

Annex D – Detailed Analysis of Housing Figures

D1 DETAILED ANALYSIS OF HOUSING FIGURES

D1.1 INTRODUCTION

This annex presents data and analysis on the following:

- Housing allocations from policy CF3, broken down by district, for the nine Settlements of Significant Development, by Housing Market Area, and by Water Resource Zone;
- Housing allocations compared to the three Options from the Spatial Options Paper from January 2007;
- Land requirements for housing growth, including use of previously-developed land;
- CO₂ emissions from housing stock;
- Water consumption from housing stock;
- Housing demand and local need;
- Housing requirements for economic growth; and
- Housebuilding rates.

D1.2 HOUSING ALLOCATIONS

Table D1.1 presents the housing allocations from policy CF3, with information on how this will affect the total amount of housing stock by the end of the plan period.

In addition, the table provides other figures in *italics* for districts where allocations will actually be delivered in neighbouring districts. The districts affected are as follows:

- Redditch, where 3,300 houses (from an allocation of 6,600) will actually be built outside the boundaries of Redditch town, in Stratford on Avon and Bromsgrove; and
- Worcester, where 7,300 houses (from an allocation of 10,500) will be built outside the boundaries of Worcester, in Malvern Hills and Wychavon.

In these cases, the 'overspill' has been allocated equally between the respective districts (ie an additional 1,750 in each of Stratford and Bromsgrove, and an additional 3,650 in each of Malvern Hills and Wychavon).

Table D1.1 Proposed Housing Allocations by District

Districts	Completions 2006-2026		Number of dwellings		Housing Growth rate 2006-26
	Net	Gross	2006	2026	
West Midlands Conurbation	152,900	212,242	1,094,845	1,247,745	14.0%
Birmingham	50,600	77,500	417,526	468,126	12.1%
Coventry	33,500	35,597	129,897	163,397	25.8%
Black Country	61,200	87,006	461,856	523,056	13.3%
Solihull	7,600	12,139	85,567	93,167	8.9%
Shropshire	25,700	26,051	128,866	154,566	19.9%
Bridgnorth	2,500	2,587	22,680	25,180	11.0%
North Shropshire	6,100	6,176	25,773	31,873	23.7%
Oswestry	4,000	4,014	17,526	21,526	22.8%
Shrewsbury and Atcham	8,200	8,315	43,299	51,499	18.9%
Of which is Shrewsbury	6,200	6,287	31,875	38,075	19.5%
Of which is Shrewsbury district	2,000	2,028	11,424	13,424	17.5%
South Shropshire	4,900	4,959	19,588	24,488	25.0%
Telford and Wrekin	26,500	26,702	70,103	96,603	37.8%
Of which is Telford	25,000	25,191	61,210	86,210	40.8%
Of which is T&W district	1,500	1,511	8,893	10,393	16.9%
Staffordshire	54,900	57,016	352,577	407,477	15.6%
Cannock Chase	5,800	6,388	40,206	46,006	14.4%
East Staffordshire	12,900	12,928	46,392	59,292	27.8%
Of which is Burton upon Trent	11,000	11,024	27,047	38,047	40.7%
Of which is East Staffs district	1,900	1,904	19,344	21,244	9.8%
Lichfield	8,000	8,072	40,206	48,206	19.9%
Newcastle-under-Lyme	5,700	6,676	54,639	60,339	10.4%
Of which is Newcastle urban area	4,800	5,622	33,109	37,909	14.5%
Of which is non urban area	900	1,054	21,531	22,431	4.2%
South Staffordshire	3,500	3,742	44,330	47,830	7.9%
Stafford	10,100	10,250	54,639	64,739	18.5%
Of which is Stafford town	7,000	7,104	28,835	35,835	24.3%
Of which is Stafford district	3,100	3,146	25,805	28,905	12.0%
Staffordshire Moorlands	6,000	6,060	41,237	47,237	14.6%
Tamworth	2,900	2,900	30,928	33,828	9.4%
Stoke-on-Trent	11,400	14,900	107,216	118,616	10.6%
Warwickshire	42,650	44,680	236,082	278,732	18.1%
North Warwickshire	3,000	3,251	26,804	29,804	11.2%
Nuneaton and Bedworth	10,800	11,248	52,577	63,377	20.5%
Rugby	10,800	11,317	40,206	51,006	26.9%
Of which is Rugby town	9,800	10,269	28,499	38,299	34.4%
Of which is Rugby district	1,000	1,048	11,707	12,707	8.5%
Stratford-on-Avon*	5,600	6,268	52,577	58,177	10.7%
<i>Stratford-on-Avon including Redditch expansion</i>	<i>7,250</i>	<i>7,918</i>	<i>52,577</i>	<i>59,827</i>	<i>13.8%</i>
Warwick	10,800	10,946	63,918	74,718	16.9%

