



Huntingdonshire District Council

LOCAL PLAN VIABILITY TESTING:
MODELLING ASSUMPTIONS PAPER

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1. Introduction

1.1. Background

Huntingdonshire District Council (HDC) has appointed Cushman & Wakefield to assist in the preparation of its emerging local plan, Huntingdonshire Local Plan 2036 (HLP 2036) through an iterative process of testing viability (Growth Viability Assessment), including:

- a. Policy development viability testing
- b. Affordable housing requirement viability testing
- c. Site-specific viability testing
- d. Viability testing for a range of site types

The primary objectives of the Growth Viability Assessment are to:

- a. support the deliverability of the HLP2036, by ensuring that the Local Plan vision, allocations and policies are viable and deliverable; and
- b. enable the Council to maximise gain through planning obligations in order to improve delivery of infrastructure and affordable housing, whilst balanced against the desire to encourage growth and delivery across the district.

The Growth Viability Assessment picks up on the viability testing process initiated for HDC by Deloitte Real Estate (DRE) in 2014, recognising the continued changes in the residential development market since that time. Accordingly, the proposed modelling approach reflects a range of residential development typologies across a variety of value areas, ranged to be representative of the character of the District and the proposed sites in HLP 2036.

The typologies will be tested for viability across a range of affordable housing provision scenarios, taking into account the CIL charging regime as at December 2016 (whilst the charging schedule was updated in January 2017, the assumptions are based on development data drawn from the final quarter of 2016, and so to maintain balance, the 2016 CIL rate has been used), S106 requirements, current affordable housing transfer values, development values across the District and Cushman & Wakefield researched based assumptions on development costs and values.

The resulting residual development values for the typologies are compared with benchmark land values considered sufficient for a “willing land owner” to bring their land forward for development (consistent with paragraph 173 of the NPPF).

2. Summary Development Assumptions

2.1. Introduction

Drawing on individual site assessments undertaken through an Environmental Capacity and Land Availability Assessment, HLP 2036 includes a packages of sites proposed as capable of delivering the development strategy for the district up to 2036. For each site, HLP 2036 has assumed certain development densities, and the proposed modelling has sought to reflect this by way of the typologies tested. On this basis, a number of different typologies will be tested to reflect the different circumstances of sites across Huntingdonshire District, as proposed in the Local Plan, including:

- Market Area (expressed through different assumptions regarding sales values and benchmark land values)
- Development Size
 - o A range from 11 dwellings, through to 1,500 dwellings
- Development Context
 - o Greenfield
 - o Previously Developed Land
- Development Density:
 - o 60 dwellings per hectare (dph) - (Tested at 50 dwellings, Previously Developed Land only)
 - o 50 dwellings per hectare (dph) - (Tested at 25 dwellings (Ramsey); 50 dwellings (Ramsey, Huntingdon, and St Ives); and 100 dwellings (Huntingdon) – all assuming Previously Developed Land only)
 - o 40 dwellings per hectare (dph) - (Tested at 1,500 dwellings, Greenfield and £240/sqft value band only)
 - o 35 dwellings per hectare (dph) – (Tested at 11 – 1,500 dwellings, Greenfield and Previously Developed Land)
- Value Points. Broadly reflecting the location of the allocations that the typologies tested seek to reflect, the following value points are proposed to be tested, by density typology..

Value Point (£/sqft)	Density			
	35dph	40dph	50dph Houses and Apartments	60dph (Apartments)
£200				
£220				
£225				
£230				
£235				
£240				
£260				
£270				
£290				
£295				
£300				

2.2. Dwelling Sizes

These are sensitive to the development density tested, as follows:

