

Final SHLAA Methodology

1 Introduction

This document outlines the final methodology for the 2017 London Strategic Housing Land Availability Assessment (SHLAA), which has been updated following the 8 week public consultation between 23 November 2016 and 20 January 2017.

1.1 In line with national planning policy and guidance, the next London Plan will need to be informed by a Strategic Housing Land Availability Assessment (SHLAA). The purpose of the SHLAA is to identify the amount of housing capacity in London that is suitable, available and achievable during the plan period in order to address housing need. The study will cover a 25 year period from 2016 to 2041 and will inform the housing targets in the London Plan. This will be supported by a separate viability assessment. The draft methodology is structured as follows:

- Section 1 provides an introduction and sets out the context to the SHLAA study
- Section 2 summarises the density estimates proposed for the SHLAA
- Section 3 explains the probability based approach applied to 'potential' large sites and explains how planning policy, environmental and delivery constraints will be applied in the study
- Section 4 sets out the range of potential scenarios that will be tested in the study
- Section 5 sets out the approach to small sites and long term vacant homes

Sources of capacity

1.2 The study will draw on the following sources of capacity:

- **Approvals** – net housing provision from London's pipeline of large sites with planning permission (0.25ha or larger), identified in the London Development Database (LDD). This takes into account any housing completions undertaken on sites where development has already commenced. It will also include non-self contained housing (eg accommodation for students and specialist housing for older people).
- **Allocations** - large sites which are allocated or informally identified for housing/mixed use redevelopment (0.25ha or larger) – these sites have been provided to the GLA by boroughs.
- **Potential sites** - other potential large sites (0.25ha or larger) which are currently in the SHLAA system or have been identified through the call for sites or through GLA/TfL development capacity studies in opportunity areas and associated with transport schemes. In addition, boroughs will be able to add new large sites and edit site polygons drawing on their local knowledge.
- **Small sites** - annual trends in conventional housing completions on small sites under 0.25ha in size (2004/5 – 2014/15), taking into account potential for these trends to be increased through changes to planning policy and scenario testing.

Project timescales for the SHLAA

1.3 To inform the draft London Plan the SHLAA needs to be completed by summer 2017, with initial results finalised by June. In order to meet this deadline it is necessary to:

- carry out site assessment and borough one to one meetings between February and mid May

- undertake various scenario tests alongside the site assessment process
- finalise and write up the SHLAA document by the end of August 2017

Background and context to the study

- 1.4 The next housing need assessment (SHMA) is likely to show a higher overall housing requirement due to faster household population growth and worsening housing affordability. Initial GLA estimates suggest this could result in an annual housing requirement of between 55,000 and 65,000 homes, with affordable housing need likely to comprise more than half of this figure. Indicative results from the SHMA are likely by March to inform the Full Review of the London Plan. The final SHMA and SHLAA studies will be published alongside the Draft London Plan in Autumn 2017.
- 1.5 The NPPF requires that plans meet the full, objectively assessed need for market and affordable housing as far as consistent with the policies set out in the Framework¹. The SHLAA plays an important role in understanding the extent to which London has the land capacity to meet its objectively assessed housing need, taking into account the range of economic, environmental and social policy objectives and an understanding of potential deliverability constraints.
- 1.6 The proposed methodology for the new SHLAA broadly follows the same approach as the previous SHLAA which was found sound during the Further Alterations to the London Plan Examination in Public (EiP) and at previous London Plan EiPs. Further refinements are suggested to the SHLAA methodology in this paper. These aim to ensure potential housing capacity is not being under-estimated, while understanding the competing land use priorities and without undermining the overall robustness of the SHLAA. This follows a detailed review of the previous SHLAA methodology in light of national guidance and the site assessment process.

Confidentiality – potential sites

- 1.7 Site specific information on all ‘potential’ sites in the SHLAA will remain confidential, as the SHLAA provides an aggregate, probability based estimate of the potential housing capacity on these types of sites. Specifically identifying potential sites might undermine current uses, pre-empt the statutory planning making/decision making process, and affect land values which could compromise wider planning objectives.
- 1.8 Consequently, it is for each borough to determine whether information on potential sites should be made publicly available at site level, eg in terms of their Local Plans, housing trajectories and brownfield registers. As part of the study the GLA will only publish information about sites with planning approval or which are already publicly identified as suitable for housing, eg Local Plan allocations. These approved and allocated sites will be published on the London Datastore on the Mayor of London website³.

The GLA’s call for sites

- 1.9 In line with national planning guidance, the GLA has carried out a call for sites, jointly with boroughs. This was advertised on the GLA website, through direct mail outs to stakeholders, coverage in London First’s industry newsletter and through boroughs’ websites. Approximately 1,300 sites have been submitted through the call for sites. The

¹ NPPF paragraph 47

³ <https://data.london.gov.uk/>

exercise has also provided an appreciation of land owners and developers aspirations for those sites and their views on deliverability, constraints and phasing which can feed into site assessments.

2 Density estimates

- 2.1 Density estimates for sites with planning permission are based on the approved net residential density in LDD.
- 2.2 Density estimates for allocated and potential sites will be derived from the London Plan density matrix, with estimates set to the top of the relevant density range in town centres and higher assumptions applied in opportunity areas to reflect density trends and their strategic importance in terms of housing delivery.
- 2.3 The London Plan density matrix is based on the setting\character of an area and the Public Transport Accessibility Level (PTAL). To reflect this, the system will use GIS data for PTAL and character settings in order to assign density estimates to sites. The following maps will be used in the SHLAA:
- PTAL maps 2015, 2021, 2031 which reflect committed transport schemes – therefore the assumed phasing and delivery timescales for a site will impact the PTAL and density assumed
 - An updated character settings map prepared by ARUP as part of the GLA’s density research. This relies on 2011 census data and updated town centre boundaries. A 1km ‘networked buffer’ from town centre boundaries is applied in the map to reflect actual walking distances. The criteria and thresholds used to define settings on the character map are set out below:

| Setting | Attributes | |
|---------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------|
| | Housing stock ⁴ | Proximity to town centre |
| Central | >75% flats | 1km of International, Metropolitan or Major town centre boundary |
| Urban | >75% flats and terraced housing | 1km of District town centre boundary |
| Suburban | <75% flats and terraced housing | All other areas |
| An area only needs to fulfil one of these criteria to be classified as ‘central’, ‘urban’ or ‘suburban’ | | |

- 2.4 The London Plan density matrix sets out density ranges for different PTAL levels (0 to 1; 2 to 3; and 4 to 6) and character settings (suburban, urban and central) and sub-divides broad ranges into those based on habitable rooms per unit. The matrix is shown in Appendix A.
- 2.5 Default density assumptions proposed for the SHLAA are set out below, which would apply to all large sites depending on their location, character setting and PTAL. As density assumptions are based on PTAL levels, the density estimates will depend on the phasing of a site and will reflect how PTAL levels change over time, as committed transport schemes are delivered – eg Crossrail 1. For example, housing capacity likely to come forward in phase 2 and 3 of the SHLAA (2021-2029) will be based on the PTAL

map for 2021; capacity in phase 4 (2029 to 2034) will be based on the PTAL map for 2031. Phasing periods are set out in Table 10 (page17).