Districts	Completions 2006-2026		Number of dwellings		Housing Growth rate 2006-26
	Net	Gross	2006	2026	
Worcestershire	34,950	36,279	242,268	277,218	14.4%
Bromsgrove*	2,100	2,305	38,144	40,244	5.5%
<i>Bromsgrove including Redditch expansion</i>	<i>3,750</i>	<i>3,955</i>	<i>38,144</i>	<i>41,894</i>	<i>9.8%</i>
Redditch*	6,600	6,630	34,021	40,621	19.4%
<i>Redditch district not including expansion into other districts</i>	<i>3,300</i>	<i>3,330</i>	<i>34,021</i>	<i>37,321</i>	<i>9.7%</i>
Malvern Hills**	4,900	5,195	32,990	37,890	14.9%
<i>Malvern Hills including Worcester expansion</i>	<i>8,550</i>	<i>8,845</i>	<i>32,990</i>	<i>41,540</i>	<i>25.9%</i>
Worcester **	10,500	10,500	42,268	52,768	24.8%
<i>Worcester district not including expansion into other districts</i>	<i>3,200</i>	<i>3,200</i>	<i>42,268</i>	<i>45,468</i>	<i>7.6%</i>
Wychavon**	9,100	9,571	51,546	60,646	17.7%
<i>Wychavon including Worcester expansion</i>	<i>12,750</i>	<i>13,221</i>	<i>51,546</i>	<i>64,296</i>	<i>24.7%</i>
Wyre Forest	3,400	3,728	43,299	46,699	7.9%
Herefordshire, County of	16,600	17,100	81,443	98,043	20.4%
Of which is Hereford	8,300	8,550	23,358	31,658	35.5%
Of which is Herefordshire	8,300	8,550	58,085	66,385	14.3%
MUAs	169,100	232,764	1,235,170	1,404,270	13.7%
Other areas	196,500	202,206	1,078,232	1,274,732	18.2%
West Midlands Region	365,600	434,970	2,313,402	2,679,002	15.8%

* Stratford District has been allocated 5,600 houses and Bromsgrove District 2,100 houses under CF3. However, of the 6,600 houses allocated to Redditch District, 3,300 houses will actually be located outside that district, on the edge of Redditch town in Stratford District and Bromsgrove District. If the houses from the expansion of Redditch town are allocated equally between Stratford and Bromsgrove, this would give a total figure of 7,250 for Stratford District and 3,750 for Bromsgrove District (and a total of 3,300 in Redditch district).

** Malvern Hills District has been allocated 4,900 houses and Wychavon District 9,100 houses under CF3. However, of the 10,500 houses allocated to Worcester District, 7,300 houses will actually be located outside that district, on the edge of Worcester in Malvern Hills District and Wychavon District. If the houses from the expansion of Worcester are allocated equally between Stratford and Bromsgrove, this would a figure of 8,550 for Malvern Hills District and 12,750 for Wychavon District (and 3,200 in Worcester district).

The following tables present housing allocations:

- for the nine Settlements of Significant Development;
- by Housing Market Area; and
- by Water Resource Zone

Table D1.2 Proposed Housing Allocations for Settlements of Significant Development

Settlements of Significant Development	Completions 2006-2026		Number of dwellings		Housing Growth rate 2006-26
	Net	Gross	2006	2026	
Shrewsbury	6,200	6,287	31,875	38,075	19.5%
Telford	25,000	25,191	61,210	86,210	40.8%
Burton upon Trent	11,000	11,024	27,047	38,047	40.7%
Newcastle urban area	4,800	5,622	33,109	37,909	14.5%
Stafford Town	7,000	7,104	28,835	35,835	24.3%
Rugby Town	9,800	10,269	28,499	38,299	34.4%
Redditch Town	6,600	6,630	34,021	40,621	19.4%
Worcester	10,500	10,500	42,268	52,768	24.8%
Hereford	8,300	8,550	23,358	31,658	35.5%
Total	89,200	91,176	310,221	399,421	28.8%

Note: Gross figures are estimates, as precise information on demolitions/replacements are not available for all Settlements of Significant Development.

Table D1.3 Proposed Housing Allocations by Housing Market Area

Housing Market Area	Completions 2006-2026		Number of dwellings		Housing Growth rate 2006-26
	Net	Gross	2006	2026	
South	53,000	55,143	358,763	411,763	14.8%
West	42,300	43,151	210,309	252,609	20.1%
Central	224,200	285,862	1,440,206	1,664,406	15.6%
<i>Central - Coventry</i>	<i>33,500</i>	<i>35,597</i>	<i>129,897</i>	<i>163,397</i>	<i>25.8%</i>
<i>Central - Birmingham, Solihull</i>	<i>58,200</i>	<i>89,639</i>	<i>503,093</i>	<i>561,293</i>	<i>11.6%</i>
<i>Central - Black Country</i>	<i>61,200</i>	<i>87,006</i>	<i>461,856</i>	<i>523,056</i>	<i>13.3%</i>
<i>Central - Telford</i>	<i>26,500</i>	<i>26,702</i>	<i>70,103</i>	<i>96,603</i>	<i>37.8%</i>
<i>Central - Rugby, Nuneaton, North Warwickshire</i>	<i>24,600</i>	<i>25,816</i>	<i>119,588</i>	<i>144,188</i>	<i>20.6%</i>
<i>Central - Lichfield and Tamworth</i>	<i>10,900</i>	<i>10,972</i>	<i>71,134</i>	<i>82,034</i>	<i>15.3%</i>
<i>Central - South Staffordshire and Cannock</i>	<i>9,300</i>	<i>10,130</i>	<i>84,536</i>	<i>93,836</i>	<i>11.0%</i>
North	46,100	50,814	304,124	350,224	15.2%
<i>North - Urban areas</i>	<i>17,100</i>	<i>21,576</i>	<i>161,856</i>	<i>178,956</i>	<i>10.6%</i>
<i>North - outside MUAs</i>	<i>29,000</i>	<i>29,238</i>	<i>142,268</i>	<i>171,268</i>	<i>20.4%</i>
Total	365,600	434,970	2,313,402	2,679,002	15.8%

Table D1.4 Proposed Housing Allocations by Water Resource Zone

Water Resource Zone	Completions 2006-2026		Number of dwellings		Housing Growth rate 2006-26
	Net	Gross	2006	2026	
Birmingham	58,200	89,639	503,093	561,293	11.6%
South Staffordshire	68,661	89,831	495,320	563,981	13.9%
Severn	144,792	156,061	815,918	960,710	17.7%
Staffordshire and E Shropshire	73,492	78,432	398,299	471,791	18.5%
Hereford Conjunctive Use	16,600	17,100	81,443	98,043	20.4%
Oswestry and Ellesmere	3,855	3,908	19,330	23,185	19.9%
Total	365,600	434,970	2,313,402	2,679,002	15.8%

D1.3

HOUSING ALLOCATIONS COMPARED TO SPATIAL OPTIONS

Table D1.5 below reviews how the CF3 allocations (and the 'overspill' allocations in *italics*) compare to the three options put forward in the Spatial Options Paper in January 2007.

