

# **Examination of the Welwyn Hatfield Local Plan**

## **Delivery and Density Assumptions in the Proposed Submission Local Plan 2016 Housing Trajectory**



## **Delivery and Density Assumptions in the Proposed Submission Local Plan Housing Trajectory**

- 1.1 This note and the attached table has been produced by the Council in response to the Inspector’s request for a single document setting out the delivery and density assumptions behind the Housing Trajectory contained in Appendix A of the Proposed Submission Local Plan. The attached table, therefore, relates to the housing target of 12,000 dwellings and not the updated housing land supply figures set out in Table 2 of the Council’s Hearing Statement for Stage 2 Matter 7.
- 1.2 A summary of the methodology used to inform these assumptions is set out below. Whilst this assessment approach has informed the site capacity and deliverability of the allocated sites in the submitted Local Plan, the Council will continue to review density and delivery throughout the examination process. Changing circumstances or updated information may mean that some site capacities are revised or the phasing of delivery set out in the trajectory amended.

### **Gross and net density definitions**

- 1.3 Density can be defined either in terms of gross or net. Net density is applied to the land that is available for the residential development and normally excludes roads and other land uses whilst gross is the density applied to the whole site area. The Housing and Economic Land Availability Assessment (HELAA), 2016 (HOU/19) sets out methodologies for calculating gross densities, which provide a good indication of potential site capacity.

### **Density assumptions**

- 1.4 The Council approach to assessing the capacity/density of sites is set out on pages 13-16 of the HELAA outline the approach used to assess development potential for urban and Green Belt sites and this is summarised below.

#### *Assumptions for Green Belt sites*

- 1.5 A net density of 40 dph is considered appropriate as a starting point for Green Belt sites, as it is the mid-point of the density range recommended in existing and emerging plan policy. However, to allow for the principle that the gross housing density on larger sites tends to be lower than on small sites due to the need to deliver a level of social and physical infrastructure unlikely to be required on smaller sites, the following gross to net densities have been applied:

Table 1 Green Belt housing site density assumptions

<b>Site size (hectares)</b>	<b>Gross density</b>	<b>Net density</b>
Less than 2ha	40 dwellings per ha (dph)	40 dwellings per ha (dph)
Between 2 and 6ha	30 dwellings per hectare (dph)	40 dwellings per ha (dph)
More than 6ha	25 dwellings per ha (dph)	40 dwellings per ha (dph)

- 1.6 The gross density of sites smaller than 2 hectares is the same as the net density, but the gross density of larger sites will be lower because more space will be needed to provide associated supportive infrastructure such as roads, play space, schools, shops and other facilities. This approach is based on research carried out on behalf of the government by URBED and Llewellyn Davies<sup>1</sup>.

### *Assumptions for urban sites*

- 1.7 By contrast to the Green Belt housing sites, the urban housing sites are located in a wide variety of existing development contexts. Characteristic density around the borough varies significantly. Both the NPPF and policies in the emerging Local Plan require development proposals to make the most effective possible use of urban land with higher densities in more accessible locations such as town centres. Therefore, it is necessary to use a range of density scenarios for the urban area, reflecting the local context and sustainability of the location. The Green Belt density assumption was the 'baseline' starting point scenario for urban sites.
- 1.8 Three additional scenarios for urban site density have then been devised based on the Tribal Architects case studies which were developed for the first Strategic Housing Land Availability Assessment 2010 (HOU/1) – medium density (50dph), high density (70dph), and very high density (90dph). Medium density development would generally consist of (and be appropriate where local context consisted of) a mixture of houses and flats, whereas high density would be primarily flats. Very high density development – likely to consist entirely of flats – would only be appropriate in highly accessible locations, where both taller buildings and reduced levels of car parking would be acceptable.
- 1.9 In common with the Green Belt site approach of reducing density as site size increases (in order to provide for serving infrastructure and green space), urban sites should also move one 'step' down the density scenarios as they exceed 2 hectares and 6 hectares in size. For example: if a high density scenario was appropriate for a site by virtue of its context but the site was larger than 2 hectares, the medium density scenario would be used. The full list of densities applied to urban sites by size is therefore:

