly identified for large regeneration projects which involve a large amount of AHP funded housing, and the evaluators should explore this possibility further.

Chapter 4 Value for Money evaluation

4.1 VFM for the Theory of Change outcomes

VFM must be tested against the intended outcomes of the ToC (Figure 1.2). The primary outcomes[24] are P1 – P8 (set out in Impact), which respectively cover supply, housing quality, suitability, affordability, SO, mixed communities, freeing up other housing, reduced financial hardship and greater security. The main outcomes from the ToC can be summarised as an increased supply of decent-quality, affordable housing in areas of need, *over and above what would otherwise have been provided.*

Following the recommendations of the Magenta Book (HM Treasury 2020), the VFM evaluation is separate from the process and impact evaluations. The impact and process evaluations are not expected to make any reference to VFM or take it into account. In practice, though, the three types of evaluation are not discrete: the VFM evaluation will draw on much of the same material as the process and impact evaluations.

The VFM evaluation is primarily focussed on addressing research question 4 in Table 1.2: *To what extent has the AHP 2021-2026 delivered value for money?* It also follows on from the process evaluation and some of the sub-questions identified in Chapter 1. The Magenta Book gives the general VFM question as, '*Was this intervention a good use of resources?*' and sets out some possible approaches, including looking at how cost-effective the intervention was in terms of unit cost; whether the benefits of the intervention outweighed the costs; whether the intervention was the best use of resources and how the benefit-cost ratio (BCR) compares to that of alternative interventions.

The AHP 2021-2026 has multiple targeted outcomes. Inevitably there will be tensions between them and trade-offs in terms of VFM. Resources (money, time) expended on achieving one aim may not contribute to other aims, or indeed may make achieving them more difficult. In the case of affordable housing, there are some obvious trade-offs. One is between number of homes and affordability: a given amount of grant can go towards providing a few very affordable homes, or many less-affordable ones. Another relates to location: a given amount of grant can provide a few affordable homes in areas where housing costs are high, or many homes of similar affordability in areas where housing costs are low. These trade-offs are intrinsic to any policy decisions about affordable housing.

We recommend a mixed-methods approach for the VFM evaluation, which will include a social cost-benefit analysis (SCBA). In a SCBA, the benefits from an intervention are monetised and compared with the costs of that intervention (over and above the business-as-usual costs). The technique can be used either for *ex ante* appraisal or for *ex post* evaluation, and is the standard method used by central government to assess the VFM of proposed interventions (HM Treasury 2020, 2018). The more the value of benefits exceeds costs *ex ante*, the stronger the case for undertaking an intervention. The business case for the AHP set out the *ex-ante* CBA for the programme, with expected net benefits of £15.4 billion (89% of which came from land value uplift (LVU) related to new housing

[24] There are also several secondary outcomes, not listed here.

supply), net public sector cost of £9.1 billion, and an overall BCR of 2.7. The ex-post VFM evaluation can be compared to the ex ante analysis, if desired.

VFM is presented in two sections: section 4.2 deals with overall VFM of the AHP 2021-2026, and section 4.3 is about how scheme criteria affect VFM.

4.2 Overall VFM

Sub-question V1: ***Did the benefits of the AHP 2021-2026 outweigh the costs?***
The evaluators will produce a SCBA of the programme. Following the approach of the Green Book (HMT 2020b), the SCBA will be a spreadsheet model which separately sums overall costs and benefits by category (see Table 4.1) and compares them.

The *costs* of the AHP 2021-2026 are direct financial costs to government in the form of AHP grant, administrative costs for DLUHC, HE and the GLA, as well as indirect costs in the form of decrease (increase) in HB. The *benefits* of the AHP 2021-2026 come from the value of the additional new homes produced and distributional benefits because the residents are disproportionately low-income households.

Table 4.1 Summary of framework for overall SCBA

Costs	How valued	Comments
AHP 2021-2026 grant	Actual expenditure, inflated to year of evaluation	
Administrative costs For DLUHC For GLA FOR HE	Actual expenditure, inflated to year of evaluation	
Change in HB (increase = positive cost; decrease = negative cost)	Using values estimated in I13	
Benefits	**How valued**	**Comments**
Flow of housing services to beneficiary households	LVU, possibly supplemented by annual flow of market rents and market values of grant-funded homes. LVU to be valued using secondary data at local-authority level from VOA. IMS has information on market value of new build SO units; for rental homes estimated using market data on new rental listings (asking rents) in close proximity to previously inhabited location and a forecast on rental growth using historical data.	Captures private benefits to tenants/SO users
Flow of work to construction sector	GVA from construction activity	
Improved health and wellbeing	Application of standard metrics e.g., the Social Value Bank (HACT and Simetrica undated) or *The cost of poor housing in England* (Garrett et al., 2021., 2016), adjusted per findings from impact evaluation.	Generally seen as externality. Assessed as part of Impact

Costs	How valued	Comments
Distributional benefits	Per Green Book. Using information on household incomes of beneficiaries, and rental data from property listing websites for counterfactual.	Benefits to low-income households receive higher weighting
Neighbourhood effects (mixed communities, mixed tenures, effects on crime, education, child poverty)	Using standard social valuation metrics as above, adjusted per findings from impact evaluation and qualitative elements of VFM research.	Externality

Notes: To be produced for the AHP 2021-2026 overall and for London/outside London. All figures 30-year present value (PV), 2020/21 price and discounting base.

Counterfactual and methods. For the VFM CBAs, the counterfactual is that the AHP 2021-2026, which will part-fund up to 162,000 affordable units, does not exist. As discussed in Chapter 3, it is simplistic to assume that under the counterfactual 162,000 fewer affordable units would be produced: if the programme did not exist, there would nonetheless still be a high requirement for affordable housing and thus greater use of other mechanisms such as S106 and development on local-authority land. One important element of the evaluation is therefore to estimate the magnitude of this substitution effect; this is addressed in impact question I1 (together with displacement, deadweight and leakage), and the counterfactuals calculated there should be used in the SCBA. The additionality estimates produced in I1 will feed into the SCBA, as most of the costs and benefits of the programme will be calculated with reference only to the **additional** housing generated—although distributional benefits will apply regardless of whether or not the housing is additional.

The SCBA, like the additionality estimates, will be disaggregated by region and tenure. Each of these SCBAs can be compared to the initial appraisal and to each other. The SCBA will be complemented by qualitative evaluation to understand what factors contributed to higher/lower VFM, and what trade-offs providers and funders made between different programme goals to meet the programme's cost constraints. Flows of costs and benefits will be calculated annually over a 30-year period, discounted using Green Book techniques. This can be done in phase 3.

DLUHC have requested that the VFM analysis be scoped in line with the Green Book and the DLUHC Appraisal Guide, both of which recommend using LVU to capture the private benefits of additional housing. The evaluators should calculate LVU using secondary data, as was done in the business case, as it will not be possible to collect actual before-and-after land values for individual sites with AHP-funded homes. LVU should be estimated at local-authority level.

There are strong theoretical reasons for preferring LVU as a measure of private benefits of new housing, and it ensures continuity of approach with the business case and other DLUHC analyses. It has limitations in practice, including the need to rely on secondary data and the difficulty of distinguishing the impact of residential land use from that of constraints more generally. The evaluators should consider supplementing LVU with another measure of private benefit, based on market rents and prices at unit level. Grant-funded homes will provide a flow of housing services to tenants over the lifetimes of the funded homes (possibly 50-60 years), which can be valued at the total house price (for SO homes) or, for rental housing, the rent. Evaluators can use market rents/prices for equivalent units in the same areas to capture private economic benefits. Rents capture the

quality and characteristics of the dwellings in a way that land value does not. In addition, it is almost impossible to obtain dwelling-level land values, but imputed rents and prices can be estimated using using commercially available unit-level data.

Externalities and distributional impacts. The case for AHP 2021-2026 investment in affordable housing also relies on the expectation that grant-funded homes will bring non-housing benefits to residents, and will contribute to surrounding communities (i.e., will have positive externalities). The main externalities identified in the business case and the ToC are improved health and wellbeing for residents, contribution to mixed communities and mixed tenures, and effects on crime, education, and child poverty (outcomes S6, P6, S4 and S7). The impact evaluation may identify other externalities (positive or negative) of the programme, beyond those named in the business case, if so, these will be added to the SCBA.

There are two possible ways to assess externalities associated with programme requirements including the social values of good design, stimulating greater use of MMC, and involving small contractors and small HAs address this. The first is to describe and quantify, where possible, the effects of each requirement beyond the dwellings and residents themselves. Regarding the use of design guides, for example, the findings about benefits from sub-question I5 of the impact evaluation would be set against cost information from providers to ask, '*Were the benefits worth the additional costs?*'. The second option would go further and monetise the externalities of the various programme requirements in order to produce a conventional SCBA for each of them. This would be a major exercise and in our view the effort required would be disproportionate, given that the requirements are not the principal intended outcomes of the AHP 2021-2026. Some of the externalities (e.g. health benefits) can be monetised using standard social valuation metrics, adjusted if necessary to reflect qualitative findings from VFM and impact evaluations (e.g., if case studies show particularly strong or weak neighbourhood effects).

Key data: Costs will be calculated using VOA land values and management information from HE and the GLA; changes in HB will come from the impact evaluation (sub-question I13). The value of new SO homes provided will be taken from GLAOPS/IMS and CORE Sales; market rents can be based on data from web portals relating to units that are similar in size, age, location, and dwelling type; expected and actual grant broken down by tenure and location (from IMS and GLAOPS); demographics and income of tenant households (CORE Sales, CORE Lettings, EHS, Census).

4.3 How did criteria for grant-funded schemes affect VFM?

The AHP rules incentivised providers to fulfil strategic priorities, outlined in Chapter 1, in undertaking grant-funded development.[25] Some strategic priorities in principle apply to *all* new housing and are merely restated for emphasis in the AHP requirements for grant funding while others apply only to grant-funded affordable housing. These strategic priorities affect both the nature of the homes provided and the initial cost of provision and are thus considered in the VFM evaluation.[26] In all sub-questions discussed below the

[25] The business case makes clear that 'Delivering the total number of homes is dependent on providers agreeing to align their development plans to these additional criteria.'
[26] Requirements that impose higher costs can reduce VFM, if these are not accompanied by commensurately higher benefits. Alternatively, they can *improve* VFM if the benefits exceed the costs imposed. The assessment of costs and benefits may depend on the timescale: immediate higher costs may produce benefits only after some time.

counterfactual is an AHP without the strategic priority in question. We recommend that evaluators establish this predominantly through a programme of what-if **interviews of programme participants (IFG1)** (SME contractors, small housing associations, MMC providers), complemented by **regression models** using dummy variables for each strategic priority. The **provider surveys (SUR2)** will also collect information about the effects of programme requirements on the various categories of participant.