Table D1.5 Proposed Housing Allocations Compared to Spatial Options

District	Net completions	Gross completions			Gross completions 2001-2026			Comparison to Options
	2006-2026	2006-2026	2001-2006	2001-2026	Option 1	Option 2	Option 3	
West Midlands Conurbation								
Birmingham	50,600	77,500	16,100	93,600	70,800	83,600	92,000	Option 3+
Coventry	33,500	35,597	3,600	39,197	19,000	24,400	44,000	Option 2/3
Black Country	61,200	87,006	12,900	99,906	79,400	99,900	106,700	Option 2
Solihull	7,600	12,139	3,100	15,239	11,000	15,000	18,000	Option 2
Shropshire								
Bridgnorth	2,500	2,587	700	3,287	4,300	3,200	3,200	Option 3+
North Shropshire	6,100	6,176	1,500	7,676	3,900	7,000	7,000	Option 3+
Oswestry	4,000	4,014	1,100	5,114	2,900	4,200	4,200	Option 3+
Shrewsbury and Atcham	8,200	8,315	1,400	9,715	10,800	9,700	9,700	Option 2/3
South Shropshire	4,900	4,959	1,200	6,159	2,900	5,000	5,000	Option 3+
Telford and Wrekin								
	26,500	26,702	3,300	30,002	24,000	30,000	36,000	Option 2
Staffordshire								
Cannock Chase	5,800	6,388	2,000	8,388	6,000	7,000	7,000	Option 3+
East Staffordshire	12,900	12,928	1,800	14,728	7,700	15,000	15,000	Option 2/3
Lichfield	8,000	8,072	3,000	11,072	6,500	11,000	16,000	Option 2
Newcastle-under-Lyme	5,700	6,676	1,100	7,776	7,200	7,500	7,500	Option 3+
South Staffordshire	3,500	3,742	1,300	5,042	5,000	5,000	5,000	Option 1/2/3
Stafford	10,100	10,250	2,600	12,850	9,500	12,900	12,900	Option 2/3
Staffordshire Moorlands	6,000	6,060	1,400	7,460	5,500	5,500	5,500	Option 3+
Tamworth	2,900	2,900	1,100	4,000	3,900	4,000	9,000	Option 2
Stoke-on-Trent								
	11,400	14,900	3,700	18,600	15,000	21,000	21,000	Option 1/2
Warwickshire								
North Warwickshire	3,000	3,251	600	3,851	3,100	3,900	3,900	Option 2/3
Nuneaton and Bedworth	10,800	11,248	3,000	14,248	10,000	13,100	15,600	Option 2/3
Rugby	10,800	11,317	2,200	13,517	7,100	13,100	23,100	Option 2
Stratford-on-Avon	5,600	6,268	3,300	9,568	7,200	9,300	9,300	Option 3+

District	Net completions	Gross completions			Gross completions 2001-2026			Comparison to Options
	2006-2026	2006-2026	2001-2006	2001-2026	Option 1	Option 2	Option 3	
<i>Stratford-on-Avon including Redditch expansion</i>	7,250	7,918	3,300	11,218	7,200	9,300	9,300	Option 3+
Warwick	10,800	10,946	4,100	4,100	11,600	13,100	15,600	Option 3
Worcestershire								
Bromsgrove	2,100	2,305	2,400	4,705	3,800	4,700	7,200	Option 2
<i>Bromsgrove including Redditch expansion</i>	3,750	3,955	2,400	6,355	3,800	4,700	7,200	Option -3
Redditch	6,600	6,630	1,500	8,130	4,300	8,200	13,200	Option 2
<i>Redditch district not including expansion into other districts</i>	3,300	3,330	1,500	4,830	4,300	8,200	13,200	Option 1
Malvern Hills	4,900	5,195	1,100	6,295	3,600	6,300	6,300	Option 2/3
<i>Malvern Hills including Worcester expansion</i>	8,550	8,845	1,100	9,945	3,600	6,300	6,300	Option 3+
Worcester	10,500	10,500	1,200	11,700	7,200	11,800	16,800	Option 2
<i>Worcester district not including expansion into other districts</i>	3,200	3,200	1,200	4,400	7,200	11,800	16,800	Option -1
Wychavon	9,100	9,571	2,100	11,671	7,600	11,600	14,100	Option 2
<i>Wychavon including Worcester expansion</i>	12,750	13,221	2,100	15,321	7,600	11,600	14,100	Option 3+
Wyre Forest	3,400	3,728	1,900	5,628	4,600	4,700	4,700	Option 3+
Herefordshire, County of	16,600	17,100	3,100	20,200	16,000	20,500	20,500	Option 2/3
MUAs	169,100	232,764	40,326	273,090	201,263	250,216	288,016	Option 2/3
Other areas	196,500	202,206	49,074	251,280	180,137	240,984	286,984	Option 2
West Midlands Region (by district)	365,600	434,970	89,400	524,370	381,400	491,200	575,000	Option 2/3

D1.4

LAND REQUIREMENTS

Table D1.6 below presents how much land would be required to accommodate housing growth, setting out the maximum amount of Previously-Developed Land that could be used for new houses, and the minimum amount of additional land (eg reallocations from other uses, greenfield sites etc) that would be required. It also presents the total amount of Previously-Developed Land that could be used, including housing replacements for demolished stock. Figures on land requirements are based on the Regional Housing Land Capacity Study 2007.

