



Gladman Developments Ltd

Examination of North Hertfordshire Local Plan 2011- 2031

Matter 6 Deliverability (the housing trajectory, infrastructure and viability)

6.1 Is the housing trajectory shown in Figure 6 of section 5 of the Plan based on realistic assessment of the likely timing of housing delivery? What evidence is there to support the completions shown for each year, and what assumptions have been made?

- 6.1.1 Whilst Figure 6 of Section 5 of the Plan indicates a broad housing trajectory, Appendix 2 of the Council's Housing and Green Belt Background Paper Partial Update September 2017 provides greater detail of the anticipated timing of delivery for each of the sites allocated for housing development.
- 6.1.2 Generally Gladman considers that the Council is overly optimistic regarding the timing of housing delivery on a substantial number of allocated sites. In considering the Council's trajectory, Gladman refers to a study published in November 2016 by Nathaniel Lichfield and Partners based on an assessment of 70 large sites (500 – 2,000 dwellings). The study, which is attached as Appendix 1 to this Statement, found an average lead in time of 3.9 years for large sites prior to the submission of the first planning application, and an average of 5 years for the planning approval period, with a further period of 9-10 months to first housing delivery. This is a wide ranging and up to date piece of research by independent consultants that should carry significant weight.

- 6.1.3 The study findings broadly accord with our own substantial knowledge and experience of large site housing delivery. This would confirm our assessment that the Council's anticipated delivery of housing in the first five years of the Plan post adoption is unrealistic. In addition a considerable number of proposed housing allocations are currently situated in the Green Belt. Given that planning permission for such sites is only likely to be granted once the Green Belt designation has formally been removed (i.e. upon the adoption of the Local Plan), it is highly unlikely that developers/landowners will consider submitting planning applications until that has occurred, which will not be until well into 2018 at the earliest.
- 6.1.4 Gladman has undertaken a re-assessment of a number of the proposed large housing allocations (this over 500 dwellings) in the Plan having regard, for these purposes, to the average lead in times found by the above-mentioned NLP report. The sites considered were BA1 North of Baldock, HT1 Highover Farm, Stotfold Road, Hitchin, LG1 Letchworth North, EL1 Luton East (west), EL3 Luton North East, GA2 Land off Mendip Way, Great Ashby and NS1 Stevenage North. Details of this exercise are attached as Appendix 2 to this statement, however the main findings were that 820 fewer dwellings would be delivered on these sites during the period 2018 to 2022.

Appendix 1

Start to Finish: How Quickly do Large-Scale Housing Sites Deliver?

TRIP

Targeted Research
& Intelligence Programme



Nathaniel Lichfield
& Partners

Planning. Design. Economics.

Start to Finish

How Quickly do Large-Scale Housing Sites Deliver?

November 2016

Executive Summary

There is a growing recognition that large-scale housing development can and should play a large role in meeting housing need. Garden towns and villages – planned correctly – can deliver sustainable new communities and take development pressure off less sustainable locations or forms of development.

However, what looks good on paper needs to deliver in practice. Plans putting forward large sites to meet need must have a justification for the assumptions they make about how quickly sites can start providing new homes, and be reasonable about the rate of development. That way, a local authority can decide how far it needs to complement its large-scale release with other sites – large or small – elsewhere in its district.

This research looks at the evidence on speed and rate of delivery of large-scale housing based on a large number of sites across England and Wales (outside London). We draw five conclusions:

1. If more homes are to be built, more land needs to be released and more planning permissions granted. There is no evidence to support the notion of systemic 'land banking' outside London: the commercial drivers of both house builders and land promoters incentivises rapid build out of permissions to secure returns on capital.
2. Planned housing trajectories should be realistic, accounting and responding to lapse rates, lead-in times and sensible build rates. This is likely to mean allocating more sites rather than less, with a good mix of types and sizes, and then being realistic about how fast they will deliver so that supply is maintained throughout the plan period. Because no one site is the same – and with significant variations from the average in terms of lead-in time and build rates – a sensible approach to evidence and justification is required.
3. Spatial strategies should reflect that building homes is a complex and risky business. Stronger local markets have higher annual delivery rates, and where there are variations within districts, this should be factored into spatial strategy choices. Further, although large sites can deliver more homes per year over a longer time period, they also have longer lead-in times.
4. Plans should reflect that – where viable – affordable housing supports higher rates of delivery. This principle is also likely to apply to other sectors that complement market housing for sale, such as build to rent and self-build (where there is demand for those products). This might mean some areas will want to consider spatial strategies that favour sites with greater prospects of affordable or other types of housing delivery.
5. For large-scale sites, it matters whether a site is brownfield or greenfield. The latter come forward more quickly.

In our conclusions we identify a check list of questions for consideration in exploring the justification for assumed timing and rates of delivery of large-scale sites.



The Research in Figures

70 number of large sites assessed

3.9 years the average lead in time for large sites prior to the submission of the first planning application

6.1 years the average planning approval period of schemes of 2,000+ dwellings. The average for all large sites is circa 5 years

161 the average annual build rate for a scheme of 2,000+ dwellings

321 the highest average annual build rate of the schemes assessed, but the site has only delivered for three years

40% approximate increase in the annual build rate for large sites delivering 30%+ affordable housing compared to those delivering 10%-19%

50% more homes per annum are delivered on average on large greenfield sites than large brownfield sites



Introduction

When it comes to housing, Government wants planning to think big. With its Garden Towns and Villages agenda and consultation on proposed changes to the National Planning Policy Framework (NPPF) to encourage new settlements, planning authorities and developers are being encouraged to bring forward large-scale housing development projects, many of them freestanding. And there is no doubt that such projects will be necessary if England is to boost supply and then consistently deliver the 300,000 new homes required each year¹.

Large-scale sites can be an attractive proposition for plan-makers. With just one allocation of several thousand homes, a district can – at least on paper – meet a significant proportion of its housing requirement over a sustained period. Their scale means delivery of the infrastructure and local employment opportunities needed to sustain mixed communities.

But large-scale sites are not a silver bullet. Their scale, complexity and (in some cases) up-front infrastructure costs means they are not always easy to kick start. And once up and running, there is a need to be realistic about how quickly they can deliver new homes. Past decades have seen too many large-scale developments failing to deliver as quickly as expected, and gaps in housing land supply have opened up as a result.

So, if Local Plans and five year land supply assessments are to place greater reliance on large-scale developments – including Garden Towns and Villages – to meet housing needs, the assumptions they use about when and how quickly such sites will deliver new homes will need to be properly justified.

“Local planning authorities should take a proactive approach to planning for new settlements where they can meet the sustainable development objectives of national policy, including taking account of the need to provide an adequate supply of new homes. In doing so local planning authorities should work proactively with developers coming forward with proposals for new settlements in their area.”

DCLG consultation on proposed changes to national planning policy (December 2015)

The Planning Practice Guidance (PPG) offers little guidance other than identifying that timescales and rates of development in land availability assessments should be based on information that “*may include indicative lead-in times and build-out rates for the development of different scales of sites. On the largest sites allowance should be made for several developers to be involved. The advice of developers and local agents will be important in assessing lead-in times and build-out rates by year*”². It also requires housing land availability assessments to include: “a reasonable estimate of build out rates, setting out how any barriers to delivery could be overcome.”³

This research provides insights to this topic – which has become a perennial discussion at Local Plan examinations and Section 78 appeals in recent years – by focusing on two key questions:

1. what are realistic lead-in times for large-scale housing developments?; and
2. once the scheme starts delivering, what is a realistic annual build rate?

NLP has carried out a desk-based investigation of the lead-in times and build-out rates on 70 different strategic housing sites (“large sites”) delivering 500 or more homes to understand what factors might influence delivery. For contrast 83 “small sites” delivering between 50 and 499 homes have been researched to provide further analysis of trends in lead in times and build rates at varying scales.

As well as identifying some of the common factors at play during the promotion and delivery of these sites it also highlights that every scheme has its own unique factors influencing its progress: there can be significant variations between otherwise comparable developments, and there is no one ‘typical scheme’. This emphasises the importance of good quality evidence to support the position adopted on individual projects.

¹ House of Lords Select Committee on Economic Affairs (2016) Building more homes: 1st Report of Session 2016-17 - HL Paper 20