Sub-question V2: ***Was AHP-funded rural housing a good use of resources?***
Rural housing may have higher unit costs than urban housing as schemes are smaller and dispersed, and may not achieve economies of scale; on the other hand the land can often be greenfield and therefore cheaper, and land value capture higher. Conversely, residential values themselves are much lower in rural areas beyond the Home Counties than urban residential land values, especially in London. On the benefit side, provision of rural homes enables local lower-income households to remain in their communities and supports rural economies. Qualitative information about the benefits of rural homes to local communities and economies will be set against additional grant involved. The latter will be estimated by **regression analysis** with a dummy variable for rural/nonrural. Evaluators should determine whether to categorise areas using the 2016 rural-urban classification of the Department for Environment, Food and Rural Affairs[27] or the ONS rural-urban classification.[28] For the regression modelling, grant rate per rural home by tenure and size should be compared to that for urban homes (from IMS) within each region. The demographic profile of new entrants into affordable housing located in rural areas can be collected from CORE Sales/Lettings based on a check-up of which addresses fall within a rural area. Cross-calibration of demographic profiles can be done also using the latest Census for focussing on rural areas. In addition, **case studies of LA areas (CS1)** will include two rural areas to capture local views of the wider value of AHP-funded homes. To be done in phase 3.

Sub-question V3: ***How did the requirement for a realistic balance of development on brownfield/remediation sites affect VFM?***
Brownfield sites are those that have previously had development of any kind, including residential. The opportunity cost of using brownfield land varies and can be quite high for sites with an existing use (as opposed to those that are vacant or unavailable for non-residential use). Remediation sites are the subset that require decontamination. The cost of this depends on the nature and extent of pollution; some former industrial sites require expensive excavation, soil removal, treatment of waterways etc. The requirement for a 'realistic balance' of provision on such sites is in line with the government's goal of addressing the need for land remediation, especially in the context of levelling up. AHP 2021-2026 provision on remediation sites will cost more than similar provision on other brownfield sites or on greenfield. Requiring grant recipients to build on brownfield land or engage in remediation protects greenfield land and improves the environment for neighbouring communities (captured in outcome S7). Qualitative information about the benefits of brownfield/remediation to local communities and economies can be collected from **case studies of LA areas (CS1)** where AHP-funded schemes have involved extensive remediation (including some where the remediation was funded through S106 developer contributions). This is to be set against additional grant involved. Latter to be estimated by compiling **descriptive statistics** for cost of remediation across the programme by type of site (greenfield/brownfield/remediation). Site type can be identified

[27] See the Rural classification.
[28] See the census introduction.

from IMS/GLAOPS; costs from IMS or **provider surveys (SUR2)**. This can be compared to the grant rate per home from IMS/GLAOPS.

Sub-question V4: ***How did the use of SME contractors affect VFM?***
Although a trend since the 1980s, the fall in the number of small and medium-sized developers and construction companies in the UK has been particularly marked since the global financial crisis. The requirement to involve local and SME contractors in AHP-funded construction is one of several policies intended to stimulate the sector. In terms of cost there is no *a priori* reason to assume that small or local contractors will necessarily charge more per unit than large firms, although they typically specialise in different types of construction (such as upmarket homes or small schemes). Provider costs might be affected if they had to manage many small firms instead of a few large ones. The evaluation will test whether the requirement to work with such firms mainly benefits the remaining businesses in this sector and/or whether it helps new firms to form. Qualitative information about the benefits of involvement of SME contractors will be set against additional grant involved. The relationship can be assessed through a **regression analysis** where the dependent variable is grant rate per scheme and the explanatory variable is the proportion of construction spend going to SME contractors. Information by scheme for grant rate per home and for the proportion of construction expenditure going to SME contractors should be available in IMS/GLAOPS. Information about the value of supporting SME contractors to local economies should be sourced from **case studies of LA areas (CS1)**. Evaluators should conduct **surveys of SME contractors (SUR4)** about the effects on their businesses of participating in AHP-funded schemes, looking to isolate the effects of this policy from those of the other policy mechanisms in place to support them. Evaluators should take into account other schemes taking place in the same time and work out an identification strategy to isolate confounding effects.

Sub-question V5: ***How did working with smaller HAs affect VFM*****?**
This criterion is meant to ensure that smaller HAs can build units in partnership with the large providers or buy completed stock. The benefits of the AHP 2021-2026 requirement to work with smaller HAs will accrue mainly to those associations and may enable them to remain independent, which might foster competition and support more diversity in the HA sector. Other benefits might exist and can be unpacked trough part of the interviews with small providers (SUR2). The benefits of involving small HAs will be set against additional grant involved. This can be done using a multivariate **regression analysis** with a dummy variable for involvement of smaller HAs. Information by scheme for grant rate per home and for whether small HAs are involved can be deduced from IMS/GLAOPS in conjunction with RSH provider data. More detailed understanding of the benefits of joint ventures between providers, and of the specific contributions of smaller HAs to local areas, are to be unpacked in **case studies of LA areas (CS1)**. Specific questions for small housing associations will be included in the **provider surveys (SUR2).**

Sub-question V6: ***How did the requirement to use at least 25% MMC affect VFM?***
This sub-question overlaps with sub-question I5, which will establish the degree to which MMC was used. MMC relates to VFM in two ways: it may affect costs for providers, and the requirement to use may have wider benefits for the UK construction industry and the quality and energy-efficiency of the housing stock. Evaluators should determine how much experience AHP providers and construction firms have with MMC and whether the strategic priority to use at least 25% MMC reduces or increases current costs compared to conventional building methods, and/or improves physical standards, reducing future costs.

Projects that use 25% MMC will be compared to those using more. The type of MMC matters: there are at least seven techniques that could be used, individually or in combination. Evaluators can perform a multivariate **regression analysis** [dependent variable: ex-post grant rates; explanatory variables: different MMC categories or/and MMC shares per project]. The quantitative analysis should be complemented by **case studies of schemes (CS1)** using MMC and **surveys of MMC firms (SUR4)** and of **surveys of providers (SUR2)** using both MMC and conventional construction techniques, to explore cost differences and the reasons behind them and identify benefits to the MMC industry and providers themselves of the AHP's focus on MMC. The key data from IMS/GLAOPS is information on providers receiving additional grant to cover the costs of MMC, MMC share and MMC types.

Sub-question V7: ***How did funding supported housing through the AHP 2021-2026 affect VFM?***
Supported housing is accommodation provided together with supervision or care to help residents with particular needs including older people, those with a disability, formerly homeless people or recovering addicts. Some housing providers specialise in supported housing, but most do not operate in this part of the sector. Supported housing is more costly to providers than general-needs housing because of the additional facilities and specialist spaces involved. Moving to supported housing can enable older or disabled people to live independently for longer and may contribute to better mental and physical health, indirectly reducing demand on social services and the NHS. Health benefits should also accrue to formerly homeless people or recovering addicts; for some, a stay in supported housing can lead eventually to a move to mainstream housing. The values of some of these benefits can be estimated with existing metrics such as the HACT Social Value bank. These value estimates, and qualitative information about the benefits of supported housing to residents and local communities, will be set against additional grant involved; a more in-depth analysis can follow using **case studies of LA areas (CS1)** about the local view of the value of AHP-funded supported homes and the allocation rules at local level. In addition, **descriptive statistics** can be performed that correlate grant rate per home by tenure, size, and supported/general needs (from IMS/GLAOPS) with the demographic profile of residents of supported homes from CORE Lettings (data to be matched by address), including previous residential address and ties to local area.

Sub-question V8: ***How did the use of design guides/guidance affect VFM?***
This question overlaps with sub-question I5, which will establish the degree to which design guides were used and the effects they had. The costs and benefits should be identified through qualitative evaluation including through the **case studies of LA areas (CS1),** which should include interviews with planners; **interviews with providers (IFG1), case studies of schemes (CS2)** (see sub-question I5)**,** and **resident surveys (SUR1).**

Chapter 5 Data and data collection methods

The scoping report identifies the use of primary and secondary data. Below we discuss the approach to data and the methods associated with each type of data collection. This chapter also includes indications on the timing and costs of data collection. Appendix 0 has a more extensive discussion of relevant academic literature and selected methods.

5.1 Secondary data requirements

The key administrative databases are IMS, GLAOPS, CORE Lettings, CORE Sales and the EHS. Table 5.1 explains what information each collects, the granularity of the data, the most essential variables (available and desired), other important variables which can be used as control variables in the regression analyses, and some examples of how evaluators can create their own aggregates of the data for descriptive analyses. Data from IMS, GLAOPS and the RSH are further analysed in Appendix C. Other databases and datasets required for the AHP 2021-2026 evaluation are presented in Table 5.2 Other secondary data required for the AHP 2021-2026 evaluation. In addition, we recommend that DLUHC secure access to transaction-level data on prices and rents in England from market sources [used to answer questions I1, I3, I12, V1]. This can be purchased or scraped from listing websites. DLUHC should secure access to all the data set out above as soon as possible, ideally before phase 1 begins. For the regression analyses, data are needed at the most granular level. Some analyses however can proceed with one-level-up aggregated data, i.e., the tenure within individual development projects, provider data over time, LA data over time.

As Table 5.1 shows, much of the data will be cross-sectional (snapshot), often recorded at the beginning of the programme or at the point of transaction. CORE records data when a resident buys or rents an affordable housing unit for the first time, so it may be difficult to track households or properties longitudinally. This is more problematic when the unit of analysis is the household and less so when the unit of analysis is the property/unit. For the process evaluation it should be possible to collect longitudinal data on projects. IMS and GLAOPS are live databases: the data are refreshed when there is a change and the old data are not stored in an easily accessible format, i.e. Excel files. We recommend that data owners take quarterly snapshots of the databases so evaluators can track modifications in grant rates, locations of projects, tenure mix, etc. Collecting frequent snapshots is challenging and it can be difficult to match properties over time. This task requires a dedicated person with strong quantitative skills.

The major regression modelling techniques needed for the evaluation are explained in more detail in Appendix 0. The address or UPRN can be used to match observations across databases (as described in Appendix C), permitting access to many more control variables that can be used in regression models and other empirical methods for causal inference, e.g. PSM, DID, and regression discontinuity design (RDD) models. We understand that UPRN is reported with a large amount of missing observations and exact address is not currently available. To facilitate modelling, **exact addresses should be** added to all databases in Table 5.1 for all homes funded by the AHP 2021-2026. In case the exact address will not be provided and the data needs to be matched to other data, the evaluators should deploy fuzzy matching using the full postcode and other proxies (price,

rent, size of unit, etc.). Another option is to include in CORE Sales and CORE Lettings a question, which asks whether the property has been funded by AHP, which however might be not easily accessible information at the point of entry into the system. Analysis of the programme's effects on home ownership depends on understanding staircasing behaviour, but information on staircasing has historically not been centrally collected. DLUHC should ask GLA and HE to request from selected registered providers with large SO programmes to provide their staircasing transaction data to independent academics providing suitable identifiers on a template prepared by the academics. Further access to data on SO (prices and shares) should be established with the Land Registry.