Standard density assumptions

2.6 Standard density assumptions in the SHLAA are based on the high point in the 3.1 to 3.7 habitable room per unit range in the matrix, taking into account PTAL and character setting (see Table 1). This seeks to ensure that the SHLAA estimates reflect the need to optimise development whilst allowing for a broad range of housing typologies appropriate to the location and a range of unit sizes including family sized homes. It also ensures that the SHLAA does not under-estimate potential housing capacity, taking into account trends in residential densities on large sites.

Table 1 - Standard density assumptions

| PTAL | 0 - 1 | 2 - 3 | 4 - 6 |
|-----------------|-------|-------|-------|
| Suburban | 65 | 80 | 115 |
| Urban | 80 | 145 | 225 |
| Central | 100 | 210 | 355 |



Density assumptions in town centres

2.7 In town centres, densities are set at the top of the relevant density range (see Table 2). All town centres are considered to be either urban or central, reflecting the notes to density matrix in the London Plan (see Appendix A).

Table 2 - Town centre density assumptions

| PTAL | 0 - 1 | 2 - 3 | 4 - 6 |
|-----------------|-------|-------|-------|
| Suburban | - | - | - |
| Urban | 95 | 170 | 260 |
| Central | 110 | 240 | 405 |



Density assumptions in opportunity areas

2.8 Different density assumptions are applied in opportunity areas to reflect their importance in terms of the delivery of new development in London and to ensure that the SHLAA does not under-estimate the potential housing capacity in these locations (see Table 3). These assumptions are set out below and assume that:

- sites with suburban settings could potentially be developed at urban densities
- sites with urban settings could potentially be developed at central densities
- sites with central settings could potentially be developed at central+ densities. These are set above the relevant maximum range in the density matrix

Table 3 - Opportunity area density assumptions

| PTAL | 0 - 1 | 2 - 3 | 4 - 6 |
|-----------------|-------|-------|-------|
| Suburban | 80 | 145 | 225 |
| Urban | 100 | 210 | 355 |
| Central | 250 | 350 | 450 |



2.9 These density estimates allow for a broad range of housing typologies and sizes to be provided and are set below the average density of approvals on large sites in opportunity areas in order to not over-estimate potential densities. These trends are shown in Table 4 below.

Table 4 - Average density trends in opportunity areas - approved large sites (0.25 hectares and more) between 2004-2016

| PTAL | 0 - 1 | 2 - 3 | 4 - 6 |
|-----------------|-------|-------|-------|
| Suburban | 83 | 204 | 337 |
| Urban | 150 | 226 | 329 |
| Central | 406 | 363 | 453 |

2.10 Where sites are in town centres as well as opportunity areas the opportunity area density will apply.

Borough amendments to density estimates

2.11 Boroughs will be able to adjust the density assumptions on all potential and allocated sites where they consider the density should be different to the system estimate. Changes in density would normally only be where boroughs have undertaken a detailed site appraisal or design-led exercise to establish a more appropriate density estimate for a site, or where boroughs are involved in emerging masterplanning work or pre-application discussions with a landowner or developer on a site, which would suggest the use of an alternative density assumption.

- 2.12 Reductions in density estimates would need to be clearly justified in terms of specific sites constraints (eg an identified heritage asset) which would reduce the density likely to be achieved on site and could not be mitigated or resolved through good design, eg stepping down building heights along the edge of a site. Local infrastructure capacity is considered through the constraint testing process (see delivery constraints), so will not be used as a reason for reducing the density estimate for a site.
- 2.13 In the 2013 SHLAA around a third of sites had their initial densities amended, with 70% reduced and 30% increased. In the next SHLAA, changes in density will be scrutinised closely by GLA officers, taking into account trends in approvals and completions on broadly comparable sites/locations in London.
- 2.14 Boroughs would also be able to amend the land use mix assumed on a site, which will reduce the net residential site area accordingly. However, boroughs will not be able to change the character settings in the system which will remain fixed to ensure consistency of the underlying data in the system.

OAPF capacity studies

- 2.15 To support a number of Opportunity Area Planning Frameworks (OAPFs) the GLA in partnership with the relevant boroughs has undertaken more detailed design-led development capacity studies. These typically identify the potential for development to come forward at higher densities than the estimates relied on in the SHLAA. GLA officers will share these findings with relevant boroughs to ensure that the density estimates and land use assumptions feed into the SHLAA and to align the study with OAPFs being prepared. Boroughs will be encouraged to amend the default density assumptions in the SHLAA so that they reflect those being used in OAPF development capacity studies.

LSE density model update

- 2.16 The GLA is currently working with the London School of Economics (LSE) and Transport for London (TfL) to further develop a model for assessing potential residential densities across London. This model considers various characteristics⁵ to estimate site density having statistically analysed the significance of each characteristic in influencing density using completed developments between 2008 and 2015. Whilst the model is not currently operational for use in the SHLAA, it may be used to benchmark or scenario test the housing capacity assumptions following the site assessment process.

⁵ PTAL, job accessibility, distance to centre, population density, suburban character, central character, opportunity/intensification areas, town centres.