Density Tested	Average Dwelling Size	
35dph	1,050 sqft (market)	For market dwellings, an average size of 1,050 sqft was assumed, and which is within the average range suggested by analysis of the SHMA recommendations regarding houses (1,041sqft to 1,111sqft). For the affordable dwellings, an average size of 750sqft was agreed with the HDC Policy and Enabling Officer.
40dph	950 sqft (market)	Assumes a smaller average size of dwelling than 35dph on account of the higher density (Presuming all houses). For the affordable dwellings, an average size of 750sqft was agreed with the HDC Policy and Enabling Officer.
50dph	885 sqft	Assumes a blend of apartments (25%) and townhouses (75%). Assumes all apartments average 600sqft net. This assumes a net to gross ratio of 85%, for the purposes of calculating Gross Internal Area. Assumes the town houses average 975sqft. The blended (Net Internal Area) average of the apartments and townhouses is 885sqft
60dph	600 sqft	Assumes all apartments (600sqft net, assuming a net to gross ratio of 85%, for the purposes of calculating Gross Internal Area)

2.3. Transfer Value for Affordable Housing

It is proposed that affordable housing policy will be tested on the basis of a tenure split of 70% Affordable Rented, and 30% Shared Ownership.

On the basis of this, and in consultation with the Huntingdonshire District Council Policy and Enabling Officer (after his consultation with a number of providers), a blended transfer value rate of 54.5% has been proposed to be tested.

2.4. Development Phasing (35 dph and 40 dph typologies)

The schedule below, sets out our assumptions regarding development phasing, for the 35dph and 40 dph typologies.

Phasing	Development Timetable (Months, unless otherwise stated)								
	11	25	50	75	150	250	500	750	1500
Number of Dwellings	11	25	50	75	150	250	500	750	1500
Start on Site	1	1	1	1	1	1	1	1	1
Construction Phase Start	5	5	5	5	5	5	5	5	5
Sales Phase Start	11	11	11	11	11	11	11	11	11
Construction Complete	10	10	17	23	42	67	67	98	192
Sale Complete	13	16	23	29	48	73	73	104	198
Construction Phase and Completions									
Construction Phase (Years)	0.5	0.5	1.0	1.6	3.1	5.2	5.0	7.5	15.1
Completions per annum	48	48	48	48	48	48	100	100	100
Infrastructure Phasing									
Infrastructure Start						1	1	1	1
Duration						24	36	48	96
Infrastructure End						25	37	49	97

Construction is assumed to begin after an initial development lead in period, with sales six months after the commencement of the construction phase. The length of the construction phase assumes around 48 dwellings per annum for the typologies of 250 dwellings and under, where it is assumed there will be one development point, and up to 100 dwellings per annum (on average) for the larger typologies, where there will be two (or potentially more for the 1,500 dwelling typology) development points.

For the 1,500 dwelling typology, there may be up to 3 development points on site, during the peak development period, and arguably a higher average rate of around 120dw /annum might be appropriate. We have been cautious, however, on the basis that the modelling is not site specific, and have taken an “in the round” approach on development rate alongside our consideration of infrastructure phasing and the effect this can have on the timing of residential development phasing. For most sites we have been involved in, at least one development point is able to begin prior to, or at the same time as, the infrastructure development phase, which is reflected in the phasing assumption, above.

With regard to the timing and duration of the infrastructure phasing, we have taken a cautious approach, with essentially all infrastructure investment complete by between halfway and two thirds through the scheme. Also, the infrastructure investment is complete earlier for the 250 dwelling typology, in relative terms, when considered against the length of the residential development period, compared to the other strategic site typologies. This is due to certain elements of infrastructure (such as a major utilities connection) likely be required early on in a scheme irrespective of its size.

2.5. Development Phasing (50 dph and 60 dph typologies)

60dph Typology (50 dwellings)

This is an apartment based typology, and the development phasing reflects the nature of apartment development, for which sales can only begin on completion of the construction phase. On this basis, a twelve month construction phase is followed by a twelve month sales period.

50dph Typology (25, 50 and 100 dwellings)

This typology is a blend of apartments and houses, and the development phasing reflects this.