² PPG ID: 3-023-20140306

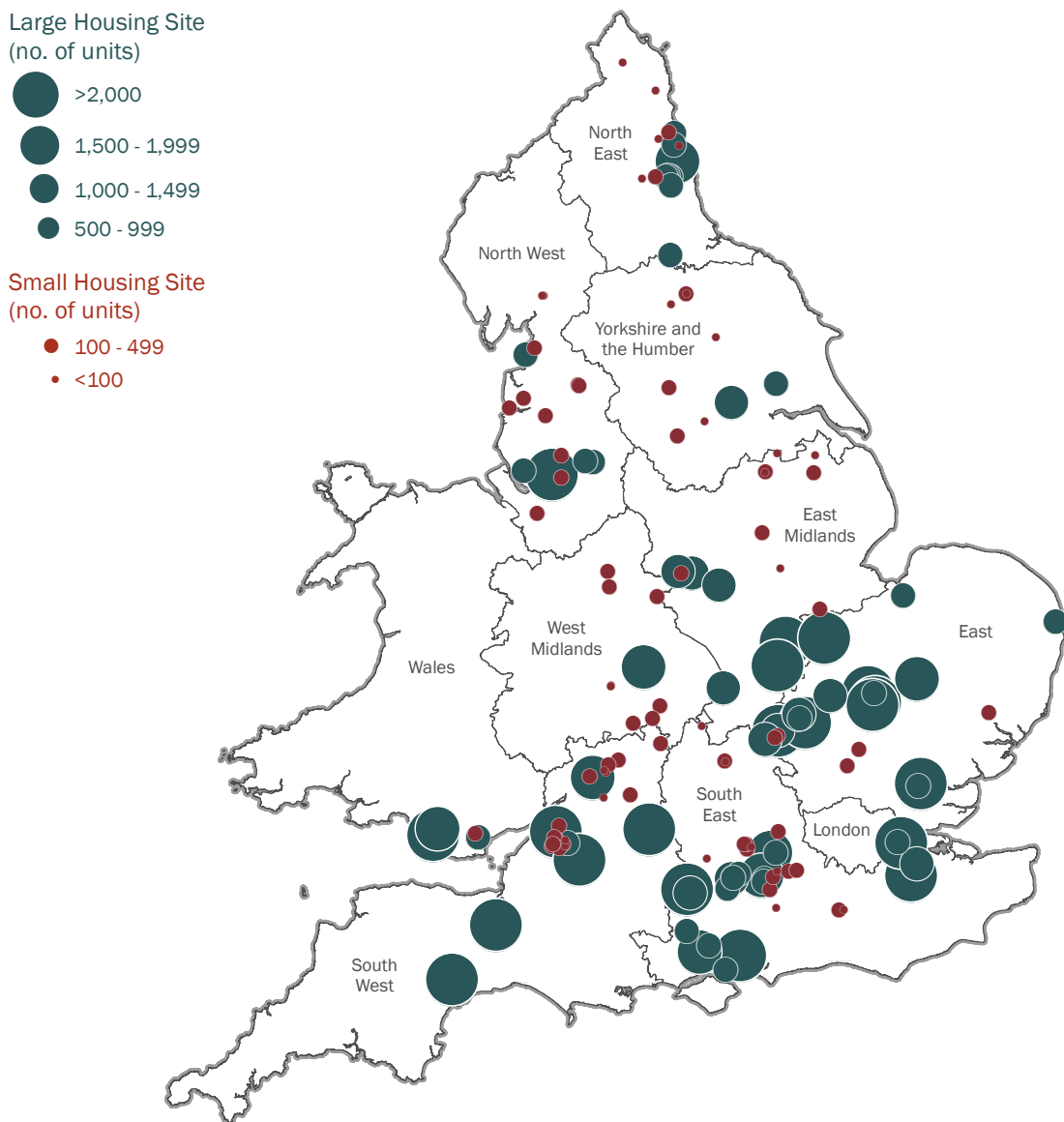
³ PPG ID: 3-028-20140306

Data Sources and Methodology

In total NLP reviewed 70 strategic sites (“large sites”) which have delivered, or will deliver, in excess of 500 dwellings. The sites range in size from 504 to 15,000 dwellings. The geographic distribution of the 70 large sites and comparator small sites is set out below in Figure 1. A full list of the large sites can be found in Appendix 1 and the small sites in Appendix 2. NLP focused on sites outside London, due to the distinctive market and delivery factors applicable in the capital.

Efforts were made to secure a range of locations and site sizes in the sample, but it may not be representative of the housing market in England and Wales as a whole and thus conclusions may not be applicable in all areas or on all sites.

Figure 1: Geographic Distribution of the 70 Large Sites and 83 Small Sites Assessed



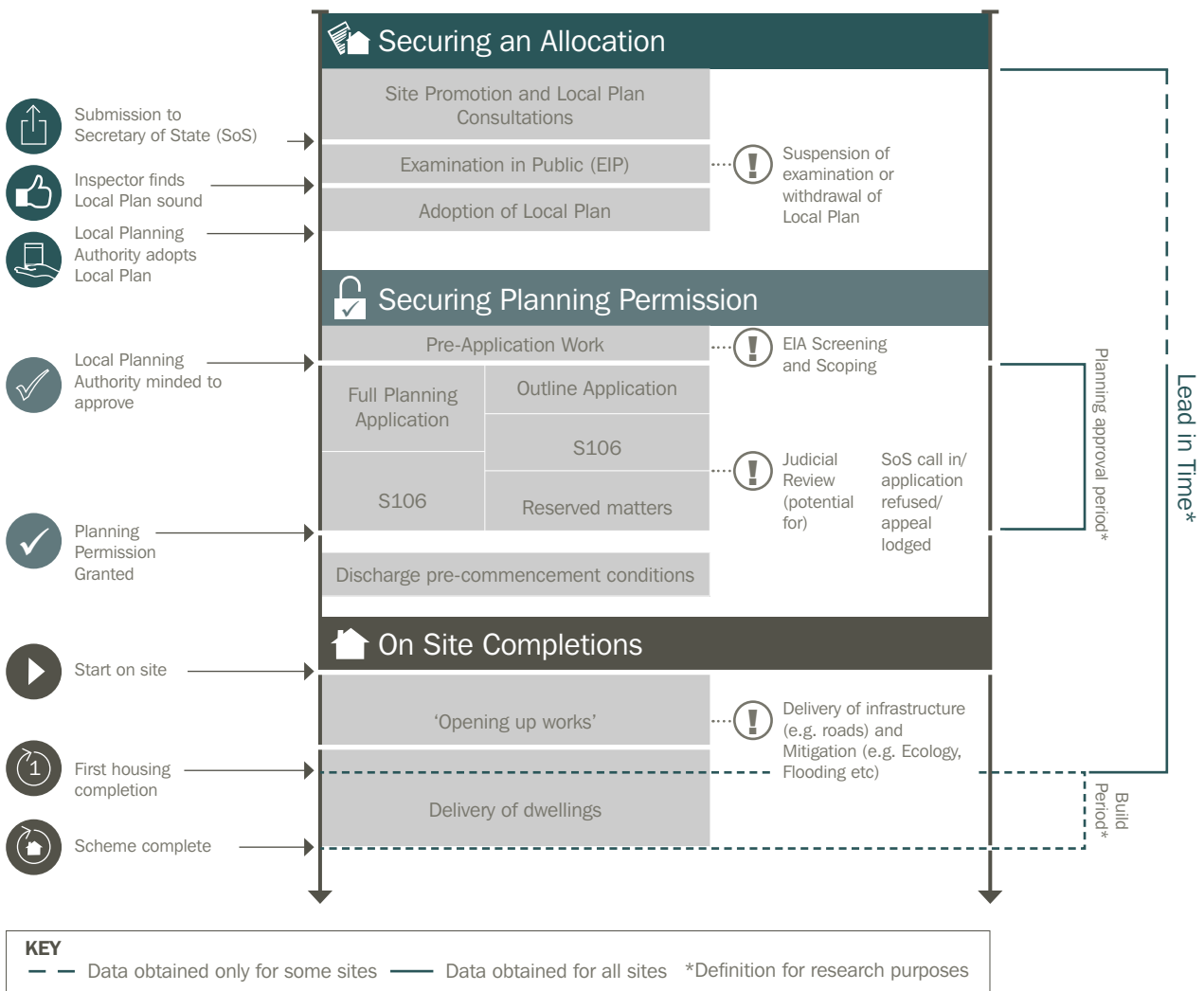
Source: NLP analysis

Methodology

The research aims to cover the full extent of the planning and delivery period. So, wherever the information was available, the data collected on each of the 70 sites covers the stages associated with the total lead-in time of the development (including the process of securing a development plan allocation), the total planning approval period, starting works on site, delivery of the first dwelling and the annualised build rates recorded for the development up until to the latest year where data is available (2014/15). To structure the research and provide a basis for standardised measurement and comparison, these various stages (some of them overlapping) have been codified.

Figure 2 sets out the stages and the milestones used to measure them. These are assumed to fall under what are defined as 'lead-in times', 'planning approval periods' and 'build periods', with 'first housing completion' denoting the end of the lead-in time and start of the build period. Not every site assessed will necessarily have gone through each component of the identified stages sequentially, or indeed at all (for example, some sites secure planning permission without first being allocated).

Figure 2: Timeline for the Delivery of a Strategic Housing Site



Source: NLP

Start to Finish

The approach to defining these stages for the purposes of this research is set out below:

- The **'lead-in time'** – this measures the period up to the first housing completion on site from either a) the date of the first formal identification of the site as a potential housing allocation (e.g. in a LPA policy document) or where not applicable, available or readily discernible – b) the validation date of the first planning application made for the scheme.
- The **'planning approval period'** is measured from the validation date of the first application for the proposed development (be that an outline, full or hybrid application). The end date is the decision date of the first detailed application which permits the development of dwellings on site (this may be a full or hybrid application or the first reserved matters approval which includes details for housing). The discharge of any pre-commencement and other conditions obviously follows this, but from a research perspective, a measurement based on a detailed 'consent' was considered reasonable and proportionate milestone for 'planning' in the context of this research.
- The date of the **'first housing completion'** on site (the month and year) is used where the data is available. However, in most instances the monitoring year of the first completion is all that is available and in these cases a mid-point of the monitoring period (1st October, falling halfway between 1st April and the following 31st March) is used.
- The **'annual build rate'** falls within the overall 'build period'. The annual build rate of each site is taken or inferred from the relevant Local Planning Authority's Annual Monitoring Reports (AMR) or other evidence based documents where available. In some instances this was confirmed – or additional data provided – by the Local Planning Authority or County Council.

Due to the varying ages of the assessed sites, the implementation of some schemes was more advanced than others and, as a function of the desk-based nature of the research and the vintage of some of the sites assessed, there have been some data limitations, which means there is not a complete data set for every assessed site. For example, lead-in time information prior to submission of planning applications is not available for all sites. And because not all of the sites assessed have commenced housing delivery, annual build rate information is not universal. The results are presented accordingly.



Getting Started: What are Realistic Lead-in Times?

How long does it take for large-scale sites to get up and running? This can be hard to estimate. Understandably, those promoting sites are positive about how quickly they can deliver, and local authorities choosing to allocate large-scale sites in their plans are similarly keen for these sites to begin making a contribution to housing supply. This leads some local housing trajectories to assume that sites can be allocated in Local Plans and all detailed planning approvals secured in double-quick time. However, the reality can prove different.