3 Constraints testing process - ‘potential sites’

- 3.1 The methodology for assessing housing capacity on ‘potential’ sites in the SHLAA is specifically tailored to suit London’s highly pressurised and unpredictable land market where 98% of housing is delivered on brownfield sites and where significant amounts of future capacity comes forward on ‘potential’ sites which are currently in other active land uses. On aggregate, this approach provides a robust method of estimating potential housing output in London that is more sophisticated than traditional ‘windfall’ estimates based on trends in completions. This is because it takes into account potential capacity but also considers the various site specific planning, environmental and delivery constraints and how these may affect the rate of housing completions without assuming every individual site will come forward for development.
- 3.2 The overall amount of achievable and deliverable housing capacity on ‘potential’ large sites will be estimated using a probability based approach. This assigns a probability score (%) to each potential site based on the number and severity of identified planning policy, environmental and delivery constraints. These are set out below in Table 5:

Table 5 – constraint categories

| | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Planning policy constraints | <ul style="list-style-type: none"> • Designated open space • Strategic Industrial Land (SIL) • Locally Significant Industrial Locations (LSILs) • Other protected industrial/employment sites • Safeguarded Wharves |
| Environmental Constraints | <ul style="list-style-type: none"> • Flood Risk • Aircraft noise pollution • Health and Safety Executive consultation zones • Pylons |
| Delivery constraints | <ul style="list-style-type: none"> • Land ownership • Local Infrastructure • Contamination |

Probability based approach

- 3.3 The same “constraints model” approach as in previous SHLAA studies will be used to provide an estimate of housing capacity on potential sites. This constraints model works in the following way:
- sites are assigned a notional density, based on the residential site area and a density estimate
 - where a site is expected to be mixed use, boroughs can adjust the land use assumptions for each site, which amends the net residential site area
 - the system then assigns a probability estimate of a site coming forwards for development based on the number and severity of policy, environmental and delivery constraints affecting it. These constraints are set out in Table 5 and are identified using GIS data and local knowledge through the site assessment process.
 - the lowest percentage probability score across the three constraint categories – planning policy, environmental and delivery constraints – is applied to the notional

density in order to provide a 'constrained housing capacity estimate' for the site in question. The probability score also impacts the assumed phasing period for a site.

- For example, if a site has a notional capacity of 100 units and an 80% probability of coming forward for development, the constrained housing capacity is assumed to be 80 units.



Illustrative example:



Allocated sites

- 3.4 In previous SHLAAs, allocated sites were also subject to the same constraint testing process as 'potential sites', with probability based constrained housing capacity estimates provided. However, this under-estimates the potential for housing delivery on these sites and does not reflect their formal planning status as sites that are considered suitable for residential and mixed use development. In the 2017 SHLAA it is proposed that housing capacity on allocated sites is based on notional housing capacity estimates in order to better reflect the higher likelihood of housing being delivered and also to ensure that the most realistic level of capacity is assumed. This would apply to all sites allocated for residential or mixed use development in an adopted DPD or informally identified in an SPD.
- 3.5 Constraints affecting allocated sites will be identified in the SHLAA system using GIS information and local knowledge and the probability scores would be recorded in order to inform the phasing assumptions used in the system. Boroughs will be able to adjust the land use mix and phasing assumptions for each site. Where allocations are for alternative uses, eg school sites, boroughs will need to amend the land uses accordingly.

Planning policy constraints

3.6 The approach to planning policy constraints is set out below in Table 6, with further detail provided in the supporting text below. Assumptions on industrial land will need to be monitored and potentially revisited in order to reconcile SHLAA with the approach taken in the London Plan in terms of industrial land release, taking into account the findings of the industrial demand study. However, as a starting point for the assessment boroughs should follow the approach outlined below in Table 6.

Table 6 – Planning policy constraints

| Ref | Constraint | Source | Categories | Default probability assumption | Borough editable |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------|------------|--------------------------------|------------------|
| 1 | Designated open space | GIS constraint layer | Yes or no | 0% probability - unsuitable | Yes |
| 2 | Strategic industrial location (SIL) | GIS constraint layer | Yes or no | 0% probability – unsuitable † | Yes |
| 3 | Safeguarded Wharves | GIS constraint layer | Yes or no | 0% probability - unsuitable | Yes |
| 4 | Locally Significant Industrial Sites (LSIS) designated in a Local Plan | GIS constraint layer | Restricted | 40% probability | Yes |
| | | | Limited | 50% probability | |
| | | | Managed | 60% probability | |
| 5 | Other protected industrial/employment | GIS constraint layer | Restricted | 45% probability | Yes |
| | | | Limited | 55% probability | |
| | | | Managed | 60% probability | |
| <p>† All sites earmarked for release in the industrial supply study should be assessed as potential sites as a starting point (see paragraph 3.14 and Figure 1). This overall quantum of industrial release may need to be revisited at a later date following the demand study.</p> <p>‡ Borough classifications for industrial land release – restricted, limited or managed – will be updated once the GLA Industrial Demand Study is finalised.</p> | | | | | |

Designated Open space

3.7 The Mayor has been clear that he wants to protect the Green Belt and other designated green spaces in London⁶. All designated open space will be classified as ‘unsuitable’ by the system and deemed to have a zero per cent probability for development. This includes the following designations:

- Green Belt
- Metropolitan Open Land
- Sites of Special Nature Conservation Interest and Sites of Special Scientific interest
- Other protected public or private open space identified on a borough proposals map (eg parks and squares)

⁶ Mayor of London, A City for all Londoners, page 19

- 3.8 Boroughs will also be able to classify other protected public or private open space identified on a borough proposal map as unsuitable (0% probability) where the system has not identified in the GLA's open space constraint layers. Where boroughs are considering de-designating open space in the system this would need to be discussed with GLA officers as part of the SHLAA process, taking into account the strong strategic presumption against development on these types of sites.

Designated industrial land

- 3.9 As a starting point for the SHLAA study, the approach to industrial land in the SHLAA broadly follows the approach taken in the previous SHLAA and is summarised below.
- 3.10 Strategic Industrial Land (SIL) will be automatically classified as unsuitable (0% probability) by the system. However, boroughs will be given the option to change this default assumption on a case by case basis. Where sites are considered as potential sites boroughs would be able make provision for employment uses as part of the assumed land use mix for a site.
- 3.11 For locally significant industrial sites (LSIS), the SHLAA methodology assigns a notional probability estimate which is based on borough classifications for industrial land release in the London Plan (restricted, limited and managed):
- sites within a 'restricted' borough are assigned a lower probability of 40%
 - sites with a 'limited' borough are assigned a probability of 50%
 - sites with a 'managed' borough are assigned an increased probability of 60%
- 3.12 This approach reflects the fact that the stock of locally designated industrial sites has reduced at a higher rate (23%) compared to SIL (5%). However, boroughs will be able to alter this notional probability assumption, for example where they consider that LSIS sites should be protected based on local evidence (eg an up to date Employment Land Review); or where they consider that LSIS sites should be released for residential or mixed use development. **These default percentage probability assumptions are a starting point for the SHLAA study and may need to be revisited following the GLA's Industrial Land Demand Study.**
- 3.13 A broadly similar approach is taken for other non-designated industrial land protected by borough Local Plan policies, with probability estimates 5% higher in 'restricted' and 'limited' boroughs and the same estimate for 'managed' boroughs (see Table 6).