- 100 dwellings:
 - The apartment (25 dwellings) element spans a 2 year build period, with sales beginning after 12 months with the completion of the first apartment block (and on practical completion for the affordable apartments)
 - The housing element (75 dwellings) assumes a 2 year build period, with sales beginning six months into the construction period over a period of 19 months
- 50 dwellings:
 - The apartment (12 dwellings) element assumes a 1 year build period, with sales beginning after 12 months with the completion of the apartment block (and on practical completion for the affordable apartments)
 - The housing element (38 dwellings) assumes a 1 year build period, sales begin with the construction completion of the apartment element. (the small size of the scheme meaning it would be impractical for sales completions on the houses whilst the apartment block is still under construction)
- 25 dwellings
 - The apartment (6 dwellings) element assumes a 1 year build period, with sales beginning after 12 months with the completion of the apartment block over a period of six months (and on practical completion for the affordable apartments)
 - The housing element (19 dwellings) is phased such that sales only begin with the practical completion of the apartment element (the small size of the scheme meaning it would be impractical for sales completions on the houses whilst the apartment block is still under construction)

2.6. Construction Costs (Houses)

The schedule below sets out the construction cost assumptions used (including garages) for houses. The highest cost typologies are the smaller typologies of 11 and 25 dwellings, and which directly relate to the BCIS median build cost for Estate Housing, weighted for Cambridgeshire (as of November 2016, when the regional cost weighting was 100). Typologies of this size represent small sites that will only appeal to smaller housebuilders, whilst sites of 50 dwellings and over will tend to appeal to larger national housebuilders, and we have adjusted costs based on our current understanding of such costs.

The cost rate applied to the “strategic site” typologies of 250 dwellings and above is reduced to £109.5/sqft on the basis that the cost build up excludes the 10% abnormal uplift applied to the smaller typologies. This is to avoid an element of double counting as special provision is already separately made for strategic site costs (refer to 2.8, below), and also brings the all in build costs (£109.5/sqft) more in line (but still higher) with recent schemes we have assessed.

With particular regard to the allowances made for contingency costs and fees, we have taken a cautious approach, in line with the approach advocated by Harman (Viability Testing Local Plans) and then National Planning Practice Guidance, to plan for “changing” markets over the Local Plan period. We would normally expect to see contingency allowances, particularly for greenfield development to be around 2.5%, rather than 5%, whilst fee allowances can be as low as 4% for larger sites.

Build Costs	Number of Dwellings								
	11	25	50	75	150	250	500	750	1500
Base Construction	£97.6	£97.6	£85.0	£85.0	£85.0	£85.0	£85.0	£85.0	£85.0
Externals @ 12%	£11.7	£11.7	£10.2	£10.2	£10.2	£10.2	£10.2	£10.2	£10.2
Sub Total	£109.3	£109.3	£95.2	£95.2	£95.2	£95.2	£95.2	£95.2	£95.2
10% buffer/uplift for other site works/ abnormalities (typologies under 200dw)		£10.9	£9.5	£9.5	£9.5				
Total Build	£120.2	£120.2	£104.7	£104.7	£104.7	£95.2	£95.2	£95.2	£95.2
Contingency @ 5%	£6.0	£6.0	£5.2	£5.2	£5.2	£4.8	£4.8	£4.8	£4.8
Fees @ 10%	£12.0	£12.0	£10.5	£10.5	£10.5	£9.5	£9.5	£9.5	£9.5
All in	£138.3	£138.3	£120.4	£120.4	£120.4	£109.5	£109.5	£109.5	£109.5

2.7. Construction Costs (Apartments)

We have adopted a build cost of £125.95/sqft. This is based on the BCIS Median for Cambridgeshire as of November 26, 2017 (£114.5/sqft / £1,232/sqm), with a 10% allowance added for external works.

As with the houses, we have allowed a contingency of 5%, and a fees allowance of 10%. We have not provided for a further cost buffer for the apartments, as in our opinion this is already provided for in the externals allowance, which on a proportionate basis in relation to the base build costs for apartments is high. In our experience build costs for apartments, including externals, is around £110/sqft.

2.8. Community Infrastructure Levy, S106 Commuted Sums, and other Site Infrastructure

The schedule below, sets out the calculation process (the 40% affordable scenario is used as an example) for each of the 35dph typologies, assuming the current CIL rate of £104.82/sqm, which was applicable at the base date of the cost and sales assumptions research, underpinning the viability modelling.