Our main focus here is on the average 'planning approval period' and the subsequent period from receiving a detailed planning approval to delivery of the first house on site. However, another important metric is how long it takes from the site being first identified by the local authority for housing delivery to getting started on site. Unfortunately, getting accurate data for this on some of the historic sites is difficult, so this analysis is focused on a just 18 of the sample sites where information was available.

Lead-in Times

The lead-in time prior to the submission of a planning application is an important factor, because many planning issues are flushed out in advance of planning applications being submitted, not least in terms of local plan allocations establishing the principle of an allocation. In a plan-led system, many large-scale sites will rely on the certainty provided by Local plans, and in this regard, the slow pace of plan-making in the period since the NPPF⁴ is a cause for concern.

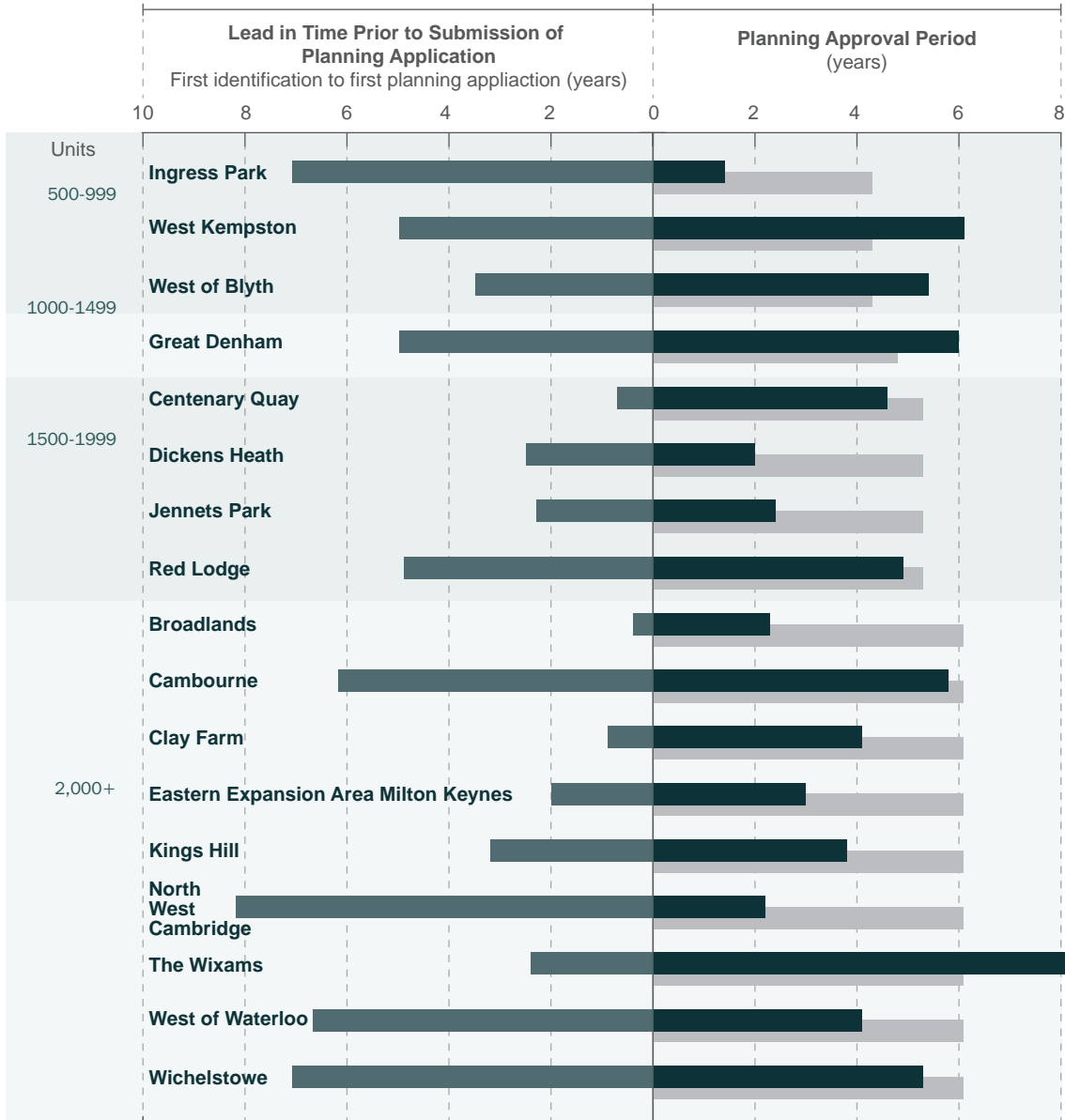
If the lead-in time prior to submission of an application is able to focus on addressing key planning issues, it can theoretically help ensure that an application – once submitted – is determined more quickly. Our sample of sites that has lead-in time information available is too small to make conclusions on this theory. However, there is significant variation within these sites highlighting the complexity of delivering homes on sites of different sizes. Of this sample of sites: on average it was 3.9 years from first identification of the site for housing to the submission of the initial planning application.

Moreover, a substantial lead-in time does not guarantee a prompt permission: 4 of the 18 sites that took longer to gain planning permission than the average for sites of comparable size and also had lead-in times prior to submission of a planning application of several years⁵.

⁴ As at September 2016, just 34% of Local Authorities outside London have an up-to-date post-NPPF strategic-level Local Plan. Source: PINS / NLP analysis.

⁵ The sites in question were The Wixams, West Kempton, West of Blyth, and Great Denham.

Figure 3: Average lead-in time of sites prior to submission of the first planning application



KEY
 Lead in time prior to submission of planning application
 Planning approval period
 Average planning application period for site of that size

Source: NLP analysis

The Planning Approval Period: Size Matters

The term ‘planning approval period’ in this report measures the period from the validation date of the first planning application for the scheme to the decision date of the first application which permits development of dwellings on site (this could be a full, hybrid or reserved matters application). Clearly, in many cases, this approval will also need to be followed by discharge of pre-commencement conditions (a focus of the Government’s Neighbourhood Planning Bill) but these were not reviewed in this research as a detailed approval was considered an appropriate milestone in this context.

The analysis considers the length of planning approval period for different sizes of site, including comparing large-scale sites with small sites. Figure 4 shows that the greater the number of homes on a site, the longer the planning approval period becomes. There is a big step-up in time for sites of in-excess of 500 units.

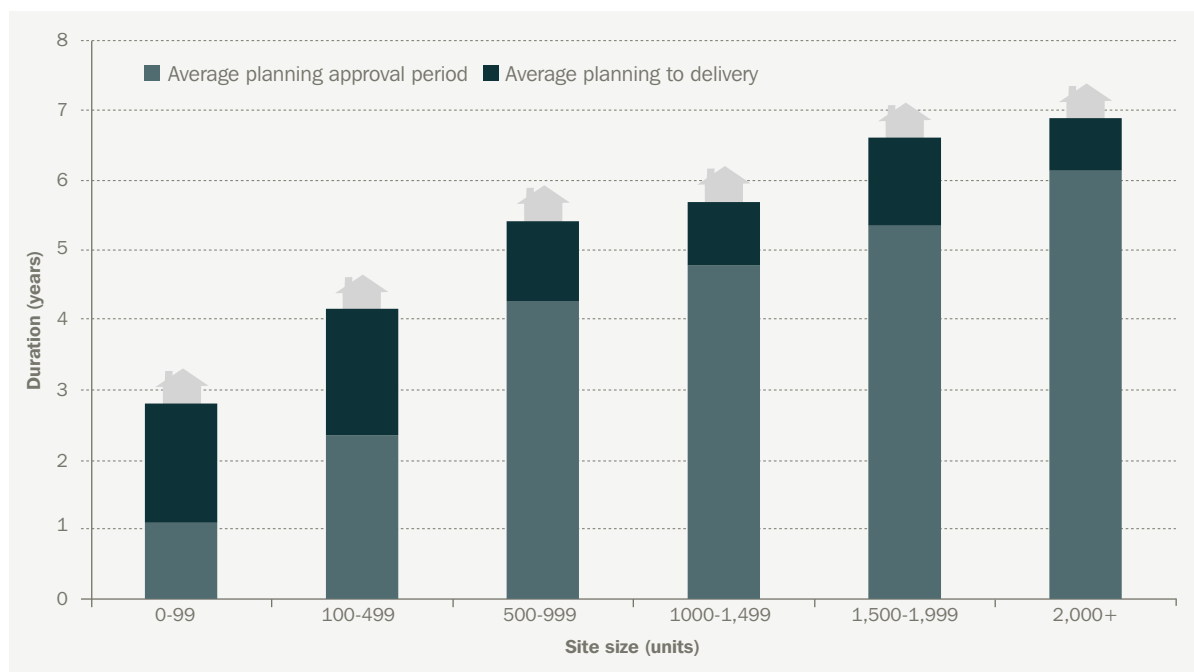
Time Taken for First Housing Completion after Planning Approval

Figure 4 also shows the time between the approval of the first application to permit development of dwellings on site and the delivery of the first dwelling (during which time any pre-commencement conditions would also be discharged), in this analysis this is the latter part of the lead in time period. This reveals that the timescale to open up a site following the detailed approval is relatively similar for large sites.

Interestingly, our analysis points to smaller sites taking longer to deliver the first home after planning approval. This period of development takes just over 18 months for small sites of under 500 units, but is significantly quicker on the assessed large-scale sites; in particular, on the largest 2,000+ dwelling sites the period from receiving planning approval to first housing completion was 0.8 years.

In combination, the planning approval period and subsequent time to first housing delivery reveals the total period increases with larger sites, with the total period being in the order of 5.3 – 6.9 years. Large sites are typically not quick to deliver; in the absence of a live planning application, they are, on average, unlikely to be contributing to five year housing land supply calculations.