Table 5.1 Key variables and data granularity for main official databases

Database	Granularity	Most essential variables	Other important variables	Aggregating data by evaluators
GLAOPS & IMS Information provided by providers on bids and their progress.	Scheme/unit level. As this is live data, snapshots across the variables that evaluators identify should be produced in quarterly intervals.	*Collect exact property address in addition to postcode.* X-Y coordinates; grant rates by (i) scheme/tenure, (ii) region/tenure/provider over time	Funding sources: price paid for the land and estimated land value; development cost; characteristics of homes relating to strategic priorities; total number of units per scheme, number of affordable housing units which are delivered outside AHP 2021-2026.	At provider or LA level. The data can also be broken down between general needs and supported housing, rural vs non rural, MMC ranking, etc.
CORE Lettings Records information from PRPs and LAs on new social and affordable rented tenancies.	Property/unit level. The data are provided only once, at the start of a new tenancy.	*Collect exact property address in addition to postcode.* Tenant ID and property ID are the key identifiers. Previous housing situation, postcode of previous accommodation, total charges, income.	Demographics: reason left last settled home; previous living situation, rent, other costs, economic status, including income.	Aggregated by LA. The evaluation can also draw mobility maps of households. The data can be aggregated to produce highly localised rental indices and affordability indices used in regression models.
CORE Sales Records information by private registered providers on new SO homes and staircasing. Does not contain all SO transactions.	At property/unit level. The data are provided at the first entry of a new homeowner. From 2021-22, data on staircasing should also be available.	*Collect exact property address in addition to postcode.* Purchaser ID and property ID can be used as identifiers to link up data, i.e. staircasing, management data, within the same provider. Previous tenure of buyer, previous location. Key information is the SO sales price and share as well as date of sale.	Buyer's income, total savings, economic status, previous tenure and address; initial equity stake, amount and length of mortgage, name of lender, cash deposit; basic monthly rent, monthly charges, full purchase price; demographics.	Can be linked to IMS/GLAOPS data using fuzzy matching of address. This will enable the identification of whether the unit is funded via AHP 2021-2026 or not. The data can be aggregated by LA. The evaluation can use the data to create mobility maps of households.
EHS A national sample survey on people's housing circumstances conducted on an annual basis in England.	An individual and their location. EHS is cross-sectional, and it is not possible to track individual respondents over time.	Household reference person/household, address.	Demographics, type of accommodation, tenure, wellbeing, working status, economic status, buying aspirations, income, savings, mortgage contracts and payments, energy efficiency of unit.	The data is best used at the regional level to assess differences over time.

Table 5.2 Other secondary data required for the AHP 2021-2026 evaluation

Source	Definition and data needs
ASHE	Contains estimates of earnings for employees of full-time or part-time status and their demographics.
Census data 2021	Location of the dwelling as well as detailed information regarding the type of tenure, number of bedrooms, condition, etc. No income data, but the census asks for occupation, industry and economic activity, which relate to the socioeconomic status of the household.
Census Small Area Population Statistics	Records a wide range of demographic information as well as household and community information.
DLUHC	LA-level data including Dwelling stock by tenure (social rent, affordable rent, shared ownership) from 2015-2016 to 2020-2021; Housing supply net additional dwellings by tenure from 2009-2010 to 2020-2021; Additional affordable housing by tenure from 2015-2016 to 202020-21; Number of staircasing transactions related to SO.
EPC	Energy-related information about individual properties, and total floor areas. DLUHC are the data owner.
Family Resources Survey	A continuous household survey that collects information on income from all sources, housing tenure, caring needs and responsibilities, disability, pension participation, savings and investment, and self-employment for a representative sample of private households in the UK.
H-CLIC	Data collected by English LAs about homeless households including reasons for homelessness, housing history, support needs and links with other public services and benefits system.
HM Land Registry	Main source for data on (1) SO transaction prices and (2) residential property sales in England and Wales since 1995. (2) is a publicly available dataset called Price Paid Data.
LAHS	Provides information on a range of local-authority housing topics including LA owned stock and changes to it through the year, lettings, waiting lists, vacant properties, condition, expenditure, and new supply.
NHBC	Data on new build includes type of dwelling, bedroom numbers.
NOMIS	Source of official labour market statistics including the Annual Population Survey and the Labour Force Survey. Data are available at the LA level.
ONS ASHE	Contains estimates of earnings for employees of full-time or part-time status and their demographics.
ONS Census data 2021	Location of the dwelling as well as detailed information regarding the type of tenure, number of bedrooms, condition, etc. No income data, but the census asks for occupation, industry and economic activity, which relate to the socioeconomic status of the household.
ONS: Census Small Area Population Statistics[29]	Records a wide range of demographic information as well as household and community information. Most recently published October 2018 for period 2012-2016; revised estimates to be published when 2021 Census available
ONS: Family Resources Survey	A continuous household survey that collects information on income from all sources, housing tenure, caring needs and responsibilities, disability, pension participation, savings and investment, and self-employment for a representative sample of private households in the UK.
ONS: NOMIS	Source of official labour market statistics including the Annual Population Survey and the Labour Force Survey. Data are available at the LA level.

[29] See Small area population estimates in England and Wales.

Source	Definition and data needs
RSH	LA data return (LADR) and statistical data return (SDR) include information on affordable housing stock and rents at provider level. Its Financial Forecast Return (FFR) and Electronic Annual Accounts (EEA) collect financial information and forecasts by large providers. Quarterly Survey of Providers since 2013 focuses on providers' financial health.
UK Finance	Association of financial institutions including mortgage lenders. Provides data on mortgage lending in UK postcodes and quarterly trends in arrears and possessions linked to first-charge mortgages provided by members.
Understanding Society	Also known as the UK Household Longitudinal Study (British Household Panel Survey). An unbalanced panel of UK individuals containing information on income, education, age, sex, marital status, and other variables.
VOA	Local Authority Land Values and Private rental market statistics.
Zoopla/ Rightmove	Private providers of information on market rents and prices (asking) for existing and new dwellings across the UK.

5.2 Primary data collection

We suggest three main modes of primary data collection: **surveys,** including of residents, programme participants, mortgage lenders and developers among others; **interviews and focus groups** with programme participants including mortgage lenders and programme funders, as well as with wider stakeholders; and **mixed-method case studies** of LAs where schemes are located, of individual schemes, and of AHP-funded providers. These are described below setting out the information to be collected, techniques, number of respondents or cases, and the phases in which they are to be conducted. Each data collection method is coded for reference. Indicative costs for each data-collection method appear in **Error! Reference source not found.**.

Surveys

Method SUR1: *Resident survey: online, telephone or face-to-face*

Sample survey of resident households on moving into their AHP-funded properties. Follow up surveys of smaller panel (10% of initial survey cohort) to track impact and VFM over time. Basic surveys to be conducted online using Citizen's Space/Delta or similar (other techniques to be employed for harder-to-reach households—see below). Requires email addresses of resident households to facilitate survey distribution, and GDPR-compliant system for sharing those with evaluation team. Survey invitations by email to households for whom email addresses are available; otherwise, postal invitations with link to online survey and option to request survey in paper form. Unique survey link for each household will allow analysis of response rates by area. The survey questions should cover

- demographic information (age, gender, household type, household size, number, and age of children).
- employment information (current employment and income for all adults in the household; address of employer(s)).
- universal credit including HB.
- previous housing situation (tenure, location, cost, size**)**.

For benchmarking purposes, the questions should be consistent, where possible, with large-scale official surveys that cover attitudes, wellbeing, and housing satisfaction. To be carried out in phases 1, 2 and 3: Initial survey to be distributed at least 3 months after schemes are fully occupied, then distributed on a rolling quarterly basis to random 10% sample of residents of schemes occupied during preceding quarter.

In areas with very low response rates to online survey, or where demographic patterns indicate high proportions of households are likely to lack internet access or English-language skills, the survey should be administered by telephone. Requires telephone numbers for resident households. To be conducted two months after quarterly online surveys, so spatial analysis can identify areas with low response rates. Face-to-face surveys to be conducted at selected case-study schemes only, if necessary, by survey teams with appropriate language skills. Timing as above. Introductory letter to be sent to households before telephone or in-person approach.

Coverage: 10% of resident households for initial online survey; follow-up surveys of panel comprising 10% of initial cohort. Sample to be random rather than purposive as the schemes will be occupied at different times. 100% of beneficiary households in case-study LAs. For telephone survey, coverage will depend on analysis of initial response rate:

estimate 10% of overall survey cohort (=1% of beneficiary households in first round, then .1% in subsequent rounds). Timing as for the online survey, with a 2-month delay to allow for identification of areas/household types with low response rates.
Questions addressed: I1, I4, I5, I7, I8, I9, I12, I21, I22, I23, V8

SUR2: ***Surveys of providers with AHP 2021-2026 funding***
Online survey as SUR1; all providers to be surveyed on confirmation of grant allocation and after completion of a proportion of grant-funded homes (evaluators to determine appropriate proportion). The GLA and HE should issue guidance recommending that providers respond to the evaluators' survey. Information from the providers' survey will feed into all three evaluations. Survey questions to cover

- providers' changing assessment of relative risks (both macro and project-specific) and how those feed into any major modifications of grant-funded schemes.
- any major changes to the projects (process evaluation).
- expected and actual costs per unit for grant-funded schemes.
- whether expenditure differed from projections and why.
- what events or changes in external conditions affected expenditure?
- how grant rates for the new model of SO compared to rates in the preceding programme
- how AHP -funded provision compared with the cost of provision of similar housing through S106 developer contributions.
- how providers determined the mix of social and affordable tenures within each scheme.
- what other sources of funding were used for AHP 2021-2026 schemes.
- how much was spent on land acquisition per unit.
- Whether they are developing themselves or partnering with developers (if so which).
- what accounts for any differences in cost per unit?
    - of specialist and supported housing vs general needs.
    - of rural homes vs urban/town homes.
    - of homes built with MMC vs those built with conventional techniques.
    - of those built with/by SME contractors vs those built by large contractors
    - of those built in collaboration with small HAs vs those built by large HAs
- whether any cross subsidy was involved in meeting programme requirements.

Small HAs will be distinguished, and separate questions asked of them to determine how AHP 2021-2026 requirement for working with small HAs affected their organisations.

Coverage: As of May 2022, 87 organisations had been allocated grant (GLA to 33 LAs and 27 HAs; Homes England to 31 strategic partners of which 4 overlap with GLA). There will be CME on top so possibly 160 in all. Surveys to be conducted in phases 1, 2 and 3.
Questions addressed: P8, I1, I2, I4, I7, I9, I19, V1, V3, V5, V6

SUR3: ***Survey of developers***
Online as SUR1. To ask about additionality and substitution in the market; details of land acquisition including timing and cost. Drawing on approach followed in recent Help to Buy evaluations, which collected much information from developers.

Coverage: All developer partners identified in provider survey; surveys in phases 1 and 3.
Questions addressed: I1, I2.

SUR4: *Surveys of SME contractors and MMC suppliers*
Online as SUR1. To determine how AHP 2021-2026 requirement favouring use of small contractors/MMC, along with other policies benefitting the sectors, have affected their businesses. Questions to include

- the number of schemes funded by AHP 2021-2026 they worked on.
- what type(s) of work they did on each scheme.
- total income to their business from each scheme; proportion of turnover this accounted for.
- any previous experience working on AHP schemes.
- how the firm benefitted from this work apart from income (e.g., gained experience in new sector, exposure to new markets, was able to take on more staff, reduced risk enabled borrowing, etc).

Rolling survey programme with questionnaires distributed in the quarter after the scheme(s) they worked on were completed, in phases 1, 2 and 3.

Coverage: 10% sample of SME contractors / MMC suppliers identified in provider survey.
Questions addressed: V4, V6.