Table D1.6 Land requirements for Housing Growth

Districts	Net completions 2006-2026	Gross completions 2006-2026	Land required for net completions (ha)	Previously-developed land available (ha)	'Other land' required (ha)	Number of houses on 'other land'	Total number of houses on PDL (including replacements for demolition)	PDL %
West Midlands Conurbation								
Birmingham	50,600	77,500	702	551	151	10,870	66,630	86.0%
Coventry	33,500	35,597	549	275	275	16,745	18,852	53.0%
Black Country	61,200	87,006	1,178	1,350	0	0	87,006	100.0%
Solihull	7,600	12,139	143	64	79	4,206	7,933	65.4%
Shropshire								
Bridgnorth	2,500	2,587	81	53	28	857	1,730	66.9%
North Shropshire	6,100	6,176	205	109	96	2,851	3,325	53.8%
Oswestry	4,000	4,014	149	63	86	2,313	1,701	42.4%
Shrewsbury and Atcham	8,200	8,315	216	127	89	3,369	4,946	59.5%
South Shropshire	4,900	4,959	207	64	144	3,394	1,565	31.6%
Telford and Wrekin	26,500	26,702	946	607	340	9,518	17,184	64.4%
Staffordshire								
Cannock Chase	5,800	6,388	139	116	23	953	5,435	85.1%
East Staffordshire	12,900	12,928	344	326	18	667	12,261	94.8%
Lichfield	8,000	8,072	184	76	108	4,700	3,372	41.8%
Newcastle-under-Lyme	5,700	6,676	144	133	11	434	6,242	93.5%
South Staffordshire	3,500	3,742	109	79	31	983	2,759	73.7%
Stafford	10,100	10,250	234	172	63	2,710	7,540	73.6%
Staffordshire Moorlands	6,000	6,060	186	120	66	2,134	3,926	64.8%
Tamworth	2,900	2,900	78	54	24	908	1,992	68.7%
Stoke-on-Trent	11,400	14,900	265	413	0	0	14,900	100.0%

Districts	Net completions 2006-2026	Gross completions 2006-2026	Land required for net completions (ha)	Previously-developed land available (ha)	'Other land' required (ha)	Number of houses on 'other land'	Total number of houses on PDL (including replacements for demolition)	PDL %
Warwickshire								
North Warwickshire	3,000	3,251	94	68	26	827	2,424	74.6%
Nuneaton and Bedworth	10,800	11,248	266	150	117	4,724	6,524	58.0%
Rugby	10,800	11,317	246	71	176	7,696	3,621	32.0%
Stratford-on-Avon	5,600	6,268	178	135	42	1,333	4,935	78.7%
<i>Stratford-on-Avon including Redditch expansion</i>	<i>7,250</i>	<i>7,918</i>	<i>230</i>	<i>135</i>	<i>95</i>	<i>2,983</i>	<i>4,935</i>	<i>62.3%</i>
Warwick	10,800	10,946	280	194	86	3,309	7,637	68.9%
Worcestershire								
Bromsgrove	2,100	2,305	62	106	0	0	2,305	100.0%
<i>Bromsgrove including Redditch expansion</i>	<i>3,750</i>	<i>3,955</i>	<i>111</i>	<i>106</i>	<i>5</i>	<i>181</i>	<i>3,774</i>	<i>95.4%</i>
Redditch	6,600	6,630	116	34	82	4,655	1,975	29.8%
<i>Redditch district not including expansion into other districts</i>	<i>3,300</i>	<i>3,330</i>	<i>58</i>	<i>34</i>	<i>24</i>	<i>1,355</i>	<i>1,975</i>	<i>59.3%</i>
Malvern Hills	4,900	5,195	157	140	18	548	4,647	89.5%
<i>Malvern Hills including Worcester expansion</i>	<i>8,550</i>	<i>8,845</i>	<i>274</i>	<i>140</i>	<i>135</i>	<i>4,198</i>	<i>4,647</i>	<i>52.5%</i>
Worcester	10,500	10,500	107	38	69	6,773	3,727	35.5%
<i>Worcester district not including expansion into other districts</i>	<i>3,200</i>	<i>3,200</i>	<i>33</i>	<i>38</i>	<i>0</i>	<i>0</i>	<i>3,200</i>	<i>100.0%</i>
Wychavon	9,100	9,571	226	65	161	6,469	3,102	32.4%
<i>Wychavon including Worcester expansion</i>	<i>12,750</i>	<i>13,221</i>	<i>226</i>	<i>65</i>	<i>161</i>	<i>6,469</i>	<i>3,102</i>	<i>32.4%</i>
Wyre Forest	3,400	3,728	64	78	0	0	3,728	100.0%
Herefordshire, County of	16,600	17,100	615	305	309	8,354	8,746	51.1%
MUAs	169,100	232,764	2,957	2,652	504	36,621	196,143	84.3%
Other areas	196,500	202,206	5,513	3,349	2,199	80,945	121,261	59.9%
West Midlands Region	365,600	434,970	8,470	6,001	2,704	117,566	317,404	72.9%

D1.5

CO₂ EMISSIONS FROM HOUSING STOCK

Table D1.7 below presents how much CO₂ would be emitted each year by the region's housing stock in 2026 **if the standards from policy SR3 (on Sustainable Design and Construction) are implemented in full**. It starts by setting out the current annual emissions from 2006, based on information on CO₂ emissions per dwelling for each local authority area from a recent study¹, and then calculates the emissions from:

- Houses constructed before 2006 that would still be standing in 2026, assuming that their per-dwelling emissions do not change;
- Houses constructed between 2006 and 2010, which would be constructed to current Building Regulations standards, and would consume 78.1% of the energy the pre-2006 housing stock
- Houses constructed between 2010 and 2014, which would be constructed to Code for Sustainable Homes Level 3, and would consume 58.6% of the energy of pre-2006 stock
- Houses constructed between 2014 and 2016, which would be constructed to Code for Sustainable Homes Level 4, and would consume 43.7% of the energy of pre-2006 stock; and
- Houses constructed between 2016 and 2020, which would be constructed to Code for Sustainable Homes Level 6, and would therefore be 'zero carbon', ie would emit no CO₂.