As CIL is chargeable against garage floor space, assumptions have been made regarding the possible quantum of garage space. We have assumed up to around 60% of private dwellings would have a garage, reflecting our experience of the typical upper end of the range for suburban sites. The adoption of the upper range figure reflects a cautious approach, allowing for a viability buffer as advocated in the National Planning Practice Guidance.

CIL Assumptions (35 dph Typologies)

Tenure	Number of Dwellings									
	11	25	50	75	150	250	500	750	1500	
Private	6	15	30	45	90	150	300	450	900	
Affordable (@40%)	4	10	20	30	60	100	200	300	600	
CIL Calculation										
A. Number of Garages (for calculating CIL) Assume 60% of private houses have garages	4	9	18	27	54	90	180	270	540	
B. Aggregated sqft garages (Assume 194sqft per garage)	776	1,746	3,492	5,238	10,476	17,460	34,920	52,380	104,760	
C. sqft private (excluding garages)	6,300	15,750	31,500	47,250	94,500	157,500	315,000	472,500	945,000	
D. sqft CIL chargeable (B+C)	7,076	17,496	34,992	52,488	104,976	174,960	349,920	524,880	1,049,760	
E. sqm CIL chargeable	657	1,625	3,251	4,876	9,753	16,254	32,509	48,763	97,526	
F. CIL Charged @ £104.82/sqm	£68,907	£170,378	£340,755	£511,133	£1,022,266	£1,703,777	£3,407,553	£5,111,330	£10,222,660	
CIL Phasing										
CIL 1	25%	£17,227	£42,594	£85,189	£127,783	£255,566	£425,944	£851,888	£1,277,832	£2,555,665
CIL2	50%	£34,453	£85,189	£170,378	£255,566	£511,133	£851,888	£1,703,777	£2,555,665	£5,111,330
CIL 3	25%	£17,227	£42,594	£85,189	£127,783	£255,566	£425,944	£851,888	£1,277,832	£2,555,665
Total		£68,907	£170,378	£340,755	£511,133	£1,022,266	£1,703,777	£3,407,553	£5,111,330	£10,222,660

CIL Assumptions (40 dph Typologies)

The 1,500 dwelling typology is proposed to be tested at 40dph alongside 35dph. Alongside a smaller average size of dwelling, a smaller proportion of dwellings with garages has been assumed, on account of the larger number of 2 and 3 bedroom dwellings, and townhouses likely to make up a development of this density, compared to the 35dph typology.

Dwellings	% Affordable	Number of Dwellings
Dwellings		1500
Private		900.00
Affordable	e.g. 40%	600.00
CIL Calculation		
A. Garages (for CIL) Assume 50% of private have garages 0.5		450.0
B. sqft garage		87,300
C. sqft private		855,000
D. sqft CIL chargeable		942,300
E. sqm CIL chargeable		87,542
F. CIL Charged @ £104.82/sqm		£9,176,205
CIL Phasing		
CIL 1	25%	£2,294,051
CIL 2	50%	£4,588,102
CIL 3	25%	£2,294,051
Total		£9,176,205

CIL Assumptions (50 dph Typologies)

The 25, 50 and 100 dwelling typologies are proposed to be tested at 50dph. A further reduction in the proportion of dwellings with garages (to 25% of private dwellings) has been assumed, on the basis that most of the private houses will be townhouses of no more than 3 bedrooms.

Dwellings		25	50	100
Private		15.00	30.00	60.00
Affordable e.g. @ 40%		10.00	20.00	40.00
CIL Calculation				
A. Garages (for CIL) Assume 25% of private have garages		3.8	7.5	15.0
B. sqft garage		728	1,455	2,910
C. sqft private		14,625	29,250	58,500
D. sqft CIL chargeable		15,353	30,705	61,410
E. sqm CIL chargeable		1,426	2,853	5,705
F. CIL Charged @ £104.82/sqm		£149,504	£299,008	£598,016
CIL Phasing				
CIL 1	25%	£37,376	£74,752	£149,504
CIL 2	50%	£74,752	£149,504	£299,008
CIL 3	25%	£37,376	£74,752	£149,504
Total		£149,504	£299,008	£598,016