Table 2 Urban housing sites density assumptions

Site size (hectares)	Appropriate density scenario			
	Baseline	Medium	High	Very high
Less than 2 ha	40dph	50dph	70dph	90dph
Between 2 and 6 ha	30dph	40dph	50dph	70dph
More than 6 ha	25dph	30dph	40dph	50dph

<sup>1</sup> URBED and Llewellyn Davies (1999) Tapping the Potential Report  
<http://www.urbed.coop/sites/default/files/Tapping%20the%20Potential%20Report.pdf>

### *Urban Special case scenarios- i.e. Mixed use sites, existing planning applications*

- 1.10 Development options for some urban HELAA sites are already well established as a result of their progress through the planning process. Some already form adopted policy as a result of the site's appearance in a Supplementary Planning Document, whilst others are already the subject of planning applications. Rather than applying an arithmetical capacity calculation on these sites, the HELAA has carried forward the established dwelling numbers and resultant densities for them as 'special case' scenarios.
- 1.11 The density for mixed use sites can be difficult to assess particularly where different land uses occupy the same footprint. For example, where there is retail development at ground floor level and residential uses above.
- 1.12 On sites where, for example, employment development maybe envisaged alongside residential development, then plot ratios can be used to take into account the likely proportion of the site that will not be available for residential. The 'special case' scenarios are identified and detailed in the table.

### *Density adjustments*

- 1.13 In some cases the development potential of a site has been adjusted in parallel to assessing a site's overall suitability to take of account any site-specific factors, such as site constraints. This is achieved by reducing the gross density for the site to a level deemed more appropriate, for example proximity to a noise source such as a main road or railway. In some cases it may also be appropriate to reduce the developable area of the site, for example to take account of a flood zone. The site specific reasons for such adjustments are explained in the comments section of the table.

### *Net density*

- 1.14 As the HELAA is dealing with site areas, not layouts at this stage, the Council has applied a formulaic approach to determining net densities. Gross to net ratios have been applied to identify indicative net densities for each site based on the scenarios in the HELAA. So to calculate net density the following formula has been applied:

- Gross density / The relevant ratio by scenario x 100

- 1.15 For clarity, the conversion ratios that inform this calculation are set out in the following tables for the Green Belt and urban scenarios.

Table 3 Ratios for Green Belt housing site density assumptions

Site size (hectares)	Gross density	Net density	Conversion ratio between gross and net
Less than 2ha	40dph	40dph	100%
Between 2 and 6ha	30dph	40dph	75%
More than 6ha	25dph	40dph	62.5%

Table 4 Ratios for urban housing sites baseline density assumptions

Site size (hectares)	Baseline density (gross)	Baseline density (net)	Baseline density conversion ratio between gross and net
Less than 2 ha	40dph	40dph	100%
Between 2 and 6 ha	30dph	40dph	75%
More than 6 ha	25dph	40dph	62.5%

Table 5 Ratios for urban housing sites medium density assumptions

Site size (hectares)	Medium density (gross)	Medium density (net)	Medium density conversion ratio between gross and net
Less than 2 ha	50dph	50dph	100%
Between 2 and 6 ha	40dph	50dph	80%
More than 6 ha	30dph	50dph	60%

Table 6 Ratios for urban housing sites high density assumptions

Site size (hectares)	High density (gross)	High density (net)	High density conversion ratio between gross and net
Less than 2 ha	70dph	70dph	100%
Between 2 and 6 ha	50dph	70dph	71%
More than 6 ha	40dph	70dph	57%

Table 7 Ratios for urban housing sites very high density assumptions

Site size (hectares)	Very high density (gross)	Very high density (net)	Very high density conversion ratio between gross and net
Less than 2 ha	90dph	90dph	100%
Between 2 and 6 ha	70dph	90dph	78%
More than 6 ha	50dph	90dph	56%

- 1.16 The net densities provide a good indication of site development potential, but more detailed layout plans at masterplanning and/or planning application stage may mean densities vary slightly (either upwards or downwards).