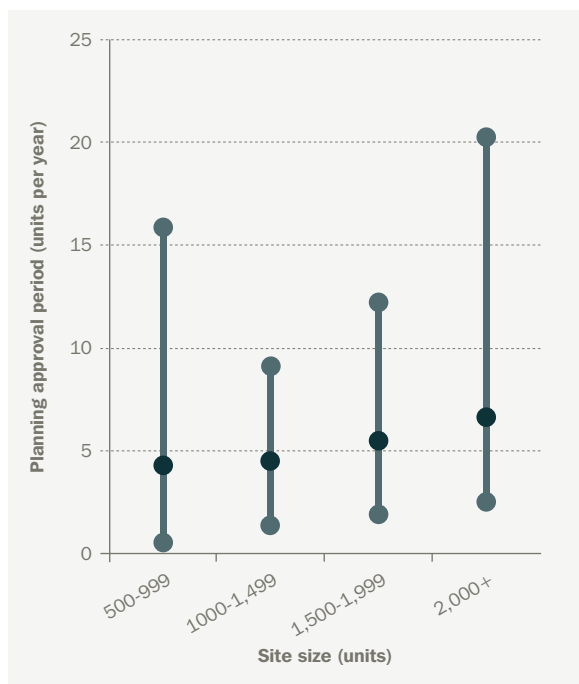
Figure 4: Average planning approval period and delivery of first dwelling analysis by site size



Source: NLP analysis

Of course, these are average figures, and there are significant variations from the mean. Figure 5 below shows the minimum and maximum planning approval periods for sites in each of the large size categories. This shows even some of the largest sites coming forward in under two years, but also some examples taking upwards of 15-20 years. Clearly, circumstances will vary markedly from site to site.

Figure 5: Site size and duration of planning



Source: NLP analysis

Case Studies

If some sites are coming forward more quickly than the average for sites of that size, what is it that is driving their rapid progress? We explored this with some case studies. These suggest that when schemes are granted planning permission significantly faster than the above averages, it is typically due to specific factors in the lead-in time prior to the submission of a planning application.

Gateshead – St James Village (518 dwellings): Planning approval period 0.3 years⁶

This site was allocated as a brownfield site in the Gateshead UDP (2000) prior to the submission of a planning application for the regeneration scheme. A Regeneration Strategy for East Gateshead covered this site and as at 1999 had already delivered high profile flagship schemes on the water front. Llewelyn Davis were commissioned by the Council and English Partnerships to prepare a masterplan and implementation strategy for the site which was published in June 1999. Persimmon Homes then acquired the site and it was agreed in autumn 1999 that they should continue the preparation of the masterplan. East Gateshead Partnership considered the masterplan on the 08th March 2000 and recommended approval. Subsequently, the outline application (587/00) with full details for phase 1 was validated on the 6th September 2000 and a decision issued on the 9th January 2001.

It is clear that although it only took 0.3 years for the planning application to be submitted and granted for a scheme of more than 500 units, the lead in time to the submission of the application was significant, including an UDP allocation and a published masterplan 18 months ahead of permission being granted. By the time the planning application was submitted most of the site specific issues had been resolved.

⁶ St James Village is excluded from the lead-in time analysis because it is unclear on what date the site was first identified within the regeneration area

Dartford – Ingress Park (950 dwellings): Planning approval period 1.4 years

This site was initially identified in a draft Local Plan in 1991 and finally allocated when this was adopted in April 1995. The Ingress Park and Empire Mill Planning Brief was completed in three years later (November 1998).

The submission of the first planning application for this scheme predated the completion of the Planning Brief by a few months, but the Council had already established that they supported the site. By the time the first application for this scheme was submitted, the site had been identified for development for circa seven years.

The outline application (98/00664/OUT) was validated on the 10th August 1998 and permission granted on the 21st Nov 2000, a determination period of 1 year and 3 months). A full application for the First Phase for 52 dwellings (99/00756/FUL) was validated and approved in just two months, prior to approval of the outline. Clearly, large-scale outline permissions have to wrap up a wide range of other issues, but having first phase full applications running in parallel can enable swifter delivery, in situations where a 'bite sized' first phase can be implemented without triggering complex issues associated with the wider site.

Cambridge and South Cambridgeshire – North West Cambridge (3,000 dwellings and 2,000 student bed spaces): Planning approval period 2.2 years

Cambridge University identified this area as its only option to address its long-term development needs, and the Cambridgeshire and Peterborough Structure Plan 2003 identified the location for release from the Green Belt. The site was allocated in the 2006 Cambridge Local Plan, and the North West Cambridge Area Action Plan was adopted in October 2009. The Area Action Plan established an overall vision and set out policies and proposals to guide the development as a whole.

As such, by the time the first application for this scheme was submitted, there had already been circa eight years of 'pre-application' planning initially concerning the site's release from the Green Belt, but then producing the Area Action Plan which set out very specific requirements.. This 'front-loaded' consideration of issues that might otherwise have been left to a planning application.

The outline application (11/1114/OUT – Cambridge City Council reference) for delivery of up to 3,000 dwellings, up to 2,000 student bed spaces and 100,000 sqm of employment floorspace was validated on the 21st September 2011 and approved on the 22nd of February 2013. The first reserved matters application for housing (13/1400/REM) was validated on the 20th September 2013 and approved on the 19th December 2013. Some ten years from the concept being established in the Structure Plan.

Summary on Lead-in Times

1. On average, larger sites take longer to complete the planning application and lead-in processes than do smaller sites. This is because they inevitably give rise to complex planning issues related to both the principle of development and the detail of implementation.
2. Consideration of whether and how to implement development schemes is necessary for any scheme, and the evidence suggests that where planning applications are determined more quickly than average, this is because such matters were substantially addressed prior to the application being submitted, through plan-making, development briefs and/or master planning. There is rarely a way to short-circuit planning.
3. Commencement on large sites can be accelerated if it is possible to 'carve-out' a coherent first phase and fast track its implementation through a focused first phase planning application, in parallel with consideration of the wider scheme through a Local Plan or wider outline application.
4. After receiving permission, on average smaller sites take longer to deliver their first dwelling than do the largest sites (1.7-1.8 years compared to 0.8 years for sites on 2,000+ units).

Lapse Rates: What Happens to Permissions?

Not every planning permission granted will translate into the development of homes. This could mean an entire site does not come forward, or delivery on a site can be slower than originally envisaged. It is thus not realistic to assume 100% of planning permission granted in any given location will deliver homes. Planning permissions can lapse for a number of reasons:

1. The landowner cannot get the price for the site that they want;
2. A developer cannot secure finance or meet the terms of an option;
3. The development approved is not considered to be financially worthwhile;
4. Pre-commencement conditions take longer than anticipated to discharge;
5. There are supply chain constraints hindering a start; or
6. An alternative permission is sought for the scheme after approval, perhaps when a housebuilder seeks to implement a scheme where the first permission was secured by a land promoter.

These factors reflect that land promotion and housebuilding is not without its risks.

At the national level, the Department for Communities and Local Government has identified a 30-40% gap between planning permissions granted for housing and housing starts on site⁷. DCLG analysis suggested that 10-20% of permissions do not materialise into a start on site at all and in addition, an estimated 15-20% of permissions are re-engineered through a fresh application, which would have the effect of pushing back delivery and/or changing the number of dwellings delivered.

This issue often gives rise to claims of 'land banking' but the evidence for this is circumstantial at best, particularly outside London. The business models of house builders are generally driven by Return on Capital Employed (ROCE) which incentivises a quick return on capital after a site is acquired. This means building and selling homes as quickly as possible, at sales values consistent with the price paid for the land. Land promoters (who often partner with landowners using promotion agreements) are similarly incentivised to dispose of their site to a house builder to unlock their promotion fee. Outside London, the scale of residential land prices has not been showing any significant growth in recent years⁸ and indeed for UK greenfield and urban land, is still below levels last seen at least 2003⁹. There is thus little to incentivise hoarding land with permission.

The LGA has identified circa 400-500,000 units of 'unimplemented' permissions¹⁰, but even if this figure was accurate, this is equivalent to just two years of pipeline supply. More significantly, the data has been interpreted by LGA to significantly overstate the number of unimplemented permissions because 'unimplemented' refers to units on sites where either the entire site has not been fully developed or the planning permission has lapsed¹¹. It therefore represents a stock-flow analysis in which the outflow (homes built) has been ignored.

Insofar as 'landbanking' may exist, the issue appears principally to be a London – rather than a national – malaise, perhaps reflecting that land values in the capital – particularly in 'prime' markets – have increased by a third since the previous peak of 2007. The London Mayor's 'Barriers to Housing Delivery – Update' of July 2014 looked at sites of 20 dwellings or more and reported that only about half of the total number of dwellings granted planning permission every year are built (Table 3); a lapse rate of circa 50% across London.

Clearly, the perceived problem of landbanking is seeing policy attention from Government, but caution is needed that any changes do not result in unintended consequences or act as a disincentive to secure planning permissions.

A more practical issue is that Plans and housing land trajectories must adopt sensible assumptions, based on national benchmarks, or – where the data exists – local circumstances, to understand the scale of natural non-implementation.

⁷ DCLG Presentations to the HBF Planning Conference (September 2015)

⁸ Knight Frank Residential Development Land Index Q1 2016 <http://content.knightfrank.com/research/161/documents/en/q1-2016-3844.pdf>

⁹ Savills Development Land Index <http://www.savills.co.uk/research/uk/residential-research/land-indices/development-land-index.aspx>

¹⁰ Glenigan data as referenced by Local Government Association in its January 2016 media release (a full report is not published) http://www.local.gov.uk/web/guest/media-releases/-/journal_content/56/10180/7632945/NEWS

¹¹ This would mean that a site which has built 99% of homes will still show up as 100% of units being 'unimplemented'

Build Rates: How Fast Can Sites Deliver?

The rate at which sites deliver new homes is a frequently contested matter at Local Plan examinations and during planning inquiries considering five year housing land supply. Assumptions can vary quite markedly and expectations have changed over time: in 2007, Northstowe – the new settlement to the north west of Cambridge – was expected by the Council to deliver 750-850 dwellings per annum¹²; it is now projected to deliver at an annual rate of just 250¹³.