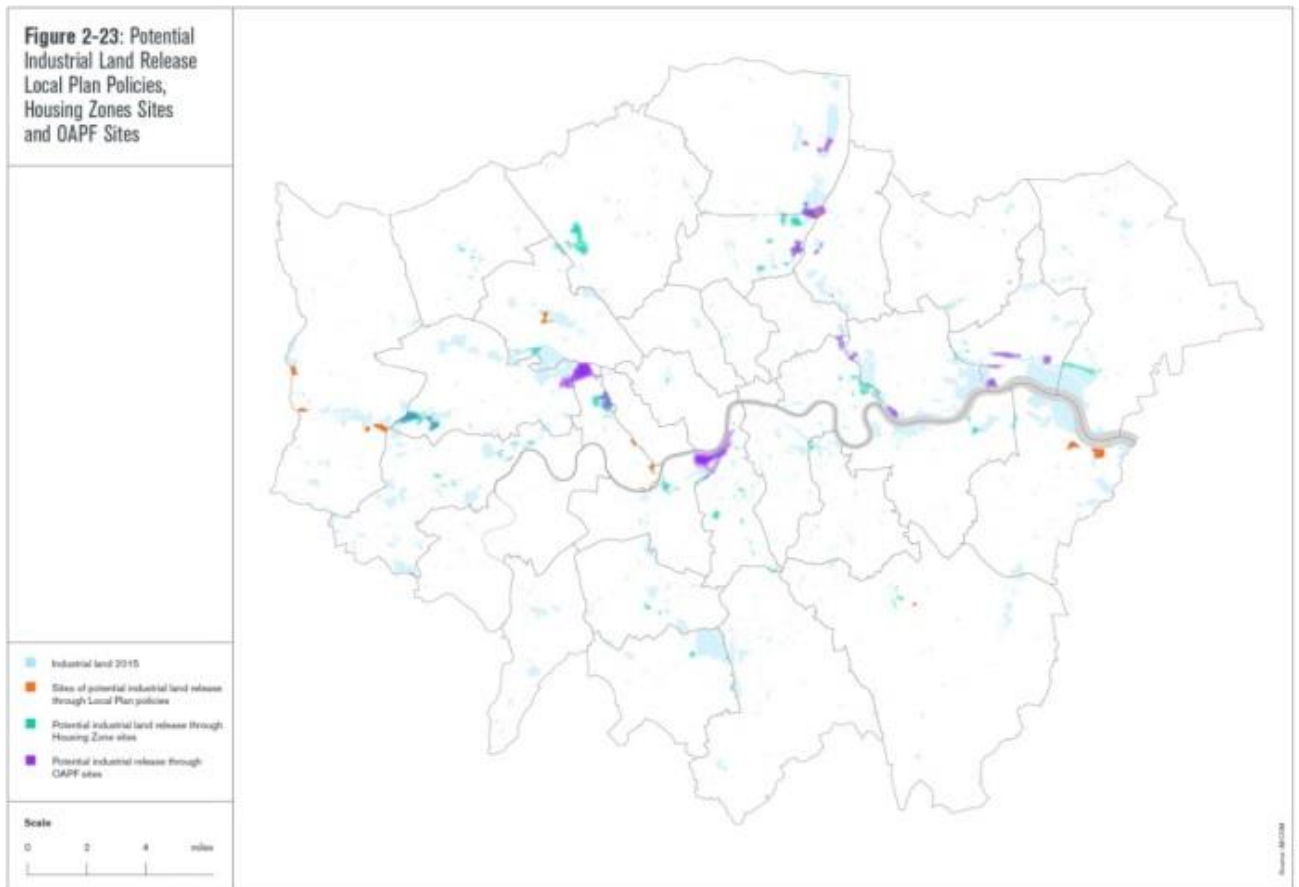
Altering default capacity assumptions on LSIS sites

- 3.13a Where boroughs consider that LSIS sites should be safeguarded up to 2041 would not come forwards for mixed use development during the SHLAA timescales they will be able to amend the housing capacity assumptions in the system. This will need to be justified based on an up by an up to date local employment land study. In order to amend the housing capacity assumed on these sites, a borough will need to amend the land use assumptions by either amending the phasing (eg assuming housing is not deliverable during phases 1-4 of the SHLAA) or by setting the housing to a lower or zero level in the mixed use section of the site assessment area. This is explained in the guidance notes. A similar approach may be taken on other protected industrial/employment sites. As with LSIS sites this will need to be robustly evidenced and will be scrutinised by GLA officers.

Industrial sites already earmarked for release

- 3.14 All designated and non-designated industrial sites that (including SIL and LSIS sites) that are earmarked for release in Local Plans, Opportunity Area Planning Frameworks (OAPFs) and Housing Zones should be classified as 'potential sites' so that boroughs fully assess the other site constraints and likely phasing of development, as well as the potential density and land use mix. These sites were mapped as part of the GLA Industrial Supply Study based on information available in Autumn 2015 and are shown in Figure 1. The SHLAA system will automatically classify these sites as potential sites. Figure 1 will be updated to reflect emerging proposals in the London Riverside OAPF and Old Kent Road AAP. **This overall quantum of industrial release may need to be revisited at a later date depending on the findings of the industrial demand study and the approach of the London Plan.**

Figure 1 – Potential industrial land release in the development pipeline, Local Plans, OAPFs, Housing Zones



Safeguarded wharves

- 3.15 Safeguarded wharves will automatically be assigned a zero probability to reflect their planning status in the current London Plan. Site specific assumptions in the SHLAA will be revisited if necessary to reflect any emerging amendments to London Plan policy. Where there is already an agreed plan for the consolidation and relocation of a safeguarded wharf use (eg through an OAPF or Local Plan) boroughs will be able to amend these default assumptions and consider the wharf in question as a potential site.