CIL Assumptions (60 dph (All Apartment) Typologies)

The 50 dwelling typology is proposed to be tested at 60dph, assuming all dwellings as apartments. No dwellings are assumed to have garages, and CIL is calculated on the gross internal area of the development (assuming an 85% net to gross internal area ratio, or the equivalent of 706sqft GIA/dwelling)

Dwellings	e.g. @ 20% Affordable	e.g. @ Nil Affordable	
Private	40	50	
Affordable	10	0	
CIL Calculation			
A. Garages (for CIL) Assume 0% of private have garages	0	0	
B. sqft garage	0	0	
C. sqft private	28,240	35,300	
D. sqft CIL chargeable	28,240	35,300	
E. sqm CIL Chargeable	2,624	3,279	
F. CIL Charged @ £104.82/sqm	£275,004	£343,755	
CIL Phasing			
CIL Instalment 1	25%	£68,751	£85,939
CIL Instalment 2	50%	£137,502	£171,877
CIL Instalment 3	25%	£68,751	£85,939

CIL Timing

The schedule below, sets out the calculation process for scheduling the timing of CIL Payments in the residual development appraisal cashflows.

Days	Assumed [Cashflow] Month that CIL Charge Falls into (Always three instalments for the development typologies being tested)								
	11	25	50	75	150	250	500	750	1500
120									
150	5	5							
180			6	6	6	6	6	6	6
210									
240									
270									
300	10	10							
365									
450	15	15	15	15	15	15	15	15	15
720			24	24	24	24	24	24	24

Section 106 Assumptions

The schedule below, sets out the assumptions regarding Section 106 requirements for the typologies. The step up from £1,000/dw, to £12,000/dw for the 250 dwelling and larger typologies is based on the assumed possible site specific S106 requirements (assumed as £12,000/dw) for larger sites of more than 200 dwellings. This is due to the approach set out in the HDC Developer Contribution SPD (2011).

Clearly the timing of the requirement of such infrastructure, particularly large capital items such as schools and strategic highway infrastructure, will have a notable effect on viability, and as the timing of such payments is site specific the modelling has taken a cautious approach, with regards timing, as below.

		11	25	50	75	150	250	500	750	1,500
S106 Calculator	per dwelling	£1,000	£1,000	£1,000	£1,000	£1,000	£12,000	£12,000	£12,000	£12,000
	Total	£11,000	£25,000	£50,000	£75,000	£150,000	£3,000,000	£6,000,000	£9,000,000	£18,000,000
S106 Instalments Timing by Month										
1st tranche		11	11	11	11	11	19	19	19	19
2nd tranche (equal to 1 st tranche)							50	50	66	113

Other Site Infrastructure

We have allowed a sum of £20,000 / dwelling, for strategic infrastructure (e.g. primary and secondary access roads, utility connections and infrastructure, open space), for the typologies of over 250 dwellings and higher. This is the mid-point of the benchmark range cited in *Viability Testing Local Plans*

2.9. Profit and other development overheads

Blended rates of developer profit have been applied reflecting a level of 20% on GDV for market units, and 6% for affordable. The lower rate on the affordable housing reflects the different risk profile for affordable units which are transferred on a pre-sale basis and therefore effectively justifying a contractor’s profit level as opposed to a developer’s profit. The blended rate therefore varies according to the affordable housing scenario that is applied.

Profit on Value

% Affordable Scenario	Blended Profit on Value (Rounded)
40%	17%
35%	17.5%
30%	18.0%
25%	18.5%
20%	19%
15%	19%
10%	19%

Finance

A rate of 6.5% has been adopted to apply to borrowing costs when the development cashflow is in deficit, such that finance costs are specific to each appraisal.

Marketing and Sales

A rate of 3.5% has been adopted and applied to the gross development value of the market dwellings only. This rate is at the upper end of the range that Cushman & Wakefield experience, and our cautious approach is consistent with that advocated by Harman (Viability Testing Local Plans) and then National Planning Practice Guidance, to allow for “changing” markets over the Local Plan period when considering development assumptions.