### Deliverability of sites

- 1.17 The methodology for assessing the deliverability of sites is set out on page 19 of the HELAA. Each site which passes the Stage 2 HELAA Assessment is identified as being either deliverable, developable, or not currently developable within the plan period, in line with the NPPF.

- Deliverable (within five years of adoption of the Local Plan):  
Site is available now, offers a suitable location for development now, has a realistic prospect that housing will be delivered on the site within five years, and development of the site is viable.
  - Developable (within the 6-15 years of adoption of the Local Plan):  
Site is in a suitable location for development and there is a reasonable prospect that the site is available and could be viably developed at the point envisaged.
- 1.18 The HELAA has also broken down the potential period of deliverability of sites into a greater number of categories. This was done to reflect the nature of sites and constraints affecting sites that were being assessed within the HELAA in order to arrive at a more representative estimate of deliverability than the standard 6-10 and 11-15 categories are capable of providing. The categories are:
- 0-5 years of plan adoption (deliverable)
  - 1-10 years
  - 0-15 years
  - 6-10 years (developable)
  - 6-15 years (developable)
  - 11-15 years (developable)
- 1.19 When making this assessment, the HELAA takes into account policy, legal, infrastructure or physical constraints or other circumstances affecting a site. Where constraints are identified consideration is given to how this might impact on timescales. Where there are uncertainties these have been acknowledged and an estimation of the period when a site could be developed has been made. For example, in some areas Thames Water have concerns about the cumulative impact of development on the wastewater treatment capacity and highlight the importance of not underestimating the time to deliver necessary infrastructure. They advise that local network upgrades can take around 18 months to 3 years to design and deliver.
- 1.20 Therefore, the trajectory in the Local Plan takes account of the lead-in times of delivering such infrastructure. For some sites the requirement for bespoke infrastructure will delay the delivery of the sites. However, as constraints are overcome some sites could be developed sooner than originally estimated. Alternatively sites coming forward at the start of the trajectory may slip due to unforeseen circumstances such as a change of landowner.
- 1.21 Other matters such as land owner intention and the need for masterplanning and public consultation on larger sites may also impact lead-in times. Delivery on these larger sites will take place over several years, based on the assumption there are several housebuilders on a site each delivering 50 to 75 dwellings per annum. Estimates are aided by experience and evidence of historic build out rates. Once sites gain planning permission, further information on likely build-out rates is often gained from information submitted with planning applications.