SUR5: *Survey of mortgage lenders*
Online as SUR1. To ask about

- their lending policies for SO homes provided under current and preceding AHP SO homes.
- perceived risks of current scheme
- financing arrangements for staircasing
- expectations based on previous scheme(s) of numbers likely to staircase to full ownership

Coverage: Top 20 SO lenders at the start of the programme, to be carried out in phases 1 and 2.
Questions addressed: I15, I16, I17, I18.

Note: Other surveys, not described in this section, will also be conducted as elements of the mixed-methods case studies, covered below.

Interviews and focus groups

IFG1*: Interviews with programme participants*
Semi-structured interviews, by telephone/Zoom or face-to-face, should be conducted with

- Large regional/national HAs who will provide information across the country e.g., Clarion;
- Providers who receive funding from both GLA and HE in the current programme (Group 1) to ask development directors questions related to land acquisition, and to explore how the features of the new model of SO affect grant rates and whether the model reduces provider appetite for funding (process evaluation).
- Providers who were not SPs in AHP 2016-2023 but are SPs now, to ask whether the earlier receipt of funding in the current AHP 2021-2026 enabled cheaper/earlier purchase of land. This can be done in phase 1.

- Developers working across the country to focus on additionality and land purchase, how they operate including financing, risk, and additionality.
- Mortgage lenders (Nationwide + others who specialise in SO) about comparison between old and new schemes and relative risks, and reasons for exiting this part of the market if applicable.
- Funders (GLA and HE) about how strategic priorities, in particular design, are reflected in their funding decisions and ongoing monitoring.

Coverage: Approximately 15 each for developers, HAs and lenders, plus any lenders who stop offering SO mortgages during the course of the programme. 4-6 interviews with funding bodies. All phases: first round of interviews at the beginning of the evaluation to capture immediate views on process; again six months after the initial wave of surveys (giving time for survey analysis); again in phase 2 and then at the end of the programme to capture final learnings.
Questions addressed: P1, P2, P3, P4, P5, P7, I5, I17, V1, V8

IFG2*: Interviews with wider stakeholders*
Semi-structured interviews, by telephone/Zoom or face-to-face, should be conducted with government departments, Local Government Association, National Housing Federation, Housebuilders Federation etc. Topics to include sense-check of ToC, expected impacts and VFM; respondent views of the programme and its activities, outputs, and priorities, and whether they have observed any unforeseen challenges.

Coverage: Approximately 20, in phases 1 and 2.
Questions addressed: P3.

IFG3: *Focus groups with tenants who have RTSO*
One focus group in each region to be held in person (preferable) or online 6 months after tenants move in; participants to be compensated. Aim is to explore tenants' appetite for and understanding of RTSO and the factors that will determine uptake. The early sessions will help predict RTSO uptake in the absence of any data on it yet. Focus group participants will then be invited to complete an annual survey to capture staircasing behaviour and attitudes to RTSO; compensation offered. The longitudinal surveys will allow evaluators to track changes in sentiment.

Coverage: 1 group per geographical region, with 10-12 participants each, when numbers of completions permit (ideally late in phase 1); thereafter annual surveys.
Questions addressed: I20.

Note: Interviews will also be conducted as elements of the mixed-methods case studies, covered below.

Mixed-methods case studies

CS1: *Case studies of LA areas*
Goal is to understand how the programme worked compared to their expectations and how the new homes affect local communities and housing markets. Case studies to be longitudinal, with data collection at intervals across all three phases. Methods to include

- Analysis of land and construction market in each area using secondary data
- Interviews with
  - LA officers including planners and elected members about allocation processes including choice-based lettings; planning and affordable housing; wider benefits of strategic priorities and new schemes generally; how the LA operates and what pressures they face
  - HAs working in the area about how they operate, which households get allocated (are they allocating to overcrowding or the possibility of additional children arriving?).
  - Police officers about crime patterns in neighbourhoods with AHP-funded homes
  - Developers working in the area about additionality, land acquisition etc for this specific area.

Coverage: Approximately 12, representing different levels of need and market pressure. Areas to be chosen after analysis of relevant statistics—illustrative distribution 2 in London (inner/outer), 3 in SE (suburban/urban/rural), 3 in Midlands and 3 in North (conurbation/town/rural), one additional. To include at least 5 LAs where AHP-funded schemes have involved extensive remediation, including at least 3 where the remediation was part-funded through S106 developer contributions (see Table 5.3).
Questions addressed: I1, I8, I9, I12, I21, I23, V2, V3, V4, V5, V7, V8.

CS2: ***Case studies of individual residential schemes containing grant-funded affordable housing***
Goal is to capture contributions to wider community and neighbourhood and overall quality of provision. Each case study to include

- approximately ten **interviews** with providers, SME and/or MMC contractors (if applicable), smaller HAs involved (if applicable) and neighbourhood stakeholders.
- **Resident surveys**: invitations to online surveys distributed door to door and follow-up door knocking for non-responders.
- **Building for Healthy Life assessment**, a formal post-occupancy evaluation technique to evaluate physical and design characteristics of the built form. This method will require specialist assessors.

Coverage Schemes to be chosen from those in case-study LA areas, of which there will be approximately 12. Maximum 2 scheme case studies/area = 24 total, after schemes have been occupied for some time to facilitate selection, so late in phase 3. See Table 5.3 for criteria.
Questions addressed: I5, I9, I21, V6, V8.

Table 5.3 Requirements for selecting case study authorities and schemes

Case studies of local authorities (total 12)	**Case studies of schemes** (total 24)
Regional spread of areas representing different levels of need and market pressure, and regional distribution. To be chosen after analysis of relevant statistics—illustrative distribution 2 in London (inner/outer), 3 in SE (suburban/urban/rural), 3 in Midlands and 3 in North (conurbation/town/rural), one additional Of the 12 authorities • Two in rural areas (V2) • A spread covering the expected range of additionality (I1) • Include some where there are schemes with supported housing (I9) – number not specified • Include at least 5 where AHP-funded schemes have involved extensive remediation (V3), including at least 3 where these were (part) funded through S106	All located in case study local authorities (up to two schemes in each) Of the 24 schemes • 6 that used MMC (I5, V6) • 6 to include assessment of design (I5) including Building for Healthy Life o 3 in London (one high design quality, one average, one low) o 3 outside London (one high design quality, one average, one low) • Some case studies to include supported housing (I9)—number not specified

CS3: ***Case studies of AHP-funded providers***
to determine whether the funding channel affects grant rates (process evaluation). Case studies to focus on providers

- that are SPs for AHP 2016-2023 but are CME partners in the latest AHP
- of HAs that are delivering simultaneously for HE and GLA

The two-year overlap between the two programmes will ensure that market conditions under old and new programmes are identical for properties delivered between 2021-23. Case studies will include interviews with relevant providers to inform analysis of data from IMS and GLAOPS.

Coverage: Numbers will depend on how many meet these criteria—the goal is approximately 10 of each.
Questions addressed: P1.

5.3 Timing

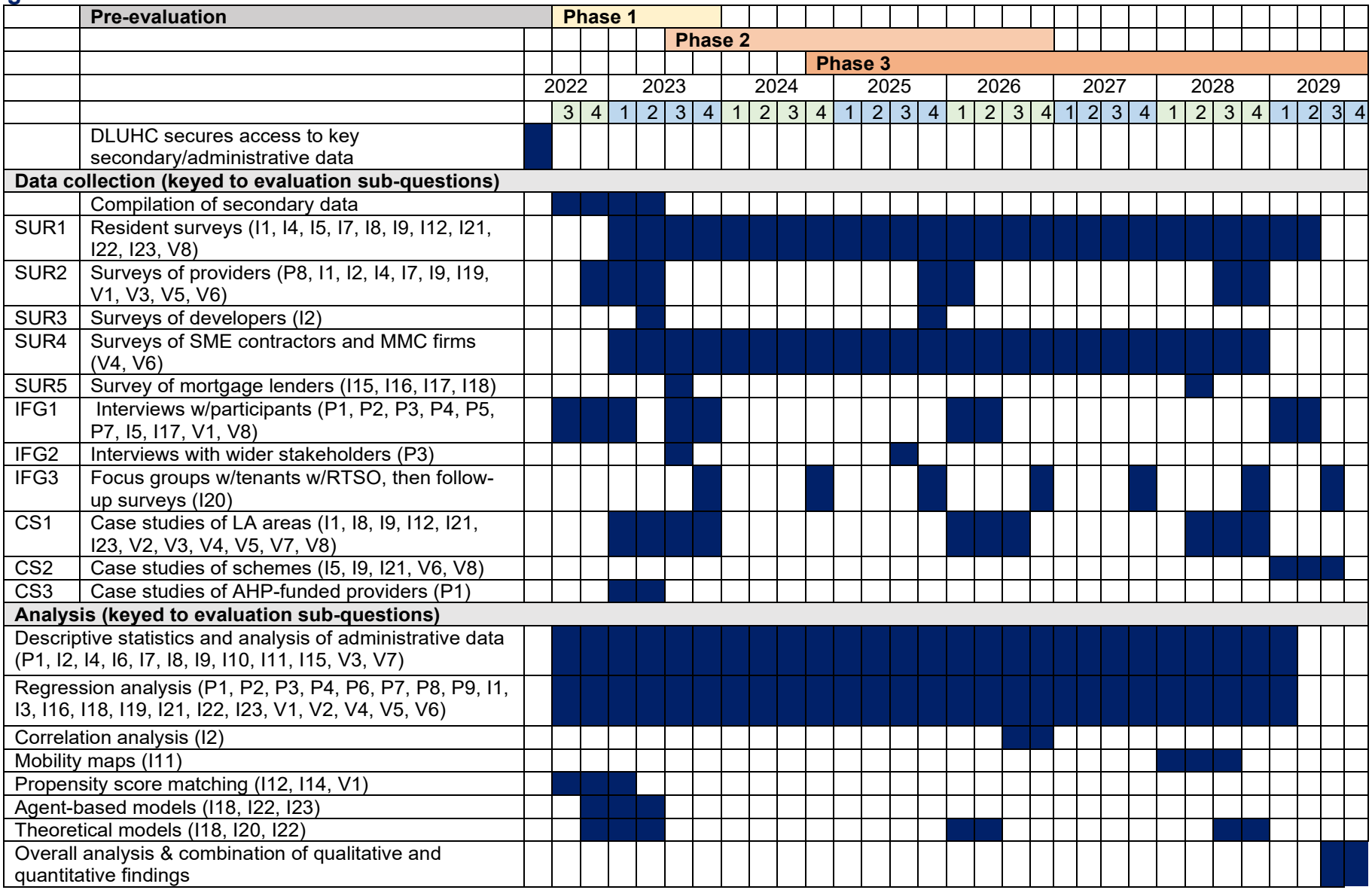
The scoping report proposes three phases for the entire evaluation, as discussed in Chapter 1. The Gantt chart in Figure 5.1 sets out the different methodological stages of the evaluation by type and phase. The timings are ***indicative only.*** Actual timings may vary (possibly significantly) depending on the speed of delivery of homes funded by the AHP 2021-2026, the availability of secondary data, and the staffing patterns and working practices of the organisation(s) that carry out the evaluation.