2.10. Benchmark Land Values (Greenfield)

These benchmark land values are set out below (on a net and gross basis), for the typologies assuming a greenfield development context. These values represent an indicative range, for the purpose of local plan viability testing a range of generic typologies, based on Cushman & Wakefield’s experience in similar development contexts and value areas.

Site Size	Dwellings @ 35dph	Net to Gross	£ NET Acre (Greenfield)					
			Sales £/sqft v's £/net acre					
			£290	£270	£240	£230	£220	£200
SUE	1500 +	50.0% ¹	£200,000	£200,000	£200,000	£200,000	£200,000	£200,000
2 ha plus	43+	62.5%	£345,000	£300,000	£219,000	£219,000	£219,000	£219,000
0.4-2ha	14-42	82.5%	£316,250	£275,000	£200,750	£200,750	£200,750	£200,750
under 0.4ha	Under 14	100.0%	£230,000	£200,000	£146,000	£146,000	£146,000	£146,000

Site Size	Dwellings @ 35dph	Net to Gross	£ GROSS Acre (Greenfield)					
			Sales £/sqft v's £/gross acre					
			£290	£270	£240	£230	£220	£200
SUE	1500 +	50.0%	£100,000	£100,000	£100,000	£100,000	£100,000	£100,000
2 ha plus	43+	62.5%	£215,625	£187,500	£136,875	£136,875	£136,875	£136,875
0.4-2ha	14-42	82.5%	£260,906	£226,875	£165,619	£165,619	£165,619	£165,619
under 0.4ha	Under 14	100.0%	£230,000	£200,000	£146,000	£146,000	£146,000	£146,000

Site specific circumstances, do of course, vary, and this is especially pertinent with regard to Sustainable Urban Extensions, which may be exposed to particularly high infrastructure costs that challenge viability. In our experience of negotiating with SUE landowners regarding financial viability at the planning application stage, they have been prepared to respond to such circumstances by bringing their land forward for

¹ A cautious assumption; for the purpose of typology testing 55% may also be reasonable

development at rates significantly below the £100,000 / gross acre, we have adopted for the viability testing the local plan.

We have, however, adopted the rate of £100,000 / gross acre for the purpose of viability testing the Huntingdonshire Local Plan, on the basis that we are testing a generic SUE typology, and also to be consistent with the National Planning Practice Guidance, which states that Plan makers should not plan to the margin of viability but should allow for a buffer to respond to changing markets and to avoid the need for frequent plan updating. These are important considerations which sets the approach regarding Benchmark Land Value at the Plan making stage apart from that which may be adopted when considering the viability case for a specific site at the planning application stage.

2.11. Benchmark Land Values (Previously Developed Land)

These benchmark land values are set out below (on a net and gross basis), for the typologies assuming a Previously Developed Land development context. These values are indicative based on Cushman & Wakefield’s experience in similar development contexts and value areas.

Site Size	Net to Gross	Dwellings @ 35dph	£ NET Acre (Previously Developed Land)					
			Sales £/sqft v's £/net acre					
			£290	£270	£240	£230	£220	£200
2 ha plus	62.5%	43+	£276,000	£240,000	£240,000	£240,000	£240,000	£240,000
0.4-2ha	82.5%	14-42	£253,000	£220,000	£220,000	£220,000	£220,000	£220,000
under 0.4ha	100.0%	Under 14	£184,000	£160,000	£160,000	£160,000	£160,000	£160,000

Site Size	Net to Gross	Dwellings @ 35dph	£ GROSS ACRE (Previously Developed Land)					
			Sales £/sqft v's £/gross acre					
			£290	£270	£240	£230	£220	£200
2 ha plus	62.5%	43+	£172,500	£150,000	£150,000	£150,000	£150,000	£150,000
0.4-2ha	82.5%	14-42	£208,725	£181,500	£181,500	£181,500	£181,500	£181,500
under 0.4ha	100.0%	Under 14	£184,000	£160,000	£160,000	£160,000	£160,000	£160,000