Environmental constraints

- 3.16 GIS layers will also be used to identify environmental constraints including flood risk, aircraft noise pollution contours, pylons and Health and Safety Executive (HSE) consultation zones. These constraints are classified as low, medium or high. The impact of each constraint category on the site probability is shown in Table 7 below.
- 3.17 Individual environmental constraint scores combine to provide an overall cumulative environmental constraint estimate. For example, if a site is classified as 'medium' for flood risk, and aircraft noise and 'low' for pylons and HSE consultation zones, then the site's overall environmental constraint probability estimate will be 80%.

Table 7 – Environmental constraints

| Ref | Constraint | Source | Categories | Impact on probability | Borough editable |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|------------------|
| 6 | Flood risk | GIS constraint layer and borough knowledge from SFRAs | Low – all other areas | No impact on probability | Yes |
| | | | Medium - Areas in Zone 3 with flood defences | Reduces probability by 5% | |
| | | | High - areas in Zone 3 without flood defences | Reduces probability by 10% | |
| | | | Unsuitable - Zone 3b | Site considered unsuitable (0% probability) | |
| 7 | Aircraft noise pollution | GIS constraint layer | Low - below 63 Db | No impact on probability | Yes |
| | | | Medium - above 63 Db | Reduces probability by 10% | |
| | | | High - above 69 Db | Site considered unsuitable (0% probability) | |
| 8 | Pylons / High voltage power lines | GIS constraint layer | Low - none present | No impact on probability | Yes |
| | | | Medium - site intersects with pylon | Reduces probability by 10% | |
| 9 | Health and Safety Executive consultation zones | GIS constraint layer | Low – No HSE Zone or Outer Zone | No impact on probability | Yes |
| | | | Medium – Middle Zone | Reduces probability by 10% | |
| | | | High – Inner Zone | Site considered unsuitable (0% probability) † | |
| † Where Gas holder sites have been submitted through Call for sites by landowners these sites would not be considered unsuitable and should be assessed as potential sites. This effectively 'turns off' HSE constraints on these sites (see para 3.19-20). | | | | | |

- 3.18 Low and medium flood risk categories are based on the Environment Agency flood risk data for rivers and sea. Areas in high risk - Zone 3b – have been collated from borough level Strategic Flood Risk Assessments (SFRAs). Boroughs are encouraged to review this data and amend site constraints where they have undertaken an SFRA and the level of flood risk is shown to differ from that presented in the SHLAA constraint layer. Site boundaries can also be amended where necessary.
- 3.19 HSE consultation zones cover gasholders and hazardous installations. The HSE’s planning advice⁷ does not in principle advise against residential development in the outer and middle zones but does advise against residential development in principle within inner zones, so this is reflected in the probability assumptions in Table 7. However, gasholder sites can also be remediated to enable development and National Grid has a programme of remediating and regenerating gas holders to enable development.
- 3.20 Twenty gas holder sites have been submitted through the call for sites by National Grid and St William, which are considered developable in the short to long-term period by the landowners. HSE zone constraints will be ‘turned off’ where sites have been put forwards by National Grid/St William in the Call for Sites. Boroughs will then need to assess these sites as potential sites and consider the likely phasing and lead-in times that should be applied, taking into account the information provided by landowners through their Call for Sites submission.

Delivery constraints

- 3.21 For all potential sites boroughs will be able to use their local knowledge and Land Registry data to identify potential delivery constraints. These include land ownership, local infrastructure and contamination. Boroughs will be able to classify constraints as either low, medium or high. Low level constraints have no impact on site probability. Medium constraints reduce the probability of a site being developed by 10%. High level constraints reduce the probability by 30%. Boroughs can also classify sites as low probability where there are substantial land ownership issues that are unlikely to be resolved before 2041.

Table 8 – Delivery constraints

| Ref | Constraint | Source | Categories | Impact on probability |
|-----|----------------------|--------------------------------------------------|------------|----------------------------|
| 10 | Land ownership | 2016 Land Registry Data | Low | No impact on probability |
| | | | Medium | Reduces probability by 10% |
| | | | High | Reduces probability by 30% |
| 11 | Local infrastructure | Borough knowledge, Infrastructure Delivery Plans | Low | No impact on probability |
| | | | Medium | Reduces probability by 10% |
| | | | High | Reduces probability by 20% |

⁷ Health and safety executive, planning methodology, decision matrix - <http://www.hse.gov.uk/landuseplanning/methodology.htm>

| | | | | |
|----|---------------|-------------------|--------|----------------------------|
| 12 | Contamination | Borough knowledge | Low | No impact on probability |
| | | | Medium | Reduces probability by 10% |

- 3.22 The system will be automatically set the constraint level for each category as low by default and the expectation is that boroughs will need to amend this where necessary to reflect known site constraints. The option to select high level constraints will only apply to land ownership as this constraint is considered to have a more significant impact on the probability and deliverability of development, whereas local infrastructure and contamination issues can be more easily mitigated through the delivery of development and enabling works on site.
- 3.23 As with policy and environmental constraints, individual delivery constraint scores are combined to provide a cumulative probability score. For example, if a site scores 'high' for land ownership, 'medium' for local infrastructure and 'low' for contamination its overall probability score for delivery constraints will be 70%.
- 3.24 Boroughs will not be able to set the constraint level to 'unsuitable' (0% probability) for any delivery constraints as they are all considered to be capable of being addressed during the course of the SHLAA period (2016 to 2041). As with all other sites, boroughs will be able to amend the phasing assumptions to reflect the lead-in times considered necessary in order to address identified delivery constraints. These assumptions will be scrutinised by the GLA.
- 3.25 In the previous SHLAA 400 sites were classified as unsuitable due to ownership, a quarter of which were located in town centres. This potentially underestimates the potential for mixed use development in these key growth locations. In addition, a further 30 sites were classified as unsuitable due to infrastructure and contamination constraints.
- 3.26 The benefit of following the above approach is that delivery constraints are registered and tracked and, following the SHLAA, boroughs and the GLA can further analyse the particular constraints and consider what interventions or mechanisms might be conducive and effective in order to bring a site forward or accelerate its development (eg Housing Zone designation and interventions, CPO).