Supply Source	Plan period actual/estimated housing delivery by year (DLPPS 2016)															Plan period total	Delivery Assumptions			Density assumptions		Comments						
	Pre-Adoption		1-5 years				6-10 years				11-15 years						Delivery within plan period (years)	Reason	Notes	(Allocated) Site Area (ha)	HELAA Density starting point methodology/ scenario		Concluded density (gross)	Concluded density (net)				
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28										2028/29	2029/30	2030/31	2031/32
HS10 (HS31) - Garages at Hollyfield, Hatfield							14													14	0-5	Site actively promoted.		0.27	Urban medium density 50 dph (gross)/ 50dph (net)	50 dph	50dph	Medium density of 50dph considered appropriate in location
HS11 (Hat11) - Land at Southway, Hatfield																				120	0-10	Site actively promoted. Waste water network upgrades may impact on delivery by 18-36 months		6	GB site > 6ha: starting point 25dph (gross)/40dph (net)	20dph	32dph	Capacity reduced to allow for mitigation of air and noise pollution from transport routes, buffer to adjoining wildlife site and wider site ecology, and easement for rights of way. Since the HELAA, proposal updated to include primary school but HELAA methodology anticipates this type of infrastructure (takes up 0.41 ha of site) and residential capacity still achievable
HS13 (HS91) - Land south of Filbert Close, Hatfield										18	19									37	6-10	Site actively promoted. Landowner indicates timescale of 6-10 yrs.	May be potential for earlier delivery	0.92	Urban medium density 50dph (gross)/ 50 dph (net)	40dph	40dph	Need to provide buffer to park and relate to adjoining dwellings so density reduced to 40dph
HS14 (HE23) - L Kahn Factory Site, Wellfield Rd, Hatfield																31	31			62	6-15	Site actively promoted. Waste water network upgrades may impact on delivery by 18-36 months. Relocation of existing factory likely to take some time., hence position in trajectory		0.88	Urban very high density 90dph (gross)/ 90dph (net)	70dph	70dph	A 'very high density' scenario is considered appropriate in this location – similar to densities around the site. However, sensitive relationship to existing homes to the north necessitates caution down to 70dph.
HS15 (WG1) - Land east of London Rd, Woolmer Green																				150	0-10	Site actively promoted. Waste water network upgrades may impact on delivery by 18-36 months.		7.66	GB site > 6ha: starting point 25dph (gross)/40dph (net)	20dph	32dph	Larger site of 7.66ha allocated but developable area relates to a slightly smaller site area for residential (6.86ha) to allow for small retail unit/ancillary cafe and landscape buffers. On smaller site area, density of 22dph (gross)/ 35dph (net)
HS16 (OMH8) - 2 Great North Road, O&MH																				5	0-5	Site actively promoted.		0.22	GB site <2ha: starting point 40dph (gross)/40dph (net)	23dph	23dph	Capacity reduced to allow for mitigation due to proximity of the A1 (M) and developable area reduced from 0.22ha to 0.15ha to allow for retention of wooded area adjacent A1(M).
HS17 (OMH5) - Rear of 2-12 Great North Road, O&MH																				20	6-10	Site actively promoted but multiple ownership, covenants and legal interests in the site are complex.		1.53	GB site <2ha: starting point 40dph (gross)/40dph (net)	13dph	13dph	Site affected by a number of constraints. 1.5ha developable area part of a larger 1.53ha site. Capacity reduced due to proximity of the A1 (M), sloping topography and to prevent development from being overbearing. Developable area excludes woodland area adjacent A1(M).
HS18 (Wel11) - 'The Vineyards', Welwyn								15	15											30	0-5	Site actively promoted.		1.2	GB site <2ha: starting point 40dph (gross)/40dph (net)	25dph	25dph	Capacity reduced to take account of the need to provide buffer to Wildlife Site/LNR, the need to respond to noise pollution concerns and the sloping nature of the site
HS19 (Wel4) - 'Sandyhurst', The Bypass, Welwyn																				30	0-5	Site actively promoted.		1.0	GB site <2ha: starting point 40dph (gross)/40dph (net)	30 dph	30 dph	Capacity reduced to allow for buffer from A1 (M) to mitigate against noise, retention of trees and habitats and possible need for ecological compensation.