The surveys of beneficiary households will be conducted on a rolling basis, starting about six months after the first homes are delivered and continuing until all homes or completed (or the evaluation finishes). Similarly, surveys of SMEs and MMC firms will be issued on a rolling basis. Providers will be surveyed once per phase.

Interviews with participants will take place in four tranches: once at the beginning of the evaluation to capture findings about the bidding process, then once at the end of each phase. Case studies of local-authority areas will have a longitudinal structure, with each LA visited in each phase. Full assessments cannot be done until the end of the programme for projects delivered through the strategic partnership route. Case studies of schemes and providers will be conducted near the end of phase 3 after developments are complete.

Empirical analyses using secondary data will occur throughout all three stages and will depend on data arriving from starts on site and sale or rent. Theoretical models can be conducted earlier in the evaluation as they would not rely on granular data. Some analyses involving the new beneficiary households will take place towards the end of phase 3.

Figure 5.1 Indicative Gantt for evaluation of AHP 2021-2026



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Appendices

Appendix A The funding allocation process

The flow chart in Figure A.1 maps the process of allocating the AHP funds across providers and the final outputs – the construction of the affordable homes. Below we the process in more detail by agency.

A.1 How Homes England allocates funding

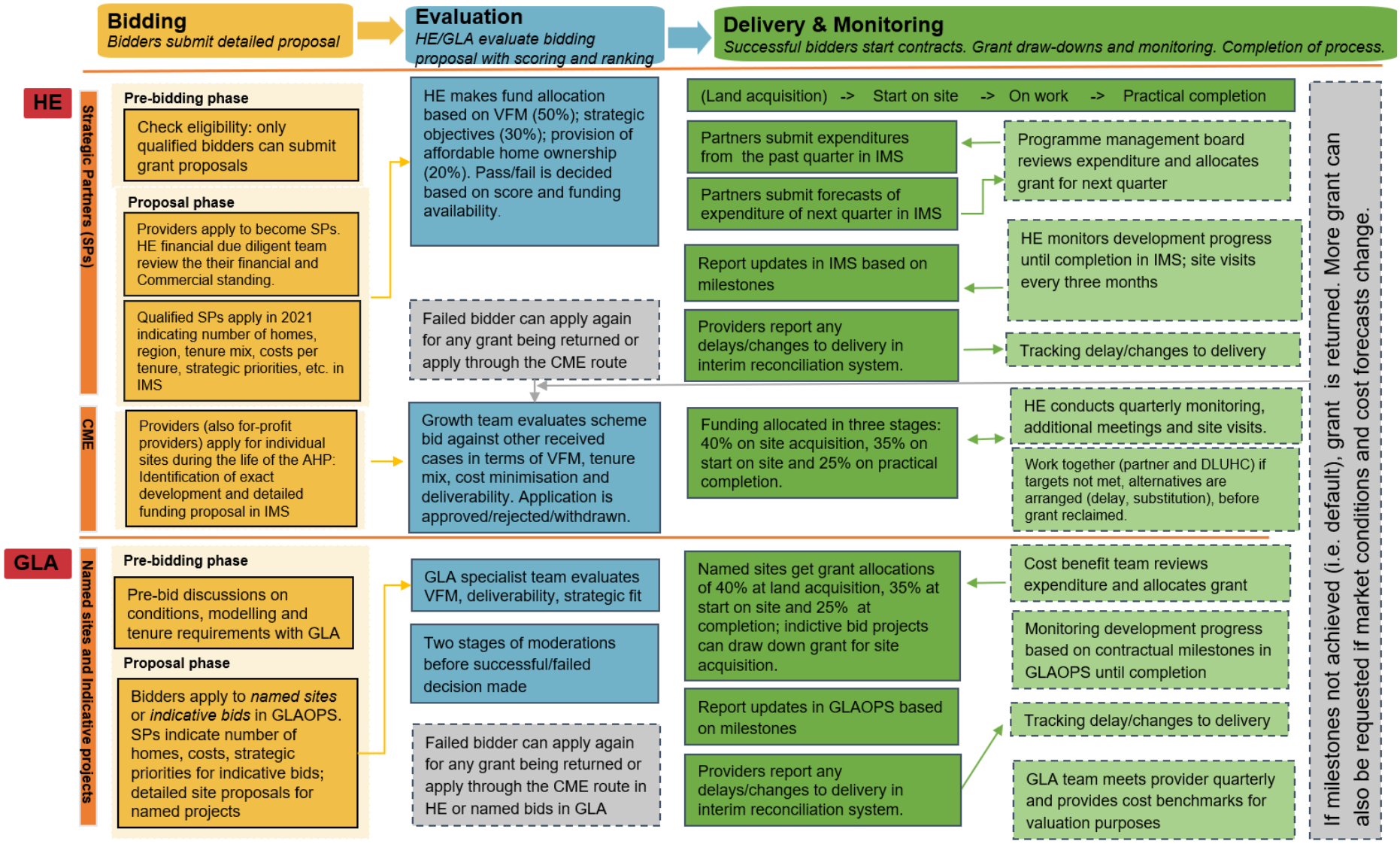
Providers applying for funding bid use the Investment Management System (IMS). and owned by HE.[30] Bids are submitted via the 'Offers application'. A provider's overall bid consists of 'lines', where each line represents an offer to deliver a certain number of homes within a certain area. The provider can apply for the SP route or the CME route.

CME. There is no fixed bidding round for CME and initially funding is allocated on a first-come first-serve basis, with the likelihood of getting funding decreasing as times goes by if there is sustained interest in the programme. The process evaluation should assess if grant rates for CMEs are lower for applications submitted later in the process. The CME route is meant to enable a bigger focus on the local needs of a community and provide rather small developments of 2-15 units. Due to the lack of economies of scale, this might lead to CME on average having higher grant rates, which needs to be tested in the evaluation. We understand from preliminary discussions with stakeholders, that LVU does not seem to be a main metric for determining VFM for CME developments and the evaluators should conduct conversations with the agencies to understand more about it, but is an important metric for SPs. We expect CME and SP delivery routes to complement each other in terms of ToC outcomes achieved; they are not direct substitutes.

SP. To submit a bid via the SP route, one must be a 'qualified investment partner'.[31] SPs have to commit to a fixed grant rate for their indicative bids, which should not change for the entire region and tenure. However, grant rates across schemes within an individual SP can vary, as can grant rates for different SPs. Individual schemes built by the same SP can have higher grant rates than the overall SP grant rate, as long as there are other schemes with lower grant rates. The fixed grant rate for a region may incentivise grant-funded development in areas within the region where land is more readily available and/or is cheaper to develop, including lower land and construction costs. If the number of units is fixed, SPs can develop smaller-size units to maximise the number of units on a development site. Additional grant for MMC is provided enabling assessment of the share of grant allocated to MMC and the effect on outcomes. The evaluation can examine the extent to which additional grant for MMC is correlated with the quantity or proportion of MMC units delivered and where those units are located.

[30] More information on IMS and the application process can be found in Homes England guidance for bid submission
[31] Organisations need to either apply for qualification in their own right or join with an existing qualified Investment Partner.

Figure A.1 Flow chart of the AHP 2021-2026 process



Bidding. Applicants provide information in the IMS in several stages. Administrators use the information provided to assess and approve bids. HE scores all scheme proposals against regional and scheme-type historic average grant rate per region and per tenure, which are used as *ex ante* VFM benchmarks.[32] In addition, assessment of what the scheme will deliver is performed to make sure the strategic priorities of the AHP 2021-2026 are met. Looking at all bids, HE identifies outliers, for which further testing for cost minimisation is performed. Past performance of existing partners is also assessed. The SP applications are scored using the following criteria and weights[33]: (1) VFM (50%) using the government benefit cost ratio (BCR).[34] Factors that affect BCR include grant level, LVU, speed of delivery and timing of payment of grant. (2) Meeting the strategic objectives (30%), which include use of MMC, provision of housing in rural areas, of supported housing, use of SMEs and local contractors, use of the national design guide. (3) Amount of the affordable home ownership (20%), with 50% percent of the homes in this tenure being awarded full points. If successful, the provider signs a 'Grant Agreement', which is a new supply contract designed based on the key principles of the delivery model of HE. The Grant Agreement contract will then be monitored by a Programme Management Board (PMB) which approves the quarterly grant claims.

Monitoring. Once funding is allocated, HE uses IMS to monitor the progress of the projects, budgets, expenditures, forecasts; evaluate key milestones, output and risk; make payments, etc. Providers submit details on indicative proposals (offers) and the individual bids for schemes (offer lines) are provided as well. Providers provide ongoing information on the projects such as milestones, expenditures, etc. Information is collected separately for each of the four tenure types: affordable rent, social rent, Help to Buy – SO and Rent to Buy. When *practical completion* in IMS is approved by HE, the site is classed under Completion and the data is finalised. Before that, grant per scheme is drawn down[35] against relevant eligible d*evelopment expenditure* (incurred costs and payment made) incurred during the previous quarter against 'named active sites' rather than against 'milestones'. For-profit registered providers draw down grant against the achievement of milestones in named active sites; those milestones are Acquisition (equivalent to 40% of the blended grant rate per unit), Start on Site (35%) and Practical Completion (25%). This means that data for sites will be uploaded more frequently for non-for-profit providers than for for-profit ones and that differentiation should be considered in the evaluation. Data on the site before it is completed for the former will hence be more reliable to use. The progress for the AHP 2021-2026 is monitored through quarterly IMS returns provided by the providers to HE, which means that the evaluators will have longitudinal secondary data on changes to the developments as a whole, including starts on site, and can assess reasons for changes in grant rates on site over time as the development progresses.

A.2 How the GLA allocates funding

Bids for strategic partnerships with the GLA are broken down into 'indicative' and 'named' projects. A strategic partner may apply to either route or both at the same time. The indicative application is a programme level application as part of the SP route. Similar to the SP route in HE, the information provided for individual sites is only indicative. The

[32] More information in Continuous Market Engagement (CME) assessment process in the AHP 2021 to 2026.
[33] Source: Affordable housing funding: strategic partner application process.
[34] See the appraisal guide.
[35] Grant draw-down generally describes a record of payments made for specific activities. Here it refers to the grant allocation of AHP 2016-2023.

named route can be used for identified schemes either as part of a Strategic Partnership or through the CME route.

The majority of the funding application and monitoring is the same as for HE. The GLA also follows a scoping framework but unlike HE, does not have spatial targets, as the GLA identifies that there is a need for affordable housing everywhere in London. As compared to HE, the GLA seems to have a more iterative process with several rounds of discussion with the provider to align grant rates and strategic objectives. The bid process has four phases. (i) In a pre-bid discussion, GLA encourages bidding by providers and clarifies funding conditions. (ii) In the second step, there is the 'bid close',[36] with GLA checking the bid, requesting supporting information and scoring the bid. (iii) The third step is negotiations[37] between GLA's area manager and the provider, with the area manager using cost benchmarks by borough and bedroom size, grant rate benchmarks, proven track record, identification of outliers, assessment of additional viability information. GLA aims to negotiate grant rates down and make sure the development fits the strategic needs. (iv) If the bid is not rejected, there might be some additional moderation of the bid against benchmarks, followed by further negotiations and agreeing the bid, or a rejection.