Overcoming constraints

- 3.27 National Planning Practice Guidance on undertaking SHLAAs states that where constraints have been identified, local planning authorities should consider what action would be required to address or overcome these constraints and what impact this might have on housing delivery⁸. For example, this could include resolving fragmented land ownership, investing in new infrastructure, remediating contaminated land or reviewing and amending planning policy designations.
- 3.28 To address this requirement, the SHLAA system will prompt boroughs to consider whether it is possible to overcome any identified planning policy, environmental or delivery constraint, drawing on the list of mitigation measures/options outlined below. Where boroughs consider this would be achievable and select this option, the system 'turns off' the selected constraint. Selecting this option will therefore reset the overall

⁸ DCLG, Planning Practice Guidance, Paragraph: 022 Reference ID: 3-022-20140306

probability score for the site in question. Alternatively, boroughs may consider it more suitable to amend a site boundary, so that it does not include a particular constraint where the overlap with this constraint is only on part of the site.

Table 9 – Potential options to overcome constraints

| Policy Constraints | Potential mitigation/avoidance measures |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategic Employment Location (SIL) | <ul style="list-style-type: none"> – De-designate SIL (where justified by other circumstances) – Allow mixed-use development, including employment provision and office or industrial workspace – Re-provide SIL elsewhere through a land swap |
| Locally significant industrial site (LSIL) | <ul style="list-style-type: none"> – De designate LSIL (where justified by other circumstances) – Allow mixed-use development |
| Other Protected Industrial Site | <ul style="list-style-type: none"> – De designate protected site (where justified by other circumstances) – Allow mixed-use development |
| Environmental Constraints | Potential mitigation/avoidance measures |
| Aircraft Noise Pollution | <ul style="list-style-type: none"> – Design mitigation measures for proposed residential development (eg. assume higher levels of sound insulation on all units) |
| Flood Risk | <ul style="list-style-type: none"> – Provide set-back on-site / develop only part of the site – Provide effective flood mitigation measures on-site, eg SUDs – Provide less sensitive land uses at ground level (eg commercial, parking) and reduce density – Provide other off-site flood mitigation measures to improve resilience to flooding |
| Pylons | <ul style="list-style-type: none"> – Pylon under grounding (funded by development) – Pylon under grounding (not able to be funded by development) – Pylon re-routing |
| Health and Safety Consultation Zones | <ul style="list-style-type: none"> – Develop part of site and reduce site boundary or net residential area – Remediate site |
| Delivery Constraints | Potential mitigation/avoidance measures |
| Ownership | <ul style="list-style-type: none"> – Fragmented land ownership assembled / acquired by landowner/developer over time – Compulsory purchase of site – Acquisition of site by developer and the relocation of existing business or land use – Joint venture between existing business and developer to accommodate mixed use development and housing |
| Local Infrastructure | <ul style="list-style-type: none"> – Provide enhanced public transport infrastructure |

| | |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> – Minor changes to local road network – Provide additional utilities services – Require contribution to social infrastructure provision |
| Contamination | <ul style="list-style-type: none"> – Decontaminate land (funded by development) – Decontaminate land (may require funding) – Develop only part of site |

Phasing of sites

3.29 The phasing of a site is informed by the status of development (approval, allocated, Potential, etc), its size and type and judgements around the feasibility and viability of the site. This study is divided into five phases by financial year, these are shown below on Table 10. Phase 1 is the preliminary phase; from the date of the study to the year the new London Plan is expected to be adopted (2019), phases 2, 3 and 4 are five year phases, with the final phase a seven year phase to take the assessment to the end of the plan period.

Table 10 – SHLAA phasing periods

| | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 |
|---------------|----------------|----------------|----------------|----------------|----------------|
| Start | April 2017 | April 2019 | April 2024 | April 2029 | April 2034 |
| Finish | March 2019 | March 2024 | March 2029 | March 2034 | March 2041 |
| Years | 2 | 5 | 5 | 5 | 7 |

3.30 The system will generate default phasing based on the status of an individual site and its probability for development. Boroughs will be asked to check the phasing of every site (including approvals) to ensure that realistic but ambitious phasing is assumed. Boroughs will be able to refine default phasing assumptions where necessary to reflect anticipated lead-in times and build out rates, drawing on local knowledge. As a starting point, the following system defaults are suggested:

- sites with planning permission on which development has started are allocated to phase 1 (2016 to 2019)
- all other sites with planning permission but where development has not started are allocated to phase 2 (2019 to 2024)
- Potential/allocated sites that have a 100% probability are allocated to phase 2 (2019 to 2024)
- Potential/allocated sites with probability of less than 100% but greater or equal to 60% are allocated to phase 3 (2024 to 2029)
- Potential/allocated sites with probability less than 60% are split between phase 3 and 4 (2024 to 2034)
- Capacity on 'low probability' sites is split between phases 3, 4 and 5 (2024 to 2041)

3.31 In addition to this and to ensure capacity from individual large sites is spread realistically across phasing periods, the system will set defaults for the maximum amount of housing capacity that can be assigned to each phasing period from an individual large site. These 'caps' are set at an optimistic level for very large sites and are expected to provide an indicative guide and starting point. Boroughs will be able to amend phasing assumptions based on local knowledge.

| Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 |
|---------|---------|---------|---------|---------|
| 2,000 | 3,000 | 3,000 | 3,000 | 4,000 |

Housing targets

- 3.32 Housing targets in the London Plan have historically been set as minimum 10 year targets, with annual monitoring targets provided. Boroughs are expected to roll forward their annual monitoring targets beyond this period (London Plan Policy 3.3D). However, the SHLAA study will explore the scope for the London Plan to provide longer 15 year minimum targets which would better align with the typical horizons for Local Plan.
- 3.33 It will also explore whether it would be more appropriate for annual monitoring targets to be based on five year phasing periods (see below), with average annual figures provided for each phase, rather than a 10 year average. This more trajectory based approach might better reflect the phasing and delivery of sites and ensure that the Government’s proposed ‘delivery test’⁹ is applied in a fair and reasonable manner in terms of annual housing delivery targets.
- 3.33a Clarification – no decision has yet been made in terms of the housing targets in the new London Plan and this matter will be the subject of further discussion with boroughs and formal public consultation, taking into account the findings of the SHLAA.

| Phase 2 | Phase 3 | Phase 4 |
|-----------------------|-----------------------|-----------------------|
| 2019 - 2024 | 2024 - 2029 | 2029 - 2034 |
| Annual average target | Annual average target | Annual average target |