Supply Source	Plan period actual/estimated housing delivery by year (DLPPS 2016)															Plan period total	Delivery Assumptions			Density assumptions			Comments					
	Pre-Adoption		1-5 years				6-10 years				11-15 years						Delivery within plan period (years)	Reason	Notes	(Allocated) Site Area (ha)	HELAA Density starting point methodology/ scenario	Concluded density (gross)		Concluded density (net)				
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28										2028/29	2029/30	2030/31	2031/32
HS20 (Wel3) - Land at School Lane, Welwyn								7												7	0-5	Site actively promoted.		1.3	GB site <2ha: starting point 40dph (gross)/40dph (net)	5dph	5dph	Highway Authority supports limited development only given access and highway network constraints, Capacity constrained to 0.74ha, as site already contains three dwellings plus a pumping station in the centre of the site, which will be retained. Also need to retain trees (e.g. buffer to electricity sub-station) or allow for compensatory planting. Low density appropriate.
HS21 (BrP13) - Land west of Golf Club Rd, Brookmans Park								14												14	0-5	Site actively promoted.		0.7	GB site <2ha: starting point 40dph (gross)/40dph (net)	20dph	20dph	Capacity limited due to highway network constraints and to avoid loss of woodland
HS22 (BrP4) - Land west of Brookmans Park Railway Stn										50	50	50	50	50						250	0-10	Site actively promoted. Waste water network upgrades may impact on delivery by 18-36 months. Provision of new footbridge may impact on delivery.		18.2	GB site >6ha: starting point 25dph (gross)/ 40dph (net)	14dph	22dph	Larger site (20.2ha) but developable area limited to 18.2ha due to flood zone and proximity to ancient woodland. HELAA identified potential for higher capacity (300 - highway constraints) but 250 LP allocation reflects primary school capacity at time of Draft Local Plan
HS23 (BrP14) - Land east of Golf Club Rd, Brookmans Park										10										10	0-10	Site actively promoted. Waste water network upgrades may impact on delivery by 18-36 months.		0.5	GB site <2ha: starting point 40dph (gross)/40dph (net)	20 dph	20dph	Capacity limited due to highway network constraints
HS24 (BrP7) - Land north of Hawkshead Road, Little Heath											34	33	33							100	0-10	Site actively promoted. Waste water network upgrades may impact on delivery by 18-36 months.		3.3	GB site between 2 and 6ha: starting point 30 dph (gross)/ 40dph (net)	30dph	40dph	Capacity limited reflects heritage and ecological constraints. Site boundary drawn to maintain a gap between Little Heath and Swanley Bar
HS25 (LHe1) - Land south of Hawkshead Road, Little Heath								17	18											35	0-10	Upgrade to wastewater infrastructure, likely to take between 18 months and 3 years.		1	GB site <2ha: starting point 40dph (gross)/40dph (net)	35dph	35dph	Developable area of 0.93ha forms part of a slightly larger site of 1ha. Once existing farm buildings have been excluded, density of 38dph (gross) and (net)
HS26 (No02) - 36 The Ridgeway and land to rear, Cuffley								-1	9											8	0-5	No deliverability issues.		0.92	Urban baseline density 40dph (gross)/ 40dph (net)	10dph	10dph	10 dph is the maximum density due to the requirement for a buffer to the adjacent ancient woodland/wildlife site.
HS27 (Cuf1) - Land north of The Meadoway, Cuffley									15	15										30	0-5	Upgrade to wastewater infrastructure to support demand, likely to take 18 months to 3 years.		2.9	GB site between 2 and 6ha: starting point 30 dph (gross)/ 40dph (net)	10dph	13dph	Capacity limited to 30 dwellings in accordance with highways access appraisal, resulting in a lower density. This will also allow for a buffer to Cuffley Brook and ecosite and the railway line.
HS28 (Cuf6) - Land south of Northaw Road East, Cuffley									35	40	33									108	0-10	Wastewater infrastructure upgrade to support demand.		4.4	GB site between 2 and 6ha: starting point 30 dph (gross)/ 40dph (net)	25dph	33dph	HELAA estimated a developable area of 3.6ha to allow for easement corridor with overhead power lines and buffer to railway line. Planning application for 121 dwellings so slightly higher capacity/density may be achieved.
HS29 (Cuf12) - Land north of Nothaw Road East, Cuffley											35	38								73	0-10	Wastewater infrastructure upgrade to support demand.		2.9	GB site between 2 and 6ha: starting point 30 dph (gross)/ 40dph (net)	25dph	33dph	A slightly higher capacity may be possible if topography of site can be sensitively managed in the design process and in light of need to manage overland flow (subject to highway network capacity)