It should be noted that these calculations do not factor in (a) any improvement in the energy efficiency of pre-2006 stock, or (b) any effect of changes in the national fuel mix (eg increases in the use of renewable energy, nuclear energy etc), both of which could further reduce CO₂ emissions.

The figures show that, while the region's housing stock will grow by 15.8%, the energy efficiency standards in new housing means that CO₂ emissions from the region's houses will increase by a smaller amount – 3.2%.

Table D1.7 CO₂ emissions from Housing Growth

District	Total Housing Stock 2006	CO2 Emissions per annum 2006 (tonnes)		Houses built pre-2006 still standing in 2026	CO2 per annum (tonnes)	Houses built 2006-2010	CO2 per annum (tonnes)	Houses built 2010-2014	CO2 per annum (tonnes)	Houses built 2014-2016	CO2 per annum (tonnes)	Houses built 2016-2026	CO2 per annum (tonnes)	Total Housing Stock 2026	CO2 per annum (tonnes)	Increase on 2006 CO2 emissions
		per dwelling	from total houses													
West Mids Conurbation																
Birmingham	417,526	5.42	2,264,660	390,626	2,118,754	15,186	64,313	15,186	48,234	7,593	18,010	39,536	0	468,126	2,249,311	-0.7%
Coventry	129,897	4.91	637,924	127,800	627,625	6,975	26,746	6,975	20,059	3,488	7,490	18,159	0	163,397	681,920	6.9%
Black Country	461,856	5.20	2,403,612	436,050	2,269,311	17,048	69,276	17,048	51,957	8,524	19,400	44,385	0	523,056	2,409,944	-0.3%

¹ http://www.britishgasnews.co.uk/managed_content/files/pdf/greenCity.pdf

District	Total Housing Stock 2006	CO2 Emissions per annum 2006 (tonnes)		Houses built pre-2006 still standing in 2026	CO2 per annum (tonnes)	Houses built 2006-2010	CO2 per annum (tonnes)	Houses built 2010-2014	CO2 per annum (tonnes)	Houses built 2014-2016	CO2 per annum (tonnes)	Houses built 2016-2026	CO2 per annum (tonnes)	Total Housing Stock 2026	CO2 per annum (tonnes)	Increase on 2006 CO2 emissions
		per dwelling	from total houses													
Solihull	85,567	6.24	533,853	81,028	505,534	2,379	11,587	2,379	8,690	1,189	3,245	6,193	0	93,167	529,056	0.9%
Shropshire																
Bridgnorth	22,680	7.18	162,755	22,593	162,130	548	3,071	548	2,303	274	860	1,217	0	25,180	168,364	3.4%
North Shropshire	25,773	6.72	173,093	25,697	172,582	1,308	6,861	1,308	5,146	654	1,921	2,905	0	31,873	186,511	7.8%
Oswestry	17,526	6.05	106,031	17,512	105,946	850	4,017	850	3,013	425	1,125	1,888	0	21,526	114,101	7.6%
Shrewsbury and Atcham	43,299	6.07	262,695	43,184	261,997	1,762	8,345	1,762	6,259	881	2,337	3,911	0	51,499	278,938	6.2%
South Shropshire	19,588	7.16	140,169	19,529	139,747	1,051	5,870	1,051	4,403	525	1,644	2,332	0	24,488	151,664	8.2%
Telford and Wrekin	70,103	5.09	356,895	69,901	355,866	5,657	22,487	5,657	16,865	2,829	6,297	12,559	0	96,603	401,516	12.5%
Staffordshire																
Cannock Chase	40,206	5.26	211,525	39,618	208,431	1,353	5,559	1,353	4,170	677	1,557	3,005	0	46,006	219,717	3.9%
East Staffordshire	46,392	5.31	246,340	46,364	246,192	2,739	11,356	2,739	8,517	1,369	3,180	6,081	0	59,292	269,244	9.3%
Lichfield	40,206	7.12	286,188	40,134	285,675	1,710	9,505	1,710	7,128	855	2,662	3,797	0	48,206	304,970	6.6%
Newcastle-under-Lyme	54,639	5.32	290,735	53,663	285,542	1,421	5,904	1,421	4,428	711	1,653	3,123	0	60,339	297,527	2.3%
South Staffordshire	44,330	5.67	251,173	44,088	249,802	793	3,507	793	2,630	396	982	1,760	0	47,830	256,922	2.3%
Stafford	54,639	6.59	359,963	54,489	358,975	2,172	11,170	2,172	8,378	1,086	3,128	4,821	0	64,739	381,651	6.0%
Staffordshire Moorlands	41,237	7.19	296,577	41,177	296,146	1,284	7,210	1,284	5,407	642	2,019	2,850	0	47,237	310,782	4.8%
Tamworth	30,928	4.87	150,464	30,928	150,464	614	2,334	614	1,750	307	654	1,364	0	33,828	155,202	3.1%
Stoke-on-Trent	107,216	5.19	556,668	103,716	538,496	3,172	12,858	3,172	9,643	1,586	3,601	6,971	0	118,616	564,598	1.4%
Warwickshire																
North Warwickshire	26,804	5.67	151,872	26,553	150,450	689	3,047	689	2,285	344	853	1,529	0	29,804	156,636	3.1%
Nuneaton and Bedworth	52,577	4.61	242,276	52,129	240,212	2,383	8,574	2,383	6,430	1,192	2,401	5,290	0	63,377	257,617	6.3%
Rugby	40,206	5.49	220,571	39,689	217,735	2,398	10,270	2,398	7,703	1,199	2,876	5,323	0	51,006	238,584	8.2%
Stratford-on-Avon	52,577	6.75	354,634	51,909	350,128	1,328	6,994	1,328	5,245	664	1,958	2,948	0	58,177	364,326	2.7%
Warwick	63,918	7.13	455,924	63,772	454,882	2,319	12,916	2,319	9,687	1,160	3,617	5,148	0	74,718	481,102	5.5%
Worcestershire																
Bromsgrove	38,144	7.13	272,084	37,939	270,621	488	2,720	488	2,040	244	762	1,084	0	40,244	276,142	1.5%
Redditch	34,021	5.84	198,714	33,991	198,539	1,405	6,406	1,405	4,805	702	1,794	3,118	0	40,621	211,544	6.5%
Malvern Hills	32,990	7.33	241,781	32,695	239,619	1,101	6,298	1,101	4,724	550	1,764	2,443	0	37,890	252,405	4.4%
Worcester	42,268	4.39	185,557	42,268	185,557	2,225	7,625	2,225	5,719	1,112	2,135	4,939	0	52,768	201,036	8.3%
Wychavon	51,546	6.36	327,629	51,075	324,635	2,028	10,063	2,028	7,547	1,014	2,818	4,502	0	60,646	345,064	5.3%
Wyre Forest	43,229	5.05	218,487	42,971	216,832	790	3,112	790	2,334	395	871	1,753	0	46,699	223,149	2.1%
Herefordshire, County of	81,443	6.02	490,044	80,943	487,036	3,623	17,020	3,623	12,765	1,811	4,766	8,043	0	98,043	521,588	6.4%
MUAs	1,235,170	5.18	6,396,716	1,139,220	6,059,721	44,759	184,779	44,759	138,584	22,380	51,744	115,243	0	1,366,362	6,434,828	0.6%
Other areas	1,078,232	5.90	6,363,440	1,051,149	6,330,200	42,616	196,338	42,616	147,253	21,308	54,981	94,611	0	1,252,301	6,728,772	5.7%
West Midlands Region	2,313,402	5.52	12,760,157	2,190,369	12,389,921	87,376	381,117	87,376	285,838	43,688	106,725	209,855	0	2,618,663	13,163,601	3.2%