Differences from AHP 2016-2023. Under the AHP 2016-2023, providers could choose between approved provider, developer-led and indicative bids rather than the two routes now allowed.[38] Another major difference is that in the AHP 2016-2023, the GLA largely used 'tariff' grant rates (fixed per unit based on the date of start on site), though with an option of negotiated rates, while HE exclusively used negotiated grant rates. In the AHP 2021-2026, the GLA more closely follows the HE approach and has adopted negotiated grant rates. The switch was intended to give more flexibility to partners to make sure delivery is secured in light of changing costs. Evaluators should bear this in mind when comparing GLA grant rates under the two programmes.

[36] The deadline for bid submission: close on 9 April 2021.
[37] DLUHC requires agencies to engage in negotiations to reduce grant rate. GLA indicates that through negotiations, around £300m has been saved on the AP.
[38] The difference between the providers and application route can be find in the GLAOPS application manual.

Appendix B Themes related to the impact evaluation

B.1 Mapping research questions and areas of focus across ToC outcomes and impacts

This scoping report is broadly structured according to the outcomes set out in the ToC (see section 1.1), but in addition DLUHC requires the evaluation to cover 12 research questions (RQs) and 5 areas of focus (AFs). The Table A.1 maps the outcomes of the ToC onto the related research questions and areas of focus. There is not one-to-one correspondence, as some RQs and AFs relate to more than one intended outcome.

Table A.1 Mapping RQs and AFs across ToC outcomes and impacts

Intended outcome(s) from Theory of Change	Related research question(s)	Related area(s) of focus
P1: Increasing supply of affordable housing in areas of need **S1:** Greater range of housing options	**RQ1:** How well has the delivery model of the AHP 2021-2026 worked to deliver the number, tenures and locations of homes intended as well as other strategic aims of the programme? **RQ2:** To what extent have DLUHC policy priorities pursued through the AHP 2021-2026 affected the number, types and locations of homes delivered? **RQ3:** How effectively has the programme responded to external factors impacting on delivery and why?	**AF A:** The feasibility of quantitative methods to determine causal effect of aspects of the delivery model on things like number of homes / grant rates. **AF B:** The feasibility of quantitative analysis to determine causal effect of the new SO model and RTSO on grant rates. **AF C**: How can housing supply additionality of the AHP 2021-2026, particularly homeownership products, be assessed through evaluation?
P2: More decent and quality housing in areas of need **S2:** Improved energy efficiency **S5:** Reduced fuel poverty	**RQ2:** To what extent have DLUHC policy priorities pursued through the AHP 2021-2026 affected the number, types and locations of homes delivered? **RQ7:** To what extent has the AHP 2021-2026 provided good quality housing?	

	RQ 8: To what extent does the AHP 2021-2026 deliver the right types of general needs housing in the right places?	
Demand side outcomes: Tenants	**Related research question(s)**	**Related area(s) of focus**
P3: Tenants access homes that are suited to their needs **P7:** Accommodation is freed up for those in housing need (e.g., TA, rough sleeping, or overcrowding)	**RQ5:** What are the demographics of households supported by AHP 2021-2026 provision? **RQ10:** To what extent is supported housing delivered through the AHP 2021-2026 meeting the needs of those occupying that housing?	**AF E:** How to better establish counterfactuals so that the causal effect of rental units delivered through the programme on the "number of households obtaining suitable rented housing they can afford" can be better determined.
P4: Tenants move into rented homes they could not otherwise afford **P8:** Reduced financial hardship/increased financial stability **P9:** Greater housing security	**RQ6:** To what extent has the AHP 2021-2026 led to more households obtaining suitable rented housing they can afford?	**AF D:** How further evidence can be collected to help determine the impact of new rental units on HB spend, particularly with respect to determining robust counterfactuals. **AF E:** How to better establish counterfactuals so that the causal effect of rental units delivered through the programme on the "number of households obtaining suitable rented housing they can afford" can be better determined.
Demand side outcomes: Ownership	**Related research question(s)**	**Related area(s) of focus**
P5: New Entrants to new SO model **S3:** Staircasing progression through increased shares	**RQ 11:** How well is the new model of SO working? **RQ 12**: How well is RTSO working?	
Mixed communities and tenures	**Related research question(s)**	**Related area(s) of focus**
P6: Creation of mixed communities **S4:** Creation of mixed tenure	**RQ9:** What has been the impact of AHP 2021-2026 developments on communities and neighbourhoods and why?	

Broader societal outcomes	Related research question(s)	Related area(s) of focus
S6. Improved health and well-being **S7.** Broader social benefits including reductions in crime, improvements in education, reduction in child poverty **S8.** Increased access to employment opportunities		

B.2 Assessing the additionality of grant-funded homes

Additionality assumptions in the business case

The question of additionality—that is, how much grant-funded housing adds to the *overall* housing supply-has been analysed within the Department mainly as part of their housing supply model. The Department's model identifies two factors that affect additionality: deadweight loss (i.e., the supply would have happened anyway) and displacement of other types of housing. Acquisitions from other suppliers are assumed to have no net effect.

Their work suggested that there had been no deadweight loss with respect to social and affordable rented housing as no market provider would have been prepared to supply sub-market housing. With respect to social rented housing, the research used time series analyses of varying length and found no evidence of displacement at national level. However, the data were inadequate to come to any different conclusion at regional level.

This expectation of 100% additionality for new build sub-market rented housing (ie new build affordable rent and new build social rent) is the foundation of the additionality figures in the business case for the AHP 2021-2026. That document further assumed that the 10% of units expected to be acquired (rather than built) would not generate additional output in the sector from which it was acquired, be it the social rented sector or the market. Acquired units were not additional so overall additionality from rented units was assumed to be 90%.

The additionality of SO and Rent to Buy products was assumed to be 60% based on the Department's appraisal document, which recommends that additionality should reflect how closely the market and affordable housing products were related. The suggested range for affordable housing of all types was between 50%-75%.[39] Taken together, overall additionality in the business case is therefore assumed to be around 75%.

[39] More information can be read from appraisal guide.

Discussion

One objective of the evaluation is to provide evidence of actual additionality. This involves assessing deadweight loss, displacement, and acquisition effects. Figure A.2 illustrates the two extremes of additionality. In example 1, there is no additionality—AHP-funded housing simply displaces homes that would otherwise have been built. In example 2 all AHP-funded homes are additional. In fact, true additionality will lie somewhere between these two extremes—but importantly it can be expected to differ by tenure and location.

Figure A.2 Local new-build tenure composition: extremes of additionality

Example 1: An area with no additionality

No AHP (counterfactual)

With AHP

Overall additionality is the AHP's contribution to total housing supply or

(C+D+E) – (A + B)

In this example zero—overall housing supply is unchanged, as in the counterfactual land would be used for housing at similar densities.

Affordable additionality is contribution to affordable housing supply or

(D+E) – B

In this example positive. Compared to the counterfactual, AHP-funded housing does displace some affordable housing (B-E>0) and some market housing (A-C>0) through land-price rises/constrained supply.

Example 2: An area with high additionality

No AHP (counterfactual)

With AHP

Here overall additionality is positive, as is affordable additionality.

Affordable rented housing. The assumption that the additionality of affordable rented housing is 100% implies that there are no constraints on supply or price adjustments that would result in displacement of other provision. In this context, it is important to note that the policy and market environment has changed in the last few years with the emergence of Build to Rent and the inclusion of Discounted Market Rent within these schemes, as well as the introduction (at least at the pilot phase) of First Homes. These can be expected to increase the range of affordable housing that will be available across the country and offer somewhat different products, impacting on both the capacity to supply and the benefits from the AHP2021- 2026. In both cases the discounts are relatively low in higher valued areas but relatively high in lower valued areas – as compared to the difference between affordable rents and market rents.

The Department's assumption is that 10% of the units subsidised by the AHP 2021-2026

will be acquisitions and that these will result in zero additionality — that is, the loss of that unit from market supply (or possibly from other affordable housing sources) and the payment for that unit will not lead to further housing provision. The literature suggests that, by reducing developer risk and easing access to finance, acquisitions of new-build homes for affordable housing might enable higher market output and generate additional social sector housing through developer contributions. Evaluators will need to assess this.

Demand additionality for affordable rented housing can be expected to be 100% to the extent that rents are set at sub-market levels. The situation is less clear with respect to *supply* additionality, which could be affected in two ways: the supply of other types of affordable rented housing could be modified e.g., because of an impact on the numbers of affordable units coming forward through developer contributions. Local plan requirements for developer contributions are not related to AHP 2021-2026, but in practice negotiations might be affected by success in the AHP 2021-2026 programme as might the tenure mix of what is required. More generally, it is reasonable to expect that supply additionality would vary geographically in line with housing pressure. More pressured areas often have shortages of labour skills and construction materials and, in London in particular, a lack of available buildable land. In addition, less suitable land in terms of costs of clearance and development might have to be brought forward. Work done by members of the research team for the Scottish Government (Blanc et al., 2021) found that affordable housing grant contributed to land price increases which given constrained land availability inherently affected output levels of both affordable and market housing.

Shared ownership. With respect to SO (and Rent to Buy), Department guidance states that the closer the product is to the market, the lower the additionality. The range is given as 50-75%. Additionality in this context has two elements (Whitehead et al., 2018). The first is the extent to which consumers choose SO when they could have entered owner-occupation another way The second is the extent to which AHP 2021-2026 ownership products substitute for market housing or indeed enable more market housing to be developed because of land and other supply constraints on the one hand and reduced risks on the other.

The attributes of the market and social products are clearly different and there has, as yet, been very little research into how they compare or on peoples' attitudes to what they are buying. The evidence currently available relates to traditional SO rather than the new model, so a three-way comparison will be necessary, as some elements of the new product will appeal more to potential purchasers and some less. It would be surprising if, as assumed, the additionality under the new regime would be the same as under the traditional system. Both scale and local markets will be relevant to the assessment.

Evaluating additionality. Empirical evaluation of additionality has proved difficult. Across much of London and the south the tightness of the land market suggests that there should be significant crowding out. A number of empirical studies (e.g., Hilber and Vermuelen, 2016; Carozzi et al., 2020) have looked at the effect of supply constraints on house prices. They identified internal constraints-measures and found that regulatory constraints have a substantive positive impact on the house price-earnings elasticity and that the effect of constraints was largely confined to highly urbanised areas. Their methods and data provide a model for evaluating whether grant-supported housing contributes to reducing market output in high pressure regions.