Excluded sites

- 3.34 Only those potential sites considered to have a zero chance of coming forward for housing development during the plan period. To be excluded, sites will need to fall into the following categories:
1. New build housing where additional housing development is improbable during the plan period.
 2. Recently completed new build development in the following uses: retail; office; industrial; storage and distribution; hotel; care home; hospital; education; or assembly and leisure.
 3. Safeguarded office sites in defined commercial core areas within the City of London and north of Isle of Dogs.
 4. Safeguarded high value business parks/office sites
 5. The site is an area of private/mixed tenure housing in multiple ownership with no known plans for redevelopment

⁹ See – NPPF consultation 2015 (page 14) - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/488276/151207_Consultation_document.pdf and The Spending Review and Autumn Statement 2015 (HM Treasury) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/479749/52229_Blue_Book_PU1_865_Web_Accessible.pdf (page 41)

6. Primary and secondary schools
 7. The site includes a listed building or other designated heritage asset where development or intensification is highly unlikely due to harm to or loss of heritage asset
 8. The site is in strategic operational use for transport, waste or utilities infrastructure which are expected to continue to be in that use over the plan period so redevelopment is considered improbable (note: this should not include call for sites submitted by landowners).
 9. Strategic cultural/tourist venues or civic buildings which have a zero chance of coming forward for redevelopment or change of use during the Plan period to 2041 – further guidance on this criteria will be set out in the SHLAA guidance notes
- 3.35 Where boroughs have a programme in place for delivering housing on school sites these sites should be included in the SHLAA.
- 3.35a Exclusion reason 8 is for sites that contain strategic infrastructure such as airports, railways, sewerage treatment works, waste sites and associated depots that are in operational use and have no potential of becoming redundant or being relocated over the plan period. A substantial number of operational infrastructure sites have been submitted by public sector land owners and utility providers through the Call for Sites. This includes Transport for London, Network Rail, Thames Water, NHS Property Services and other Government departments. These sites should not be excluded by boroughs based on the fact that they are currently in operational infrastructure use and should be considered as ‘potential’ sites.

Low probability sites

- 3.36 Low probability status was added to the 2013 SHLAA to address the number of potential sites being excluded from previous SHLAA studies, but which should have been given a housing potential as evidence shows that they do come forward for housing in some circumstances.
- 3.37 Where boroughs chose to classify a site as ‘low probability’ it is considered to have an 8% probability of delivering housing, (apart from those marked 5% and 10% below). This probability estimate was established following a review of the number of planning permissions granted on sites excluded in the 2004 SHLAA. A more recent review of sites excluded in the 2009 SHLAA has shown that this estimate continues to provide an appropriate assumption based on planning approvals (2009-2015), even where school sites are removed.
- 3.38 For boroughs to re-classify a potential site as ‘low probability’, this site in question must meet the criteria below:
1. High value retail, leisure, commercial development where there is a low probability of additional housing development before 2041
 2. Low probability office site within the CAZ, core areas of the City Fringe Opportunity Area or an Article 4 Direction area (5% probability)
 3. Low probability office site where permitted development rights do currently apply (10% probability)
 4. Further education site or hospital with no planned redevelopment before 2041

5. Social housing estate with no planned intensification programme up to 2041
 6. Social infrastructure or community use where there is a low probability of additional housing delivery before 2041
 7. Substantial land ownership issues mean that there is a low probability of redevelopment before 2041
 8. Other reasons where necessary – these will be scrutinised by the GLA.
- 3.39 Capacity from low probability sites is allocated to the later phases of the SHLAA – phases 3, 4 and 5. For the new SHLAA this would mean this capacity is spread between the period 2024 to 2041.
- 3.40 Through the Call for Sites a number of large out of town retail sites were put forward by landowners, eg supermarkets. Where a site in one of these uses is suitable for housing and has been put forward as part of the call for sites it should be considered as a potential site and not a low probability site, given that the landowner has expressed an interest in accommodating additional housing/mixed use development on the site in question.
- 3.41 Other retail, leisure and office sites should also not be automatically assigned with ‘low probability’ status unless it is clear that the nature of the existing business/land use means that there is a low probability of housing being delivered during the period of the London Plan. Where boroughs consider that housing could be accommodated on sites during the plan period (2019-2041) they should assess sites as ‘potential sites’ and adjust the phasing accordingly.

Town centres

- 3.42 Town Centre Health Check data, particularly that showing the level of vacant or surplus retail/commercial floorspace and other indicators, eg heritage should be used by boroughs to provide an indication of where additional residential and mixed use development might be accommodated. Through the site assessment process, the GLA will work with relevant boroughs to ensure that the potential sites have been identified and the long-term capacity for development has been proactively considered.

Offices

- 3.43 This section summarises the approach to offices in the SHLAA. Offices will be automatically considered as potential sites in the SHLAA system but boroughs will be allowed to exclude the following types of office sites:
- offices in tightly defined commercial core areas of the City and Canary Wharf – this precise area will be agreed with the relevant boroughs prior to the SHLAA being undertaken
 - recently completed offices (since 2010)
 - offices in high value business parks (eg Chiswick, Bedfont Lakes)
- 3.44 For offices in other locations boroughs will be given the option to assign ‘low probability’ status to these sites. The probability assumption used will vary depending on a site’s location:
- within the CAZ, core areas of the City Fringe OAPF, within an adopted Article 4 Direction area a lower probability assumption of 5% will apply – this reflects the stronger planning protections for offices which apply in these locations.

- outside these locations a higher 10% probability is assumed – this reflects permitted development rights (which have been made permanent) and higher numbers residential units approved on office sites since these rights were introduced.
- 3.45 Boroughs should consider office sites as potential sites if they consider that they are likely to come forward as housing during the Plan period. Sites should only be assigned low probability status where a borough considers that the probability of housing being delivered prior to 2041 is low. Existing approvals for office to residential development will be used as approved sites where these are 0.25 hectares and more in size.
- 3.46 Where there is robust evidence of demand and where office sites would be safeguarded and therefore not likely to come forward for development or change of use between now and 2041 boroughs may categorise these as excluded. This can be done using excluded reasons 2, 3 or 4 (depending on the location and age of the office building in question). Where excluded reason 4 is used boroughs will need to provide notes to justify why zero probability is being assumed.

Estate regeneration schemes

- 3.46 Boroughs are able to include large sites included in an estate regeneration programme. As these sites include existing residential dwellings, the SHLAA system allows boroughs to amend net additional housing figures included in the system and by phasing period in order to take into account demolitions and build out rates over time.