D1.6

WATER CONSUMPTION FROM HOUSING STOCK

Table D1.8 below illustrates how total water consumption from the region’s housing stock is likely to change between 2006 and 2026. It shows current consumption patterns, and then projects forward in two scenarios:

- A ‘Business as Usual’ scenario, which is based on an assumption that each person consumes an average of 150 litres of water per day, and that consumption rates will not change over the plan period; and
- A scenario whereby the water efficiency standards from policy SR3 on Sustainable Design and Construction are implemented in full, whereby all new houses are constructed to Code for Sustainable Homes Level 3/4, and that each person living in the post-2006 housing stock would therefore consume an average of 105 litres of water per day.

It should be noted that these figures do not factor in any improvement that there may be in the water efficiency of pre-2006 housing stock, and do not factor in changes in household occupancy rates.

Table D1.8 Water Consumption from Housing Growth

District	Water consumption, 2006		Business as Usual, 2026		Policy SR3, 2026		
	litres/ household/ day	Total per district, litres	Total per district, litres	% increase in consumption 2006-2026	litres/ household/ day (new stock)	Total per district, litres	% increase in consumption 2006-2026
West Mids Conurbation							
Birmingham	370.8	150,180,000	168,380,333	12.1%	259.6	160,017,532	6.6%
Coventry	362.1	45,630,000	57,397,832	25.8%	253.5	53,646,493	17.6%
Black Country	363.3	162,750,000	184,315,828	13.3%	254.3	175,118,002	7.6%
Solihull	363.1	30,135,000	32,811,569	8.9%	254.2	31,529,035	4.6%
Shropshire							
Bridgnorth	355.9	7,830,000	8,693,080	11.0%	249.1	8,425,145	7.6%
North Shropshire	354.6	8,865,000	10,963,168	23.7%	248.2	10,325,875	16.5%
Oswestry	345.9	5,880,000	7,222,024	22.8%	242.1	6,818,007	16.0%
Shrewsbury and Atcham	343.9	14,445,000	17,180,608	18.9%	240.8	16,348,416	13.2%
South Shropshire	333.9	6,345,000	7,932,252	25.0%	233.8	7,450,343	17.4%
Telford and Wrekin							
	356.5	24,240,000	33,403,076	37.8%	249.5	30,633,199	26.4%
Staffordshire							
Cannock Chase	358.5	13,980,000	15,996,705	14.4%	250.9	15,330,358	9.7%
East Staffordshire	356.3	16,035,000	20,493,799	27.8%	249.4	19,153,256	19.4%
Lichfield	367.3	14,325,000	17,175,308	19.9%	257.1	16,312,520	13.9%
Newcastle-under-Lyme	349.2	18,510,000	20,440,977	10.4%	244.5	19,762,493	6.8%
South Staffordshire	367.3	15,795,000	17,042,070	7.9%	257.1	16,642,081	5.4%
Stafford	349.8	18,540,000	21,967,102	18.5%	244.9	20,923,702	12.9%
Staffordshire Moorlands	354.8	14,190,000	16,254,645	14.6%	248.3	15,629,058	10.1%
Tamworth	371.0	11,130,000	12,173,623	9.4%	259.7	11,860,536	6.6%