Supply Source	Plan period actual/estimated housing delivery by year (DLPPS 2016)																Plan period total	Delivery Assumptions			Density assumptions		Comments						
	Pre-Adoption		1-5 years				6-10 years				11-15 years				Delivery within plan period (years)	Reason		Notes	(Allocated) Site Area (ha)	HELAA Density starting point methodology/ scenario	Concluded density (gross)	Concluded density (net)							
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27										2027/28	2028/29	2029/30	2030/31	2031/32	
HS30 (Cuf7) - Wells Farm, Northaw Road East, Cuffley												35	40							75	6-10	Upgrade to wastewater infrastructure.		3.0	GB site between 2 and 6ha: starting point 30 dph (gross)/ 40dph (net)	25dph	33dph	Capacity of the site reduced to reflect topography of the site, fluvial flood risk, and to allow for habitat creation.	
HS31 (No10) - Land west of St Martins Church, Cuffley																	5			5	11-15	Landowner indicated site may come forward in conjunction with an adjacent site		0.17	Urban baseline density 40dph (gross) / 40dph (net)	29dph	29 dph	Capacity limited as Highways Authority advise no more than 5 dwellings should be served by a single track driveway.	
HS32 (GTLAA04) - 'Four Oaks', Great North Road, O&MH								6												6	0-5	Site actively promoted. Planning application awaiting determination		0.55	Special case - assessed for Gypsy and Traveller pitches.. Capacity and density shown as dwelling equivalents	20dph	20dph	5 authorised pitches. Local Plan allocation proposes an additional 6 pitches, so total of 11 pitches on a 0.55ha site. For density calculation purposes, 1 pitch = 1 dwelling	
HS33 (GTLAA08) - Barbraville, Hertford Rd nr. Mill Green												4								4	0-10	Site actively promoted. Detailed access proposals are required.		0.267	Special case - assessed for Gypsy and Traveller pitches.. Capacity and density shown as dwelling equivalents	15dph	15dph	Local Plan proposes 4 pitches to the north of existing site. However, access may require re-provision of a pitch. Site specific FRA will be required and SuDs may be required	
HS34 (GTLAA09) - Land at Coopers Green Lane													6	4						10	0-15	Off-site contribution associated with SDS6 (Hat15)		1.195	Special case - assessed for Gypsy and Traveller pitches.. Capacity and density shown as dwelling equivalents	8dph	8dph	Site has capacity to accommodate higher number of pitches although best practice and ECS approach is to limit sites to a maximum of 15 pitches. Allocation is for 10 pitches reflecting proportionate relationship to the number of dwellings at strategic development sites.	
HS35 (GTLAA01) - Foxes Lane, Welham Green							12													12	0-5	Planning application awaiting determination		0.8	Special case - assessed for Gypsy and Traveller pitches.. Capacity and density shown as dwelling equivalents	15dph	15dph	Proposed allocation for 12 pitches on the 0.8ha site (which excludes the site area occupied by 3 existing authorised pitches)	
<b>Local Plan Site Allocations Total</b>						143	320	596	804	935	858	721	771	774	523	562	410	382	230										
Core allowance								70	70	70	70	70	70	70	70	70	70	70	70	840									
Additional allowance																				350									
Hatfield Town Centre allowance										12	12	12	12	12	13	13	13	13	13	125									
<b>Windfall Total</b>							70	70	82	82	82	82	82	82	153	153	153	153	153										
<b>Non-implementation allowance</b>																				-20									
<b>Overall total by year</b>	<b>295</b>	<b>354</b>	<b>408</b>	<b>556</b>	<b>463</b>	<b>218</b>	<b>590</b>	<b>808</b>	<b>953</b>	<b>1,017</b>	<b>940</b>	<b>816</b>	<b>853</b>	<b>856</b>	<b>674</b>	<b>734</b>	<b>563</b>	<b>543</b>	<b>383</b>	<b>12,004</b>									

	Estimated performance against housing target by year*																		
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
Housing target by year	498								752										
Performance against target within individual year	-203	-144	-90	58	-35	-280	92	310	455	265	188	64	101	104	-78	-18	-189	-209	-369
Cumulative housing target from start of plan period	498	996	1,494	1,992	2,490	2,988	3,486	3,984	4,482	5,234	5,986	6,738	7,490	8,242	8,994	9,746	10,498	11,250	12,002
Performance against plan period target	-203	-347	-437	-379	-414	-694	-602	-292	163	428	616	680	781	885	807	789	600	391	22