There is a growing recognition that the rate of annual delivery on a site is shaped by ‘absorption rates’: a judgement on how quickly the local market can absorb the new properties. However, there are a number of factors driving this for any given site:

- the strength of the local housing market;
- the number of sales outlets expected to operate on the site (ie the number of different house builders or brands/products being delivered); or
- the tenure of housing being built. Are market homes for sale being supplemented by homes for rent, including affordable housing?

The analysis in this section explores these factors with reference to the surveyed sites.

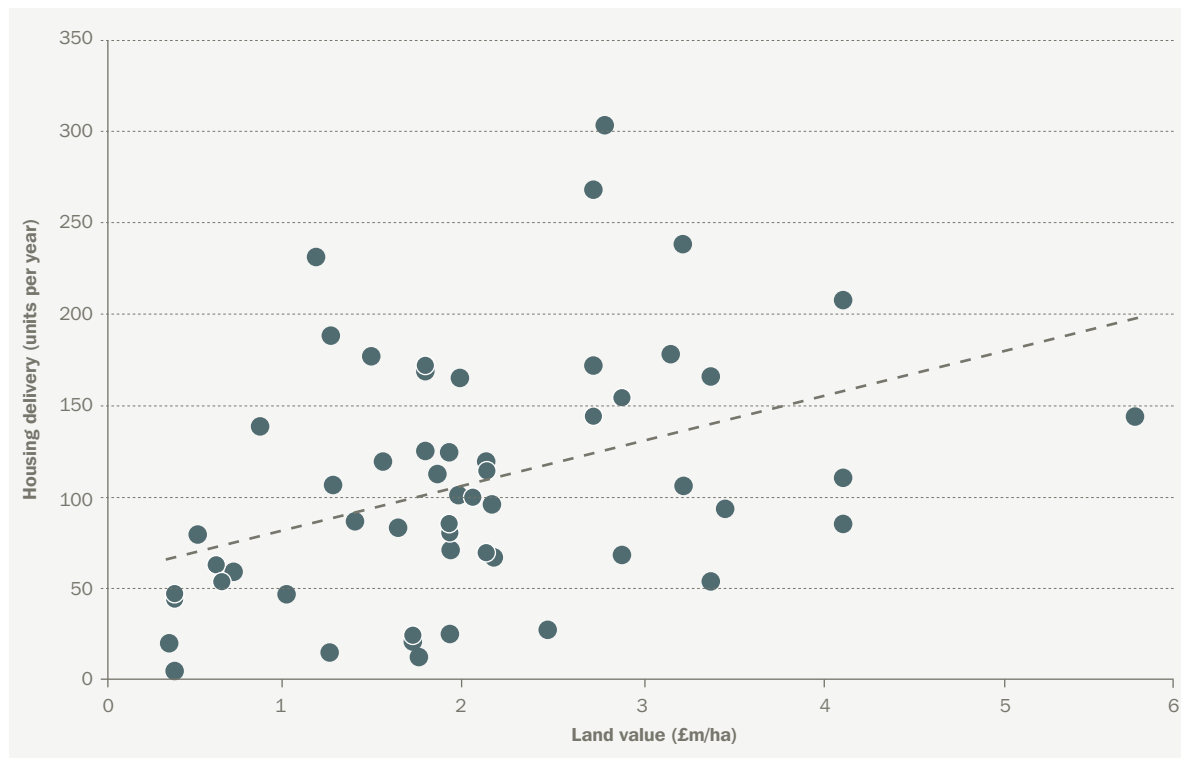
Market Strength

It might seem a truism that stronger market demand for housing will support higher sales and build rates – but how far is that the case and how to measure it?

Figure 6 below compares CLG data on post-permission residential land value estimates (£/ha) by Local Authorities in 2014¹⁴ to the average build out rate of each of the assessed strategic sites. Unfortunately the residential land value estimates are only available for England and as such the Welsh sites assessed are excluded, leaving 57 sites in total.

The analysis shows that markets matter. Relatively weaker areas may not be able to sustain the high build-out rates that can be delivered in stronger markets with greater demand for housing. There are significant variations, reflecting localised conditions, but the analysis shows a clear relationship between the strength of the market in a Local Authority area and the average annual build rates achieved on those sites. Plan makers should therefore recognise that stronger local markets can influence how quickly sites will deliver.

Figure 6: Average Annual Build-out Rates of sites compared to Land Values as at 2014



Source: NLP analysis and CLG Post-permission residential land value estimates (£/ha) by Local Authorities (February 2015)

¹² South Cambridgeshire Annual Monitoring Report 2006/07

¹³ South Cambridgeshire Annual Monitoring Report 2014/15

¹⁴ Post-permission residential land value estimates were released in December 2015, however the end date of the build rate data obtained is 2014/15; as such land value estimates at February 2015 are better aligned to the build periods assessed in this report and have been used for consistency.

Size Matters

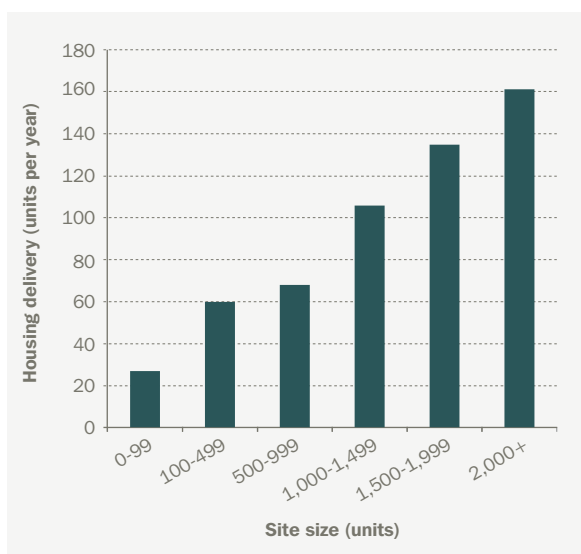
A key metric for build rates on sites is the number of sales outlets. Different housebuilders will differentiate through types or size of accommodation and their brands and pricing, appealing to different customer types. In this regard, it is widely recognised that a site may increase its absorption rate through an increased number of outlets.

Unfortunately, data limitations mean that the number of outlets is not readily available for the large sites surveyed within this research, and certainly not on any longitudinal basis which is relevant because the number of outlets on a site may vary across phases.

However, it is reasonable to assume that larger sites are likely to feature more sales outlets and thus have greater scope to increase build rates. This may relate to the site being more geographically extensive: with more access points or development ‘fronts’ from which sales outlets can be driven. A large urban extension might be designed and phased to extend out from a number of different local neighbourhoods within an existing town or city, with greater diversity and demand from multiple local markets.

Our analysis supports this concept: larger sites deliver more homes each year, but even the biggest schemes (those with capacity for 2,000 units) will, on average, deliver fewer than 200 dwellings per annum, albeit their average rate – 161 units per annum – is six times that of sites of less than 100 units (27 units per annum).

Figure 7: Average annual build rate by site size



Start to Finish

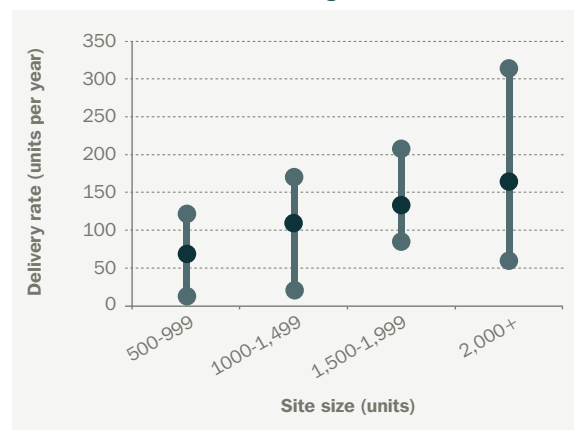
Of course, these are average figures. Some sites will see build rates exceeding this average in particular years, and there were variations from the mean across all categories (see Figure 8), suggesting that higher or lower rates than this average may well be possible, if circumstances support it.

Nevertheless, it is striking that annual average delivery on sites of up to 1,499 units barely exceeds 100 units per annum, and there were no examples in this category that reached a rate of 200 per annum. The highest rate – of 321 units per annum – is for the Cranbrook site, but this is a short term average. A rate of 268 per annum was achieved over a longer period at the Eastern Expansion Area (Broughton Gate & Brooklands) site in Milton Keynes. The specific circumstance surrounding the build rates in both these examples are explored as case studies opposite. It is quite possible that these examples might not represent the highest rate of delivery possible on large-scale sites in future, as other factors on future sites might support even faster rates.

Our analysis also identifies that, on average, a site of 2,000 or more dwellings does not deliver four times more dwellings than a site delivering between 100 and 499 homes, despite being at least four times the size. In fact it only delivers an average of 2.5 times more houses. This is likely to reflect that:

- it will not always be possible to increase the number of outlets in direct proportion to the size of site – for example due to physical obstacles (such as site access arrangements) to doing so; and
- overall market absorption rates means the number of outlets is unlikely to be a fixed multiplier in terms of number of homes delivered.

Figure 8: Average annual build-out rate by site size, including the minimum and maximum averages within each site size



Cranbrook: East Devon

The highest average annual build out rates recorded in this analysis comes from the Cranbrook site in East Devon where an average of 321 dwellings per annum were delivered between 2012/13 and 2014/15. Delivery of housing only started on this site in 2012/13, with peak delivery in 2013/14 of 419 dwellings.

Cranbrook is the first new standalone settlement in Devon for centuries and reportedly – according to East Devon Council – the result of over 40 years of planning (this claim has not been substantiated in this research). It is the circumstances surrounding its high annual delivery rate which is of most interest, however.

Phase 1 of the development was supported by a £12 million repayable grant from a revolving infrastructure fund managed by the Homes and Communities Agency. The government also intervened again in the delivery of this site by investing £20 million for schools and infrastructure to ensure continuity of the scheme, securing the delivery of phase 2. The government set out that the investment would give local partners the confidence and resources to drive forward its completion.