District	Water consumption, 2006		Business as Usual, 2026		Policy SR3, 2026		
	litres/ household/ day	Total per district, litres	Total per district, litres	% increase in consumption 2006-2026	litres/ household/ day (new stock)	Total per district, litres	% increase in consumption 2006-2026
Stoke-on-Trent	343.7	35,745,000	39,545,656	10.6%	240.6	38,055,399	6.5%
Warwickshire							
North Warwickshire	359.4	9,345,000	10,390,921	11.2%	251.6	10,050,892	7.6%
Nuneaton and Bedworth	355.0	18,105,000	21,823,980	20.5%	248.5	20,662,005	14.1%
Rugby	352.3	13,740,000	17,430,775	26.9%	246.6	16,270,539	18.4%
Stratford-on-Avon	350.0	17,850,000	19,751,200	10.7%	245.0	19,112,804	7.1%
Warwick	339.4	21,045,000	24,600,926	16.9%	237.6	23,519,727	11.8%
Worcestershire							
Bromsgrove	370.9	13,725,000	14,480,617	5.5%	259.7	14,231,803	3.7%
Redditch	361.8	11,940,000	14,256,360	19.4%	253.3	13,558,293	13.6%
Malvern Hills	352.0	11,265,000	12,938,205	14.9%	246.4	12,406,023	10.1%
Worcester	345.0	14,145,000	17,658,825	24.8%	241.5	16,604,678	17.4%
Wychavon	350.7	17,535,000	20,630,629	17.7%	245.5	19,653,873	12.1%
Wyre Forest	351.8	14,775,000	15,935,189	7.9%	246.3	15,553,555	5.3%
Herefordshire	339.5	26,820,000	32,286,527	20.4%	237.6	30,597,173	14.1%
MUAs	363.6	424,440,000	482,451,218	13.7%	254.5	458,366,460	8.0%
Other areas	353.0	361,890,000	428,681,613	18.5%	247.1	408,073,862	12.8%
West Midlands Region	358.7	786,330,000	911,132,831	15.9%	251.1	866,440,322	10.2%

D1.7

HOUSING DEMAND

Table D1.9 below compares the proposed net housing growth figures from policy CF3 against an average of figures on estimated housing demand for the period 2006-2026. The table looks at each district within the region, and presents whether there is an undersupply (highlighted in red) or oversupply in the CF3 housing figures when compared to estimated housing demand. Three sets of net housing demand figures are presented as follows:

1. Figures from Appendix 4b, Table 2 ('Reference Point' Net Supply compared with Net Demand') in the paper submitted as Agenda Item 5 from the meeting of the Joint Regional Advisory Group/RSS Task Group on 29 June 2007, which concludes that the region requires 383,160 additional houses over the plan period.
2. Figures from the paper on 'Household Projection-based Estimate of Housing Demand and Need in the West Midlands', produced by the Cambridge Centre for Housing and Planning Research for the WMRA in August 2007, which concludes that the region requires 389,700 additional houses over the plan period.
3. Figures from a review of the 2004 Sub-Regional Household Projections, produced in early 2007, which concludes that the region requires 382,522 additional houses of the plan period.

All three sets of figures are based on the 2004 Sub-Regional Household Projections. Comparisons are made against an average of the three sets of figures.

Table D1.9 Proposed Housing Growth compared to Estimated Housing Demand

District	Net housing growth 2006-2026	Net Housing Demand 2006-2026				Housing undersupply/ oversupply	Net supply as % of housing demand
		1	2	3	Average		
West Mids Conurbation							
Birmingham	50,600	66,950	66,200	66,414	66,521	-15,921	76.1%
Coventry	33,500	14,420	14,200	14,364	14,328	19,172	233.8%
Black Country	61,200	52,530	52,200	51,972	52,234	8,966	117.2%
Solihull	7,600	11,330	11,600	11,060	11,330	-3,730	67.1%
Shropshire							
Bridgnorth	2,500	3,090	3,400	3,581	3,357	-857	74.5%
North Shropshire	6,100	6,180	6,300	6,355	6,278	-178	97.2%
Oswestry	4,000	5,150	5,400	5,143	5,231	-1,231	76.5%
Shrewsbury and Atcham	8,200	7,210	7,600	7,167	7,326	874	111.9%
South Shropshire	4,900	5,150	5,300	5,302	5,251	-351	93.3%
Telford and Wrekin	26,500	16,480	16,800	16,474	16,585	9,915	159.8%

District	Net housing growth 2006-2026	Net Housing Demand 2006-2026				Housing undersupply/ oversupply	Net supply as % of housing demand
		1	2	3	Average		
Staffordshire							
Cannock Chase	5,800	5,150	5,700	5,376	5,409	391	107.2%
East Staffordshire	12,900	10,300	10,300	10,443	10,348	2,552	124.7%
Lichfield	8,000	6,180	6,700	6,285	6,388	1,612	125.2%
Newcastle-under-Lyme	5,700	6,180	6,000	6,371	6,184	-484	92.2%
South Staffordshire	3,500	3,090	3,800	3,087	3,326	174	105.2%
Stafford	10,100	8,240	8,900	8,897	8,679	1,421	116.4%
Staffordshire Moorlands	6,000	5,150	5,700	5,106	5,319	681	112.8%
Tamworth	2,900	4,120	4,500	3,735	4,118	-1,218	70.4%
Stoke-on-Trent	11,400	6,180	6,300	6,135	6,205	5,195	183.7%
Warwickshire							
North Warwickshire	3,000	4,120	4,500	3,633	4,084	-1,084	73.5%
Nuneaton and Bedworth	10,800	8,240	8,900	8,523	8,554	2,246	126.3%
Rugby	10,800	10,300	10,600	10,667	10,522	278	102.6%
Stratford-on-Avon	5,600	17,510	17,300	17,392	17,401	-11,801	32.2%
Warwick	10,800	30,900	30,000	30,401	30,434	-19,634	35.5%
Worcestershire							
Bromsgrove	2,100	8,240	8,600	8,232	8,357	-6,257	25.1%
Redditch	6,600	6,180	6,400	5,942	6,174	426	106.9%
Malvern Hills	4,900	7,210	7,500	7,306	7,339	-2,439	66.8%
Worcester	10,500	8,240	8,600	8,003	8,281	2,219	126.8%
Wychavon	9,100	13,390	13,600	13,576	13,522	-4,422	67.3%
Wyre Forest	3,400	7,210	7,700	6,964	7,291	-3,891	46.6%
Herefordshire	16,600	18,540	19,100	18,617	18,752	-2,152	88.5%
MUAs	169,100	155,155	156,500	153,806	155,154	-13,946	91.8%
Other areas	196,500	228,005	233,200	228,717	229,974	33,474	117.0%
West Midlands Region	365,600	383,160	389,700	382,523	385,128	-19,528	94.9%