Additionalities need to be evaluated not just at national but also regional level because of variations in housing and land markets. In terms of deadweight loss and displacement, there are some markets where social and affordable rents are close to market rents (sometimes even above) and in these locations private providers might be prepared to meet some of the relevant demand, although they would not provide similar security. *The evaluators might begin to assess this by comparing social/affordable and market rents by locality together with qualitative assessments by developers of whether purchasers of new build market housing direct supply at this part of the market.*

With respect to displacement, the Department's assumption of no deadweight or displacement losses implicitly requires that the AHP 2021-2026 has no effect on land availability, land prices or costs of production. Where the scale of the programme is significant and planning constraints are tight there is the potential for both deadweight and displacement loss. *Evaluators should monitor the evidence collected by the Department in setting delivery targets, as well as statistics on housing, construction costs and land prices at regional and ideally LA level. Interviews with developers, providers and LAs in case study areas on the extent of constraint will also be necessary.*

Evaluators should also address the extent to which availability of AHP 2021-2026 funding could lead to an *increase* in private sector supply. This might occur because mixed tenure sites will be partly funded by government, mitigating risk. This could enable private borrowing to come forward earlier and go further and could lead to more or larger sites being developed or densities being increased. *The possibility that risk reduction could increase developer appetite to build more market as well as social housing was a clear finding from the Help to Buy evaluation and should be addressed in this evaluation.*

B.3 Risks from external factors

The external factors so far identified in the ToC as risks include:

- Housing market conditions
- Finance market conditions
- Investment related to building safety including cladding
- New build regulation - e.g., Future Homes Standard
- Construction costs
- Availability of land / materials / labour
- Planning regulations e.g., with respect to developer contributions
- Changes in rent policy affecting income
- First Homes
- Leasehold arrangements
- COVID-19 pandemic

Macroeconomic conditions. The over-arching context is that of unpredicted macro-economic conditions. Sustained inflation and higher interest rates are undoubtedly the most important risks facing the AHP 2021-2026. The allocations and grant rates were generally agreed with strategic partners in quite different economic conditions. Equally, the housing market in general faces unpredicted pressures.

While some commentators are suggesting (in May 2022) that inflation, in particular, might be a relatively short-run phenomenon it will undoubtedly impact on the early years of the

programme as bids could only take account of expectations in mid-2021. From the point of view of the evaluation it will be necessary to assess how changes in macro-economic conditions have impacted on costs, prices, and attitudes to risk, based on the macro-economic models that are regularly included in Treasury assessments. *Evaluators should assess the robustness of the grant allocation system to a changing and more uncertain environment*.

The variables most likely directly to affect provider profitability are land costs, construction costs and the availability of labour and materials. All will affect the speed of building and the extent to which agreed grant rates will enable output rates to be maintained and at the limit the programme to be completed.

One factor which may have been partly built into expectations is the possibility of interest rate rises resulting in the cost of credit rising for both providers and potential purchasers of SO properties. Uncertainties about whether the market has been overheating with the potential for sudden declines in house prices may also impact on the supply and cost of mortgage finance.

Changes in external factors are likely to affect SO more than rental housing because demand depends not just on overall demand for housing but also on the value of the SO offer to potential buyers. There are concerns that both rents and service charges on SO may rise more rapidly than affordable rents.[40] Changes in mortgage rates will affect shared owners' costs. Changes in external factors are also likely to affect strategic partners and CME providers differently, as agreements for the latter are made much closer to the project commencement date and can taking more direct account of the economic environment. All these factors will need to be addressed in the evaluation including in particular in the *comparison between the effectiveness of longer-term contracts with strategic partners and CME.*

Products. The two main uncertainties here are with respect to (i) the introduction of First Homes with 25% of affordable homes provided through planning obligations being First Homes and (ii) the acceptability of the new SO model. They provide different entry points to owner-occupation and have been popular in pilot schemes. Where they fall in relation to traditional SO is as yet unclear although it would be possible to identify the relative access position for households with different income levels and deposits. As of May 2022, demand for SO is generally adequate so substitution between products was thought to be relatively unimportant. However, there is evidence of some providers *substituting rental for SO housing. The costs to the public purse will differ, so this should be monitored*.

B.4 The impact of the AHP 2021-2026 on housing benefit

One aim of the evaluation is to look at the impact of new subsidised supply on the HB bill in the short and medium term. Here, the results depend on tracking individual households and their homes.

There are at least four ways that the AHP 2021-2026 output could impact on the HB bill. First, and most obviously, the tenant moving into a social or affordable rented home could come from the PRS where they were paying a higher rent and receiving maximum LHA in

[40] See Shared owners face soaring bills due to inflation-linked rent and service charge increases.

the area. The result then is positive for the tenant (who obtains a safe and secure appropriately sized home while, if eligible, receiving full HB) and reduces the HB bill. The only constraint is with respect to the welfare cap, but social tenants are less likely to reach that cap. If the rent charged is less than the private rent or the relevant local housing allowance, there will be a net gain. This gain will extend into the long term (unless circumstances change).

Secondly, the new tenant may come from another type of housing tenancy with higher rents. The most important category here would be those who come from TA which is often paid nightly at high cost. In these cases, the rent is paid partly by Department for Work and Pensions (DWP) and partly by the LA in addition to any tenant contribution. The position with rough sleepers is more complex, but the growing use of exempt accommodation which usually provides some support and has no HB limits has increased DWP payments very considerably. In both cases the likelihood would be that the rent in the new property would be lower, probably very much lower than in their previous accommodation, which would lead to significant savings. This is in addition to providing more appropriate accommodation for these households.

However, various scenarios would result in increased HB payments, offsetting at least some of these benefits. If the allocation is to someone who was overcrowded in the existing accommodation in the social sector, the rent of the new larger social sector home may be higher leading to increased HB payments. The same may apply to those accommodated in house in multiple occupations or overcrowded conditions in the PRS. Probably much more significantly, if the tenant is forming a household for the first time and the new household is eligible for HB this will increase the HB bill. The question in terms of the public money involved is thus when the household would have formed without the AHP 2021-2026.

Finally, there are second-round effects arising from the fact that incoming tenants may leave another tenancy vacant in either the social or private sector. This will add to the HB bill if a new household eligible for HB forms or if the move enables the household to find larger, more appropriate accommodation.

There is also a question as to how increasing numbers of households moving into SO might impact on HB. Households entering SO would have incomes that mean they would not normally be eligible for HB, but if their circumstances change while they are part-owners, they can receive benefits to cover the rental element of their payments. The public sector cost would however be in line only with the proportion owned. Given the small shares that people can now purchase, it may be that these new SO households are also more at risk of loss of income. But while the risk is higher than under earlier schemes, the numbers involved are still likely to be small.

Evaluation methodology and data sources. The methodology for estimating the potential effects on HB will mainly involve examining the attributes of the households moving into the accommodation, both at first letting of the AHP 2021-2026 units and relets of properties left vacant by these allocations. CORE Lettings and Sales at least in principle provide evidence on potential eligibility for HB at the time of moving in, as well as the tenure of the home which the tenant/purchaser has vacated. They do not provide other details of their circumstances before moving. The quality of the data will depend on how effective the process is for matching households to specific AHP-funded units. More

general evidence on movers can help to provide context and estimates of the likely PRS rents and possibly of TA from which the households will have come. The distinction between households forming and those moving is likely to be the most important element in the assessment.

Qualitative evidence from a sample of LAs could be used to supplement the available secondary data and give some indication of the reasons why tenants have been accommodated. It would also be the most likely source of information about how vacated social units have been used. Most newly forming households move into the PRS. Secondary data from the large DLUHC private rental surveys would provide some indicative figures on their use of HB. Given the variation in rents and incomes between areas it would be desirable to look at LA level data at least to group areas into categories.

B.5 Discussion of possible regression models

Propensity score matching (PSM). When a control group does not naturally exist, as is the case with the AHP 2021-2026 programme, it can be constructed artificially by creating a matching group of households that did not benefit from the treatment using propensity score matching based on data on household characteristics. PSM is recommended for **Sub-question I12:** ***Are AHP-funded homes affordable and secure for beneficiaries?***; **Sub-question I14:** ***How would households have behaved without AHP 2021-2026?;*** and **Sub-question V1:** ***Did the benefits of the AHP 2021-2026 outweigh the costs?*** as indicated in Figure 5.1. For more detail on PSM models we recommend Rosenbaum and Rubin (1983) and Austin (2011).

Theoretical and agent-based models. While the regression models presented above are suitable for ex-post studies of market impact, including causality, they cannot be used for the study of long-term effects. The AHP 2021-2026 confers potential benefits that are realised well beyond the time span of the operation of the programme. These can potentially be estimated using theoretical and agent-based models which can help address the second part of **Sub-question I18:** ***How do shared owners staircase and what does it mean for their wealth accumulation?***
As a baseline for the development of a theoretical framework for analysis, we recommend that the evaluators use the framework by Campbell and Cocco (2003) which accounts for uncertain inflation, risky income, risk aversion, default cost, and probability of moving house for a household. Calibration of this model for the UK market has been undertaken by Miles (2005), and we recommend using this calibration for the purpose of the current evaluation. For modelling of the way home buying decisions impact the lifetime wealth of households, see Sinai and Souleles (2005) or Damianov and Escobari (2021). As an alternative to theoretical modelling, the evaluation team can also employ agent-based models. These models are applicable when modelling the interaction between autonomous and heterogeneous individuals in social settings in which the spatial dimension is important while agent behaviour is too complex to be analysed with standard analytical techniques (Baptista et al., 2016). Such a model would be most useful for the study of the welfare effect of households living in social and affordable housing arrangements as well as households which are shared owners. Data sources that can be used as inputs in agent-based models for the UK are presented in Aylett-Bullock et al. (2021), while specific calibration parameters are presented in Baptista et al. (2016).

Panel regression model. Below we show, using an example based on a sub-question in the report, how a panel regression model could be designed. Ideally, we recommend that the regression analyses are conducted by academics. The sample question is ***What is the regional variation in the demographics of shared owners and how has this composition changed with the changes in the AHP 2021-2026 programme?*** The evaluation should examine whether the changes in AHP 2021-2026 rules led to changes in the demographic composition of households participating in the programme.

We recommend the following panel regression fixed effect specification:

$$y_{it} = \beta_1 PostApril2021_t + \beta_2 PostApril2021_t \times Z_{it} + \alpha_i + \varepsilon_{it}$$

Hereby y_{it} is the relevant outcome variable measured at the LA level, such as the percentage of shared owners who come from the PRS or were living with their parents. The dummy variable $PostApril2021$ signifies the timing of the change in the rules, while Z is a vector of relevant LA characteristics such as employment, income, and price-to-rent ratio in the LA. The coefficients of interest, β_1 and β_2 capture any affordability gains of amendments to the programme rules. AHP 2016-2023 is used as the counterfactual in these regressions.

DID and regression discontinuity models. Below we show, using an example based on a sub-question in the report, how a DID regression model could be designed. Ideally, we recommend that the regression analyses are conducted by academics. The sample question is, ***Has the SO tenure allowed families to better manage their lifetime wealth?*** For the analysis of short-term effects, we propose DID regression discontinuity approaches that take advantage of (i) changes to the programme in April 2021, and (ii) the eligibility threshold of £90,000 in London and £80,000 outside of London. These criteria can be used to define treatment and control groups. In a DID regression specification, the evaluators could use the AHP 2016-2023 as a counterfactual.

We propose the following empirical model:

$$y_{it} = \alpha_0 + \alpha_1 PostApril2021_t + \alpha_2 D_{Inc<£80k} + \alpha_3 PostApril2021_t \times D_{Inc<£80k} + \beta X + \varepsilon_{it}$$

Here the variable y_{it} measures outcomes such as consumption of durable and non-durable goods, number of vehicles, savings and investments in stocks and bonds, and other relevant outcomes. The dummy variable $D_{Inc<£80k}$ takes on the value of zero if the family income exceeds £80,000, defining the control group of individuals who are ineligible for the programme. The coefficient of interest is α_3 which shows whether the change in the programme has any material impact on the finances of the family. Of note here is the ability to study the aspect of portfolio diversification which is unattainable with a standard fully amortising mortgage contract where the family is forced to acquire extra equity thus limiting financial resources available for other investments.