The Consortium partnership for Cranbrook (including Hallam Land, Persimmon Homes (and Charles Church) and Taylor Wimpey) stated the following subsequent to the receipt of the government funding¹⁵.

“Without this phase 2 Cranbrook would have been delayed at the end of phase 1, instead, we have certainty in the delivery of phase 2, we can move ahead now and commit with confidence to the next key stages of the project and delivering further community infrastructure and bringing forward much needed private and affordable homes”.

Clearly, the public sector played a significant role in supporting delivery. The precise relationship between this and the build rate is unclear, but funding helped continuity across phases one and two of the scheme. More particularly, the rate of delivery so far achieved relates just to the first three years, and there is no certainty that this high build-out rate will be maintained across the remainder of the scheme.

Eastern Expansion Area (Broughton Gate & Brooklands): Milton Keynes

The second highest average build out rates recorded in this analysis comes from the Eastern Expansion Area (Broughton Gate & Brooklands) site in Milton Keynes where an average of 268 dwellings per annum were delivered between 2008/09 and 2013/14. As is widely recognised, the planning and delivery of housing in Milton Keynes is distinct from almost all the sites considered in this research.

Serviced parcels with the roads already provided were delivered as part of the Milton Keynes model and house builders are able to proceed straight onto the site and commence delivery. This limited the upfront site works required and boosted annual build rates. Furthermore, there were multiple outlets building-out on different serviced parcels, with monitoring data from Milton Keynes Council suggesting an average of c.12 parcels were active across the build period. This helped to optimise the build rate.

¹⁵ <https://www.gov.uk/government/news/government-funding-to-unlock-delivery-of-12-000-new-homes>

Peak Years of Housing Delivery

Of course, rates of development on sites will ebb and flow. The top five peak annual build-out rates achieved across every site assessed are set out in Table 1 below. Four of the top five sites with the highest annual peak delivery rates are also the sites with the highest annual average build out rates (with the exception of Broughton & Atterbury). Peak build rates might occur in years when there is an overlap of multiple outlets on phases, or where a particular phase might include a large number of affordable or apartment completions. It is important not to overstress these individual years in gauging build rates over the whole life of a site.

Table 1: Peak annual build-out rates compared against average annual delivery rates on those sites

Scheme	Peak Annual Build-Out Rate	Annual Average Build-Out Rate
Cambourne	620	239
Hamptons	548	224
Eastern Expansion Area	473	268
Cranbrook	419	321
Broughton	409	171

Source: NLP analysis and various AMRs

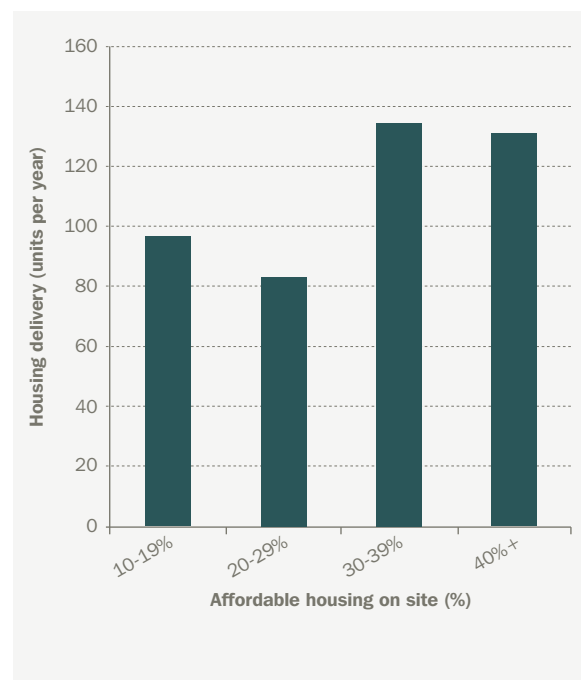
Affordable Housing Provision

Housing sites with a larger proportion of affordable homes (meeting the definition in the NPPF) deliver more quickly, where viable. The relationship appears to be slightly stronger on large-scale sites (500 units or more) than on smaller sites (less than 500 units), but there is a clear positive correlation (Figure 9). For both large and small-scale sites, developments with 40% or more affordable housing have a build rate that is around 40% higher compared to developments with 10-19% affordable housing obligation.

The relationship between housing delivery and affordable (subsidised) housing is multi-dimensional, resting on the viability, the grant or subsidy available and the confidence of a housing association or registered provider to build or purchase the property for management. While worth less per unit than a full-market property, affordable housing clearly taps into a different segment of demand (not displacing market demand), and having an immediate purchaser of multiple properties can support cash flow and risk sharing in joint ventures. However, there is potential that starter homes provided in lieu of other forms of affordable housing may not deliver the same kind of benefits to speed of delivery, albeit they may support viability overall.

This principle – of a product targeting a different segment of demand helping boost rates of development – may similarly apply to the emergent sectors such as ‘build-to-rent’ or ‘self build’ in locations where there is a clear market for those products. Conversely, the potential for starter homes to be provided in lieu of other forms of affordable housing may overlap with demand for market housing on some sites, and will not deliver the kind of cash flow / risk sharing benefits that comes from disposal of properties to a Registered Provider.

Figure 9: Affordable housing provision and housing output



Source: NLP analysis

The Timeline of the Build-out Period

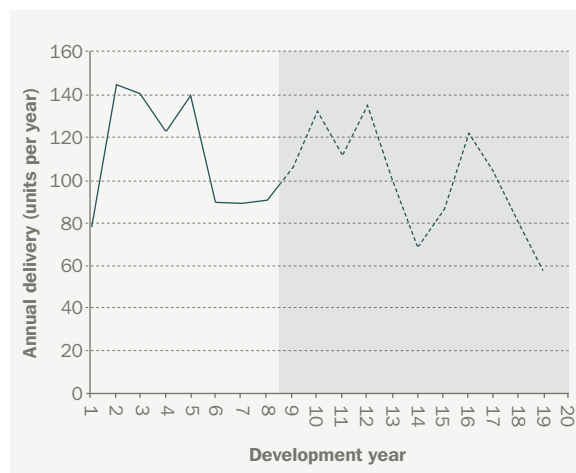
Many planners’ housing trajectories show large sites gradually increasing their output and then remaining steady, before tailing off at the end. In fact, delivery rates are not steady. Looking at the first eight years of development – where the sample size of large sites is sufficiently high – NLP’s research showed that annual completions tended to be higher early in the build-out period before dipping (Figure 10).

For sites with even longer build out periods, this pattern of peaks and troughs is potentially repeated again (subject to data confidence issues set out below). This surge in early completions could reflect the drive for

rapid returns on capital in the initial phase, and/or early delivery of affordable housing, with the average build rate year by year reducing thereafter to reflect the optimum price points for the prevailing market demand. Additionally, the longer the site is being developed, the higher the probability of coinciding with an economic downturn – obviously a key factor for sites coming forward over the past decade – which will lead to a reduction in output for a period.

Our sample of sites where the development lasted for more than eight years is too small to draw concrete findings, but it does flag a few other points. On extremely large sites that need to span more than a decade, the development will most likely happen in phases. The timing and rate of these phases will be determined by a range of factors including: the physical layout of the site, the ability to sell the homes; trigger points for payment for key social and transport infrastructure obligations; the economic cycle; and local market issues. Predicting how these factors combine over a plan period is self-evidently difficult, but plan makers should recognise the uncertainty and build in flexibility to their housing trajectories to ensure they can maintain housing supply wherever possible.

Figure 10: Average annual build-out rate per year of the build period



Source: NLP analysis

Summary

1. There is a positive correlation between the strength of the market (as measured by residential land values) and the average annual build rates achieved.
2. The annual average build-rate for the largest sites (of 2,000 or more units) is circa 161 dwellings per annum
3. The rate of delivery increases for larger schemes, reflecting the increased number of sales outlets possible on large sites. However, this is not a straight line relationship: on average, a site of 2,000 units will not, deliver four times as fast as a site of 500. This reflects the limits to number of sales outlets possible on a site, and overall market absorption rates.
4. There is significant variation from the average, which means some sites can be expected to deliver more (or less) than this average. However, the highest average build-out rate of all the assessed sites is 321 dwellings per annum in Cranbrook. But this relates to just three years of data, and the scheme benefitted from significant government funding to help secure progress and infrastructure. Such factors are not be present in all schemes, and indeed, the data suggests sites tend to build at a higher rate in initial years, before slowing down in later phases.
5. Build rates on sites fluctuate over their life. The highest build rate recorded in a single year is 620 units at Camborne, but for the duration of the development period the average annual build rate is 239 dwellings.
6. There is a positive correlation between the percentage of affordable homes built on site and the average annual delivery of homes with sites delivering 30% or more affordable housing having greater annual average build rates than sites with lower affordable housing provision. The introduction of different tenures taps into different market segments, so a build to rent product may similarly boost rates of delivery – where there is a market for it – but starter homes may have the opposite effect if they are provided in lieu of other forms of affordable homes, and displace demand for cheaper market homes.

A Brownfield Land Solution?

The NPPF encourages the effective use of previously-developed land, and recent Government announcements suggest increased prioritisation of development for brownfield sites. Efforts to streamline the planning process for brownfield sites may also speed up their delivery. But, is there a difference in how quickly brownfield sites can come forward compared to greenfield sites?

Research produced by CPRE and Glenigan in March 2016¹⁶ suggested that the time between planning permission being granted and construction work starting is generally the same for brownfield and greenfield sites, but suggested that work on brownfield sites is completed more than six months quicker. However, it was not clear if this finding was because the greenfield sites were larger than the equivalent brownfield sites surveyed in that study. We therefore looked at how lead in times and build rates compared for large-scale sites of 500+ dwellings on greenfield and brownfield sites.