Emerging opportunity areas

- 3.47 In addition to the 38 opportunity areas formally identified in the London Plan, a number of emerging opportunity areas being considered and are identified in ‘a City for all Londoners’¹¹ These include:
- Greenford
 - Hayes - already within Heathrow OA
 - the Golden Mile/Great West Corridor
 - Kingston (three broad areas including Kingston town centre/Norbiton/New Malden, Tolworth and Chessington)
 - Romford
 - Wood Green / Haringey Heartlands
 - Clapham Junction
 - New Southgate
 - Wimbledon – Croydon Brown Belt
- 3.48 As with many existing opportunity areas, a number of these areas are expected to deliver significant employment growth, alongside housing, and this should be recognised in the site specific land use assumptions in the SHLAA. For the SHLAA these locations are all be considered as emerging opportunity areas for the purpose of estimating residential densities. These densities can be edited by boroughs. The boundaries for these emerging opportunity areas are subject to change and this will be reflected where appropriate through the site assessments and any final capacity assumptions.

¹¹ Mayor of London, A City for all Londoners, page 25, Map 3

Gypsy and traveller accommodation

- 3.49 Through the SHLAA system and individual site assessments boroughs are able to and encouraged to identify sites suitable for gypsy and traveller accommodation, or parcels of large sites in order to take account of the range of housing needs and reflect London Plan and National planning policy and guidance. This can be done by editing the density estimate for a site and providing notes to that effect.

4 Scenario testing

- 4.1 Given the likelihood that the next SHMA will identify a higher level of housing need than the previous 2013 SHMA study, scenario testing is likely to play an important role in providing the evidence for and testing various policy options for meeting the housing need identified. Unlike during the Further Alterations to the London Plan, the new London Plan is a Full Review and provides the opportunity to test a wider range of potential policy scenarios and options in terms of meeting housing need and balancing this requirement against other important planning policy objectives, such as maintaining the provision of employment land.
- 4.2 In addition, the delivery of key items of transport infrastructure, for example in relation to Crossrail 2 and the Bakerloo Line Extension, will clearly have a significant impact on the delivery, density and phasing of development, as well as land use more generally. The associated housing and employment growth in these key transport corridors is likely to feature as a key policy area for the next London Plan.
- 4.3 Scenario testing will therefore be undertaken with Transport for London and relevant boroughs in order to assess the impact of these schemes in helping to meet housing need through unlocking additional supply. This will also be important in supporting the business case of individual schemes. Such schemes include:
- Crossrail 2
 - The Bakerloo Line extension
 - the extension of Crossrail 1 from Abbey Wood
 - the proposed Metroisation of south London suburban rail network (improved suburban rail services)
 - DLR extension to Thamesmead
 - further extension of the proposed Bakerloo Line extension to Hayes
 - Sutton Tramlink Extensions
- 4.4 The final number of schemes examined will depend on resources and the likelihood of schemes being delivered during the London Plan timescales. The methodology and approach to be taken on these transport corridors will need to be explored in more detail with relevant boroughs during the SHLAA project. This may involve reconsidering potential sites which have been considered unsuitable in the core SHLAA study, but which could come forward if new infrastructure was delivered and land use designations reconsidered, eg industrial land. It will also consider whether sites could come forward at higher densities. The SHLAA system has been designed to ensure there is sufficient flexibility to enable different scenarios to be modelled and tested and for the system rules to be amended.
- 4.5 Other scenario tests which may also need to be tested in the SHLAA study include:
- The potential for increased development and higher residential densities within 'station intensification areas' and within 1km of town centres

- the various industrial land release scenarios described in paragraph 1.7
- the potential for suburban intensification
- housing zones and new opportunity areas to be identified in the London Plan

Reasons to delete large sites

- The site is less than 0.25 hectares
- The site was loaded in error, for example a road or waterbody (note that the study aims to assess all potential housing sites. This category should only be used for sites genuinely loaded in error). In addition, boroughs should amend site boundaries where necessary to remove roads or waterbodies or other features that cannot be built on.

5 Sources of capacity outside the large site system

Small sites

- 5.1 As in the 2013 SHLAA, a trend based approach will be used for small sites under 0.25ha. Data from the London Development Database on housing completions from 2004 to 2015 will be analysed and an annual average assumption produced for each borough. This time series will essentially cover a number of market cycles, which should mean the trend based assumptions provide a realistic average for over the plan period and fully take into account local constraints such eg heritage and the availability and viability of sites.
- 5.2 Trend based assumptions on small sites will be based on net conventional housing completions on sites under 0.25ha in size. This will include new build development, change of use and conversions. Trends will therefore take into account change of use from office to residential.
- 5.3 The NPPF states that historic windfall delivery rates should not include development on residential gardens¹². To address this requirement, the previous SHLAA methodology removed 90% of housing completions on garden land. This amounted to approximately 5% of housing delivery on small sites during the timescale examined (2004 – 2011).
- 5.4 For the next SHLAA study, both options will be tested (with and without housing completions on garden land). This will allow alternative policy approaches to be effectively tested and considered, taking into account the particular local circumstances and housing pressures experienced in London.
- 5.5 As stated above, additional scenario testing on small sites will also be undertaken to explore the potential for trends in housing completions in terms of delivery and density to be increased as a result of planning policy changes in the London Plan and Government reforms, for example, the scope for suburban intensification and whether the use of brownfield/small sites registers and permission in principle might increase housing delivery. The methodology and approach to scenario testing small sites 'windfall' assumptions will be developed in more detail at a later date and will be shared with boroughs for comment.
- 5.6 All small site data will be supplied to boroughs in order for them to check the data for accuracy and anomalies. This data will be provided to boroughs in February.

¹² NPPF, paragraph 48

Non-self contained housing developments

- 5.7 Housing approvals in the SHLAA system will include net housing provision from non-self contained residential schemes with planning permission where sites are 0.25ha and more in size. This includes student accommodation, specialist housing for older people and also other non-self contained shared living schemes, normally in sui generis use. Some SHLAA sites may be particularly suitable for student housing given their location and setting, and this can be considered by boroughs when assessing potential housing capacity/density.

Vacant homes

- 5.7 For the reasons outlined in the draft methodology, assumptions about the number of vacant homes returning to use will now not be included in the SHLAA study. However, the number of empty homes will continue to be a key Mayoral priority and addressed by policies in the London Plan and Housing Strategy, as well as targeted local interventions, it is recommended that this issue is not considered in the next SHLAA or in terms of monitoring forthcoming targets in the next London Plan.