A complementary approach based on regression discontinuity design affords insights into the effects of the programme under a counterfactual of non-existence of the programme. In a way similar to the DID regression, the discontinuity around the £80,000 threshold can be exploited to assess the benefits of the programme under this alternative counterfactual. The main advantage of the regression discontinuity design is that it allows access to a much larger panel dating back to 2016 (or even 2011, when a similar programme was in

operation). One downside, however, is that observations should be selected only from a small bandwidth around the income threshold which reduces the number of datapoints.

The proposed regression equation takes the following form

$$y = \alpha_0 + D_{Inc<£80k}\tau + \beta X + \varepsilon_{it}$$

Here τ signifies the treatment effect. This design does not suffer from self-selection issues as income is unlikely to be manipulated by households for the sole purpose of gaining access to the programme.

Spatial regression models. The spatial hedonic modelling accounts for spatial effects in econometric models such as the relative positioning, distance, or spatial arrangements of geographical areas (see Anselin, 1988; Milcheva and Zhu, 2016 and 2018; Hyun and Milcheva, 2018 and 2019). An evaluation question that could be answered using spatial regression analysis is, ***Is it the case that the partnership route can lead to housing supply in areas <u>within the same region</u> where land is more readily available and/or is cheaper to develop?*** A spatial lag model with the structure

$$y = \rho W y + X\beta + u$$

can be estimated. Here y is the additional supply in the LA, X includes control variables such as household income and other LA specific demographics, the affordability indicator, and the measure of supply elasticity. The matrix W is the spatial weights matrix denoting the degree of interdependence across LAs, and ρ is the autoregressive coefficient. The parameters of the model are estimated using a Maximum Likelihood estimation. This analysis can be performed by academics.

Appendix C Secondary data

In this appendix we discuss the key administrative databases (IMS and GLAOPS) that are primary data sources for the process and VFM evaluations and some sections of the impact evaluation. We also discuss RSH data, and give instructions for merging datasets.

IMS. HE uses this database to manage funding applications and the progress of the AHP 2021-2026. The database contains information at project/scheme level for each provider and each tenure, including

- source of financing (under the 'contributions' tab)
- amount of cross-subsidy from open market sales
- whether the site is greenfield or brownfield
- whether it is on green belt land
- if the site is procurement or a partnering venture

IMS also contains information on whether grant-funded homes form part of a wider development where affordable housing contributions are to be secured through a planning obligation or condition, as well as if the wider development is delivering 100% affordable housing. Evaluators can use this information to calculate the share of AHP 2021-2026 homes out of all affordable homes on each site, as IMS records the total numbers of affordable homes and all homes for each scheme. 'Unit detail' distinguishes between general needs housing and accommodation for older, disabled or vulnerable people; this is further categorised by specific 'client groups' e.g., rough sleepers.

IMS has detailed forecasts related to **SO units** including rents, initial sales share in percentage terms, and value. For **rental tenures**, IMS contains information on the expected market value of the new build unit, prospective weekly rent and market rent, as well as percentage subsidy. The database distinguishes units that are exempt from RTSO. Within the 'scheme cost' tab the evaluator can get information on the purchase price of land, current value of land (this will help us understand if the land has been bought well in advance), whether the land is in public ownership, works/construction costs, and on-costs. This is key information for some of the counterfactuals.

For **SPs**, IMS contains information about 'active sites', including location, planning status, acquisition status, build contract progress, forecast start and completion dates, forecast number of units and tenure mix, indicative information about MMC delivery (where applicable) and about rural and community-led delivery (where applicable). The scheme level data also includes details on property type, tenure, floor area, supported housing information, MMC category achieved (1 or 2), pre-manufactured value (PMV) score (55% or above), rural vs community-led unit and the associated additional cost of MMC.

Address linking. IMS contains OS X-Y coordinates for funded schemes. These together with the postcode are essential to link the IMS data with other datasets including CORE, using the exact location. The IMS database contains a field for the full postcode, but it is not currently mandatory to fill in. For the address in IMS/GLAOPS the evaluators can find the postcode using the X-Y coordinates. The exact physical address and full postcode in GLAOPS, IMS, CORE Sales and CORE Lettings is going to be mostly needed for the correct identification in the quantitative analysis to enable evaluators to distinguish AHP 2021-2026 funded properties from others and across tenures and measure the outcomes

and impacts associated with the programme, and enables linking of IMS with other data that contain addresses such as Land Registry, EPC and EHS. In addition, information on open market sales can be accessed via Land Registry and merged using the address. *We therefore strongly recommend that filling the postcode and full address fields are made mandatory and are validated for above databases.*

GLAOPS. GLAOPS is the GLA equivalent of IMS and contains very similar information, although structured in a different way. The key location-matching variables of postcode and site co-ordinates are mandatory in GLAOPS, but there is no validation of their accuracy and evaluators may find that the location of some sites is not correctly identified.

Other information in GLAOPS includes

- cost, including land costs;
- other sources of funding or income (the categories are named slightly differently to IMS but are directly comparable);
- dates of
    - land acquisition
    - when a contractor was appointed
    - planning permission phases
    - start on site
    - completion

The start on site and completion dates are used for monitoring by the GLA and can also guide the process evaluation. There is also a marker if the site is a regeneration site; this can be used to assess how grant rates vary by site size. If the data are linked, it can also assess broader effects on additionality and communities.

New sections have been added to GLAOPS for the AHP 2021-2026 including on design standards (6 possible options), sustainability standards (9 options) and MMC (5 categories). GLAOPS has information on the percentage of homes on site will be MMC (minimum is 25%). These variables can be used to assess the degree to which these attributes affect grant rates, tenure mix, location, etc. Evaluators should also use them to check if the promised deliverables were achieved.

The section on design standards sets out the total number of units provided by the whole development (also available from the planning application). Evaluators should construct a variable of the proportion of AHP 2021-2026 units out of total units and use this to map where schemes are located, grant rates based on these criteria and other relevant descriptive statistics. Other important data include delays for each milestone, which can be used to assess the extent to which projects are delayed and the reasons for that (e.g., choice of area, delay in planning permission, construction costs were underestimated, etc.) Note that GLAOPS does not record S106 units on a mandatory basis which might be a caveat for analysis within London and ideally should be collected.

Regulator for Social Housing (RSH) data. The RSH collects several publicly available datasets. The LA Data Return and Statistical Data Return are used for regulatory purposes and contain information on affordable housing stock and rents at provider level. The evaluators can request access to data from the Financial Forecast Return (FFR) which collects information from PRPs that own 1,000 or more social housing units, including

financial statements, modelling assumptions, tenure inputs, and compliance information. The information includes forecasts of 132 financial statement variables (income, grant, cost, investment etc) for up to thirty years. There are also forecasts of macroeconomic variables such as CPI and RPI, and property information such as management costs, sales values, housing units owned or leased. PRPs with 1000 or more social housing units also file electronic annual accounts, which include self-assessed VFM and statements of financial performance. The financial information primarily relates to SO first tranche sales and properties developed for sale. The most important data are presented in a section called ‘operating surplus note’, including the estimated value of social housing units and predicted need for social housing and special needs homes. The information can be used to assess performance of affordable housing at the firm/provider level. The RSH also has since 2013 conducted a quarterly survey of providers focussing on the financial health of providers including amount and sources of borrowing and number of homes built and sold.

Appendix D Research questions glossary

Table A.2 Research Question Glossary

Section	RQs	Sub-RQs	Question
Process Evaluation	1,2	P1	How effective was the AHP 2021-2026 in delivering its aims?
	3	P2	How have external factors affected provider appetite for programme funding, grant rates by tenure, region, type of provider, and the delivery of the strategic priorities?
	1,2	P3	To what extent has changes to programme design (in particular increasing use of Strategic Partnerships and tighter controls on acquisitions) led to more land-led delivery compared to AHP 2016-2023?
	1,2,10	P4	Lowering the minimum initial purchase share of SO from 25% to 10% can reduce the availability of cross-subsidy funding. Does this lead to fewer homes and/or higher grant rates?
	1,2,11,12	P5	Does the new SO model increase maintenance costs for landlords and thus reduce provider appetite for programme funding?
	1,2	P6	Does the new SO model associated with the RTSO lead to different grant rates and overall less housing as a result?
	1,2	P7	Will the new SO model associated with the RTSO worsen the borrowing position of providers?
	1,2,4,7	P8	Does the strategic priority to deliver more MMC and the additional grant provided for it lead to more MMC units?
	1,2	P9	Do scheme-level grant rates differ by provider type?
Impact Evaluation	6,7,9,10	I1	To what extent is AHP-funded provision additional?
	6,10,11,12	I2	What happened to overall housing supply in the course of the AHP 2021-2026, and how did the programme affect that supply?
	5,6	I3	Was AHP 2021-2026 housing concentrated in 'areas of need' ?
	3,7	I4	How did external factors and risks affect total AHP 2021-2026 output and its composition?
	1,2,8	I5	To what extent do the dwellings built under the AHP meet required design, energy and building standards?
	8,9	I6	Do the types and sizes of the AHP 2021-2026 units reflect national, regional, and local need, including requirements for supported housing?
	11,12	I7	How does the quality of AHP-funded SO homes compare to other AHP-funded units and to new market homes?
	5	I8	What types of households live in AHP-funded homes, and are the homes an appropriate size?
	5,10	I9	Who lives in AHP-funded supported housing, and does it meet their needs?
	7,8,9,10	I10	Are beneficiaries better housed in AHP-funded homes?
	9	I11	Do other households benefit from moving to freed-up homes?
	7	I12	Are AHP-funded homes affordable and secure for beneficiaries?
	6, 10	I13	Does investment through the AHP 2021-2026 reduce the HB bill?
	4,6,10	I14	How would households have behaved without AHP 2021-2026?
	6,11,12	I15	What are the characteristics and previous tenures of the households buying SO?
	10,11,12	I16	What are the characteristics and previous tenures of the households buying SO?
	6,10,11,12	I17	Has SO allowed families to overcome affordability constraints? Do shared owners buy the same type of homes that they otherwise would?
	10,11	I18	How do shared owners staircase and what does it mean for their wealth accumulation?
	11,12	I19	Does SO provide a secure tenure?
	11,12	I20	What is the value of the RTSO for social tenants?
	5,9	I21	Did grant-funded homes contribute to the creation of mixed tenures and mixed communities?
	10	I22	How are beneficiaries' lives changed by living in their new homes?
	8,10	I23	How has the AHP 2021-2026 housing affected local levels of employment, crime, education etc.?
VFM	4	V1	How did the use of design guides/guidance affect VFM?
	4	V2	Was AHP-funded rural housing a good use of resources?

	4	V3	How did the requirement for a realistic balance of development on brownfield/remediation sites affect VFM?
	4	V4	How did the use of local and SME contractors affect VFM?
	4	V5	How did working with smaller HAs affect VFM?
	4	V6	How did the requirement to use at least 25% MMC affect VFM?
	4	V7	How did funding supported housing through the AHP 2021-2026 affect VFM?
	4	V8	How did the use of design guides/guidance affect VFM?