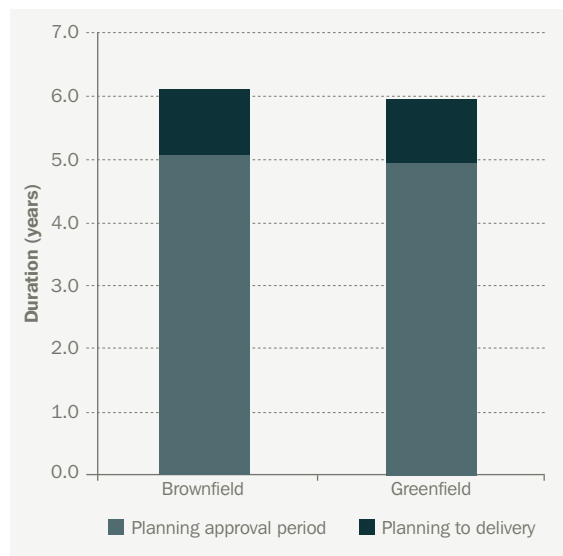
The Planning Approval Period

Whether land is brownfield or greenfield does not impact on the planning approval period. On average, for all sites, the planning approval period for the sites delivering 500 dwellings or more is almost identical at 5.1 years for brownfield and 5.0 years for greenfield – see Figure 11, although this is skewed by the very largest sites of 2,000+ units (see Table 2), with brownfield sites in the smaller-size bands being on average slightly quicker than their greenfield counterparts (albeit caution is required given the small sample size for some size bandings).

What the analysis tends to show is that it is the scale of development – rather than the type of land – which has the greatest impact on the length of planning process, and that despite government prioritisation on brownfield land in the NPPF, this is unlikely to result in significant further improvements in timescales for delivery.

The time period between gaining a planning approval and the first delivery of a dwelling is also similar overall.

Figure 11: Previous land use and duration of planning



Source: NLP analysis

Table 2: Previous land use and duration of planning approval period

	Site Size (dwellings)	Number of sites in this group	Average Planning Approval Period
Greenfield Sites	500-999	14	4.5
	1,000-1,499	9	5.3
	1,500-1,999	7	5.5
	2,000+	13	5.0
	Total/Average	43	5.0
Brownfield Sites	500-999	16	4.1
	1,000-1,499	3	3.3
	1,500-1,999	1	4.6
	2,000+	7	8.6
	Total/Average	27	5.1

Source: NLP analysis

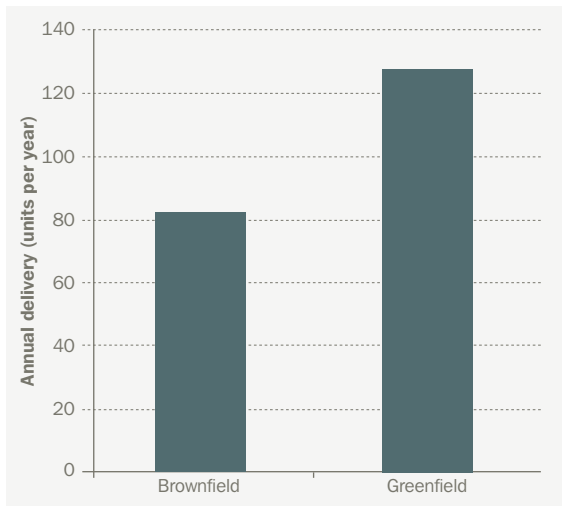
¹⁶ Brownfield comes first: why brownfield development works CPRE, March 2016

Build-out Rates

There is a more discernible difference between brownfield and greenfield sites when it comes to the annual build out rates they achieve, with the analysis in Figure 12 suggesting that brownfield sites on average deliver at lower rates than their greenfield counterparts, both overall and across the different size bandings (see Table 3) albeit recognising the small sample size for some sizes of site. On average, the annual build-out rate of a greenfield site is 128 dwellings per annum, around 50% higher than the 83 per annum average for brownfield sites.

This may reflect that brownfield sites carry extra costs (e.g. for remediation) which reduces the scale of contribution they make to infrastructure and affordable housing provision (which as shown can boost rates of delivery).

Figure 12: Previous land use and housing delivery



Source: NLP analysis

Table 3: Previous land use by size and average annual build out rate

	Site Size (dwellings)	Number of sites in this group	Average Annual Build-out Rate
Greenfield Sites	500-999	14	86
	1,000-1,499	9	122
	1,500-1,999	7	142
	2,000+	13	171
	Total/Average	43	128
Brownfield Sites	500-999	16	52
	1,000-1,499	3	73
	1,500-1,999	1	84
	2,000+	7	148
	Total/Average	27	83

Source: NLP analysis

Summary

1. Brownfield and greenfield sites come forward at broadly similar rates, although at the smaller end of the scale, there does appear to be some 'bonus' in speed of decisions for previously-developed land. For the largest sites (of 2,000+ units) the sample of brownfield sites suggests an extended time period (3.6 years longer) compared to their equivalent greenfield sites;
2. Once started, large-scale greenfield sites do deliver homes at a more rapid rate than their brownfield equivalents, on average 50% quicker.

Conclusion

There is a growing recognition that large-scale housing development can and should play a large role in meeting housing need. Garden towns and villages – planned correctly – can deliver sustainable new communities and take development pressure off less sustainable locations or forms of development.

However, if planners are serious about wanting to see more homes built each year and achieve the government’s target of one million by 2020 (or indeed, deliver the 300,000 per annum that are needed), simply allocating a site or granting a permission is not enough. The Government recognises this: the Minister for Planning has been quoted as saying that “*you cannot live in a planning permission*”.

Part of the debate has focused on perceptions of ‘land banking’ – the concept that developers are hoarding land or slowing down development. Equally, suggestions have been made that proposals for large-scale development should be ‘protected’ from competition from smaller sites or from challenge under five year land supply grounds. The evidence supporting these propositions appears limited.

In our view the real concern – outside London, at any rate – is ensuring planning decisions (including in plan-making) are driven by realistic and flexible housing trajectories in the first place, based on evidence and the specific characteristics of individual sites and local markets.

Based on the research in this document, we draw five conclusions on what is required:

1. If more homes are to be built, more land needs to be released and more planning permissions granted. Confidence in the planning system relies on this being achieved through local plans that must be sufficiently ambitious and robust to meet housing needs across their housing market areas. But where plans are not coming forward as they should, there needs to be a fall-back mechanism that can release land for development when it is required.
2. Planned housing trajectories should be realistic, accounting and responding to lapse rates, lead-in times and sensible build rates. This is likely to mean allocating more sites rather than less, with a good mix of types and sizes, and then being realistic about how fast they will deliver so that supply is maintained throughout the plan period. Because no one site is the same – and with significant variations from the average in terms of lead-in time and build rates – a sensible approach to evidence and justification is required.
3. Spatial strategies should reflect that building homes is a complex and risky business. Stronger local markets have higher annual delivery rates, and where there are variations within districts, this should be factored into spatial strategy choices. Further, although large sites can deliver more homes per year over a longer time period, they also have longer lead-in times. To secure short-term immediate boosts in supply – as is required in many areas – a good mix of smaller sites will be necessary.
4. Plans should reflect that – where viable – affordable housing supports higher rates of delivery. This principle is also likely to apply to other sectors that complement market housing for sale, such as build to rent and self-build (where there is demand for those products). Trajectories will thus need to differentiate expected rates of delivery to respond to affordable housing levels or inclusion of other market products. This might mean some areas will want to consider spatial strategies that favour sites with greater prospects of affordable or other types of housing delivery. This plays into the wider debate about support for direct housing delivery for rent by local government and housing associations and ensuring a sufficient product mix on sites.
5. Finally, in considering the pace of delivery, large-scale brownfield sites deliver at a slower rate than do equivalent greenfield sites. The very largest brownfield sites have also seen very long planning approval periods. Self-evidently, many brownfield sites also face barriers to implementation that mean they do not get promoted in the first place. In most locations outside our biggest cities, a good mix of types of site will be required.

A Checklist for Understanding Large-scale Site Delivery

In setting or assessing reasonable housing trajectories for local plans or five year housing land supply, the lead-in times and average rates of housing delivery identified in this research can represent helpful benchmarks or rules of thumb, particularly in situations where there is limited local evidence.

However, these rules of thumb are not definitive. It is clear from our analysis that some sites start and deliver more quickly than this average, whilst others have delivered much more slowly. Every site is different.

In considering the evidence justifying the estimated time and rate of delivery, the questions listed in Table 4 below represent a checklist of questions that are likely to be relevant:

Table 4: Questions to consider on the speed of housing delivery on large-scale sites

Lead-in times to getting started on site	Factors affecting the speed of build out rate
<input checked="" type="checkbox"/> Is the land in existing use?	<input checked="" type="checkbox"/> How large is the site?
<input checked="" type="checkbox"/> Has the land been fully assembled?	<input checked="" type="checkbox"/> Will the scale, configuration and delivery model for the site support more sales outlets?
<input checked="" type="checkbox"/> If in multiple ownership/control, are the interests of all parties aligned?	<input checked="" type="checkbox"/> How strong is the local market?
<input checked="" type="checkbox"/> To what extent is there any challenge to the principle of development?	<input checked="" type="checkbox"/> Does the site tap into local demand from one or more existing neighbourhoods?
<input checked="" type="checkbox"/> Is the site already allocated for development? Does it need to be in order for release?	<input checked="" type="checkbox"/> Is the density and mix of housing to be provided consistent with higher rates of delivery?
<input checked="" type="checkbox"/> Does an SPD, masterplan or development brief help resolve key planning issues?	<input checked="" type="checkbox"/> What proportion of affordable housing is being delivered?
<input checked="" type="checkbox"/> Is the masterplan/development brief consistent with what the developer will deliver?	<input checked="" type="checkbox"/> Are there other forms of housing – such as build to rent – included?
<input checked="" type="checkbox"/> Is there an extant planning application or permission?	<input checked="" type="checkbox"/> When will new infrastructure – such as schools – be provided to support the new community?
<input checked="" type="checkbox"/> Are there significant objections to the proposal from local residents?	<input checked="" type="checkbox"/> Are there trigger points or phasing issues that may affect the build rate achievable in different phases?
<input checked="" type="checkbox"/> Are there material objections to the proposal from statutory bodies?	
<input checked="" type="checkbox"/> Are there infrastructure requirements – such as access – that need to be in place before new homes can be built?	
<input checked="" type="checkbox"/> Are there infrastructure costs or other factors that may make the site unviable?	
<input checked="" type="checkbox"/> Does the proposal rely on access to public resources?	
<input checked="" type="checkbox"/> If planning permission is secured, is reserved matters approval required?	
<input checked="" type="checkbox"/> Does the scheme have pre-commencement conditions?	
<input checked="" type="checkbox"/> Is the scheme being promoted by a developer who will need time to dispose of the site to a house builder?	

Appendix 2: Small Sites Reviewed

Site Name	Local Planning Authority	Site Size
Holme Farm, Carleton Road, Pontefract	Wakefield	50
Part Sr3 Site, Off Elizabeth Close, Scotter	West Lindsey	50
Former Downend Lower School, North View, Staple Hill	South Gloucestershire	52
Fenton Grange, Wooler	Northumberland	54
Land at the Beacon, Tilford Road, Hindhead	Waverley	59
Land To Rear Of 28 - 34 Bedale Road, Aiskew	Hambleton	59
Hanwell Fields Development, Banbury	Cherwell	59
Land at Prudhoe Hospital, Prudhoe	Northumberland	60
Oxfordshire County Council Highways Depot	Cherwell	60
Clewborough House School, St Catherines Road	Cherwell	60
Land south of Pinchington Lane	West Berkshire	64
Land Off Cirencester Rd	Stroud	66
Springfield Road Caunt Road	South Kesteven	67
Land off Crown Lane	Wychavon	68
Former Wensleydale School, Dent Street, Blyth	Northumberland	68
Land at Lintham Drive, Kingswood	South Gloucestershire	68
Hawthorn Croft (Off Hawthorn Avenue Old Slaughterhouse Site), Gainsborough	West Lindsey	69
Land to the North of Walk Mill Drive	Wychavon	71
Watermead, Land At Kennel Lane, Brockworth	Tewkesbury	72
North East Area Professional Centre, Furnace Drive, Furnace Green	Crawley	76
Land at Willoughbys Bank, Clayport Bank, Alnwick	Northumberland	76
The Kylins, Loansdean, Morpeth	Northumberland	88
MR10 Site, Caistor Road, Market Rasen	West Lindsey	89
OS Field 9972 York Road Easingwold	Hambleton	93
Land At Green Road - Reading College	Reading	93
North East Sandylands	South Lakeland	94
Auction Mart	South Lakeland	94
Parcel 4, Gloucester Business Park, Brockworth	Tewkesbury	94
Former York Trailers Yafforth Road Northallerton Scheme 1/2	Hambleton	96
Poppy Meadow	Stratford-on-Avon	106
Weeton Road/Fleetwood Road	Fylde	106
Land South of Station Road	East Hertfordshire	111
Former Bewbush Leisure Centre Site, Breezehurst Drive, Bewbush	Crawley	112
Land West Of Birchwood Road, Latimer Close	Bristol, City of	119
Land Between Godsey Lane And Towngate East	South Kesteven	120
Bibby Scientific Ltd	Stafford	120
Kennet Island Phase 1B - E, F, O & Q, Manor Farm Road	Reading	125
Primrose Mill Site	Ribble Valley	126
Land Rear Of Mount Pleasant	Cheshire West and Chester	127
Land to the east of Efflinch Lane	East Staffordshire	130
North of Douglas Road, Kingswood	South Gloucestershire	131
Land at Farnham Hospital, Hale Road, Farnham	Waverley	134
Bracken Park, Land At Corringham Road, Gainsborough	West Lindsey	141
Doxey Road	Stafford	145
Former York Trailers Yafforth Road Northallerton Scheme 2/2	Hambleton	145

Site Name	Local Planning Authority	Site Size
London Road/ Adj. St Francis Close	East Hertfordshire	149
MR4 Site, Land off Gallamore Lane, Market Rasen	West Lindsey	149
Queen Mary School	Fylde	169
Sellars Farm, Sellars Road	Stroud	176
Land South of Inervet Campus Off Brickhill Street, Walton	Milton Keynes	176
Notcutts Nursery, 150 - 152 London Road	Cherwell	182
Hoval Ltd North Gate	Newark and Sherwood	196
Hewlett Packard (Land Adjacent To Romney House), Romney Avenue	Bristol, City of	242
128-134 Bridge Road And Nos 1 - 4 Oldfield Road	Windsor and Maidenhead	242
GCHQ Oakley - Phase 1	Cheltenham	262
Land off Henthorn Road	Ribble Valley	270
Land Between A419 And A417, Kingshill North, Cirencester	Cotswold	270
Hortham Hospital, Hortham Lane, Almondsbury	South Gloucestershire	270
Land At Canons Marsh, Anchor Road	Bristol, City of	272
M & G Sports Ground, Golden York and Middle Farm, Badgeworth	Tewkesbury	273
Long Marston Storage Depot Phase 1	Stratford-on-Avon	284
Land at Brookwood Farm, Bagshot Road	Woking	297
Land at, Badsey Road	Wychavon	298
Land At Fire Service College, London Road, Moreton in Marsh	Cotswold	299
Land At Dorian Road	Bristol, City of	300
Kennet Island Phase 1 - H, M, T, U1, U2 Manor Farm Road	Reading	303
Chatham Street Car Park Complex	Reading	307
Former NCB Workshops, Ellington Rd, Ashington (aka Portland Park)	Northumberland	357
Former Masons Cerement Works and Adjoining Ministry of Defence Land, Gipping Road, Great Blakenham	Mid Suffolk	365
Woolley Edge Park Site	Wakefield	375
Luneside West	Lancaster	403
Radyr Sidings	Cardiff	421
New World House, Thelwall Lane	Warrington	426
Land at former Battle Hospital, 344 Oxford Road	Reading Borough Council	434
New Central (Land at Guildford Road and Bradfield Close including Network House, Merrion House, Bradford House and Coronation House	Woking Borough Council	445
Kingsmead South	Milton Keynes Council	450
Bleach Green, Winlaton	Gateshead	456
Farington Park, East of Wheelton Lane	South Ribble	468
Bickershaw Colliery, Plank Lane, Leigh	Wigan	471
Farnborough Business Park	Rushmoor	476
Horfield Estate, Filton Avenue, Horfield	Bristol City Council	485
Stenson Fields	South Derbyshire	487
Cookridge Hospital	Leeds	495

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Nathaniel Lichfield & Partners (NLP) is an independent planning, economics and urban design consultancy, with offices in Bristol, Cardiff, Edinburgh, Leeds, London, Manchester, Newcastle and Thames Valley.

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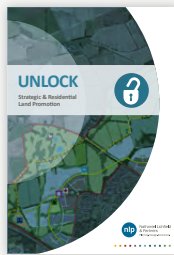
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-  Heritage
-  Property Economics
-  Site Finding & Land Assembly
-  Strategy & Appraisal
-  Urban Design

Appendix 2

Large sites delivery rates

Plan Ref	Address	Town/Parish	Area (ha)	Homes
BA1	North of Baldock	Baldock	142.4	2500
BA1	North of Baldock	Baldock	142.4	2500
HT1	Highover Farm, Stotfold Road	Hitchin	38.9	700
HT1	Highover Farm, Stotfold Road	Hitchin	38.9	700
LG1	Letchworth North	Letchworth	44.9	900
LG1	Letchworth North	Letchworth	44.9	900
EL1	Luton East (west)	Luton (adjoining)	69.3	1050
EL1	Luton East (west)	Luton (adjoining)	69.3	1050
EL3	Luton North East of Luton	Luton (adjoining)	33.8	700
EL3	Luton North East of Luton	Luton (adjoining)	33.8	700
GA2	Land off Mendip Way, Great Ashby	Stevenage (adjoining)	49.1	600
GA2	Land off Mendip Way, Great Ashby	Stevenage (adjoining)	49.1	600
NS1	Stevenage North	Stevenage (adjoining)	43.2	900
NS1	Stevenage North	Stevenage (adjoining)	43.2	900

Total difference across the plan period (looking at sites over 500 dwellings)	1675
Total difference across 5 year period (looking at sites over 500 dwellings)	820

Monitoring Year Ending								
2018	2019	2020	2021	2022	2023	2024	2025	2026
			50	100	150	275	275	275
						143	171	171
		50	100	100	100	100	100	100
					22	86	86	86
					100	100	100	100
					22	86	86	86
			50	100	100	100	100	100
						61	122	122
			60	60	60	60	60	60
					22	86	86	86
			50	100	100	100	100	100
					22	86	86	86
						50	100	125
					22	86	86	86

2027	2028	2029	2030	2031	Total
275	275	275	275	275	2500
171	171	171	171	171	1340
50					700
86	86	86	86	76	700
100	100	100	100	100	900
86	86	86	86	86	710
100	100	100	100	100	1050
122	122	122	122	122	915
60	70	70	70	70	700
86	86	86	86	76	700
50					600
86	86	86	62		600
125	125	125	125	125	900
86	86	86	86	86	710

Comments
Greenfield
1160 difference across plan period
150 difference across 5 year period
Greenfield
No difference across plan period.
250 difference across 5 year period
Greenfield
190 difference across plan period
No difference across 5 year period
Greenfield
135 difference across plan period
150 difference across 5 year period
Greenfield
No difference across plan period
120 difference across 5 year period
Greenfield
No difference across plan period
150 difference across 5 year period
Greenfield
190 difference across plan period
No difference across 5 year period