Table D1.10 below presents a review of how the net housing growth from policy CF3 compares to *locally-generated* housing demand (ie housing demand that arises from the population of each district). Comparisons are made against the net housing demand figures from a review of the 2004 Sub-Regional Household Projections, produced in early 2007, which were broken down into housing demand from migration and housing demand from local need.

As the figures illustrate, some districts (such as Birmingham) have very high local housing needs but a lower net demand, as households are expected to migrate away from those districts. Other towns have low local needs, but because of in-migration have much higher net housing demand. The final column in the table discounts the expected migration patterns, and instead examines whether locally-generated demand is being met locally, highlighting districts where there is insufficient housing growth to meet local needs in red.

Table D1.10 Proposed Housing Growth compared to Estimated Locally-Generated Housing Demand

	Net housing growth 2006-2026	Net housing demand 2006-2026	Housing demand from in-migration	Locally-generated housing demand	Housing undersupply/ oversupply
West Midlands Conurbation					
Birmingham	50,600	66,414	-50,535	116,949	-66,349
Coventry	33,500	14,364	-6,572	20,937	12,563
Black Country	61,200	51,972	-13,181	65,153	-3,953
Solihull	7,600	11,060	-2,641	13,701	-6,101
Shropshire					
Bridgnorth	2,500	3,581	2,649	932	1,568
North Shropshire	6,100	6,355	4,898	1,457	4,643
Oswestry	4,000	5,143	4,382	761	3,239
Shrewsbury and Atcham	8,200	7,167	3,280	3,887	4,313
South Shropshire	4,900	5,302	4,667	636	4,264
Telford and Wrekin	26,500	16,474	2,818	13,656	12,844
Staffordshire					
Cannock Chase	5,800	5,376	-609	5,984	-184
East Staffordshire	12,900	10,443	4,694	5,749	7,151
Lichfield	8,000	6,285	3,213	3,072	4,928
Newcastle-under-Lyme	5,700	6,371	2,200	4,170	1,530
South Staffordshire	3,500	3,087	-68	3,155	345
Stafford	10,100	8,897	4,321	4,576	5,524
Staffordshire Moorlands	6,000	5,106	3,594	1,512	4,488
Tamworth	2,900	3,735	-3,323	7,058	-4,158

	Net housing growth 2006-2026	Net housing demand 2006-2026	Housing demand from in-migration	Locally-generated housing demand	Housing undersupply/ oversupply
Stoke-on-Trent	11,400	6,135	-6,097	12,231	-831
Warwickshire					
North Warwickshire	3,000	3,633	736	2,896	104
Nuneaton and Bedworth	10,800	8,523	1,311	7,212	3,588
Rugby	10,800	10,667	6,156	4,510	6,290
Stratford-on-Avon	5,600	17,392	13,924	3,468	2,132
Warwick	10,800	30,401	24,255	6,146	4,654
Worcestershire					
Bromsgrove	2,100	8,232	5,536	2,696	-596
Redditch	6,600	5,942	-815	6,757	-157
Malvern Hills	4,900	7,306	6,526	780	4,120
Worcester	10,500	8,003	1,623	6,380	4,120
Wychavon	9,100	13,576	9,030	4,546	4,554
Wyre Forest	3,400	6,964	4,032	2,931	469
Herefordshire, County of	16,600	18,617	13,258	5,359	11,241
MUAs	169,100	153,806	-77,693	231,498	-63,744
Other areas	196,500	228,717	120,955	107,759	90,087
West Midlands Region	365,600	382,523	43,262	339,257	26,343

D1.8

HOUSING AND THE ECONOMY

Table D1.11 below compares the proposed net housing growth figures from policy CF3 against the predicted housing growth required to support the region's economic growth objectives.

Research carried out for Advantage West Midlands (*Study to examine the interface between housing and the economy in the West Midlands region*, SQW and Cambridge Econometrics, Draft Final Report 14 August 2007) assessed what housing would be needed and where to support the region's economic growth objectives. The study considered two scenarios:

- a 'baseline' scenario, which assumes that past recent trends continue, and concluded that 374,187 additional houses would be required; and
- a 'convergence' scenario, which assumes that by 2026 the region has closed the GVA gap on the rest of the UK, and concluded that 389,254 additional houses would be required.

Table D1.11 Proposed Housing Growth compared to Housing Required for Economic Growth

Housing Market Areas	Net housing growth 2006-26	Baseline Scenario 2006-2026			Convergence Scenario 2006-2026		
		Predicted housing requirements	Housing undersupply/ oversupply	Net supply as % of housing required	Predicted housing requirements	Housing undersupply/ oversupply	Net supply as % of housing required
South	53,000	116,623	-63,623	45.4%	120,301	-67,301	44.1%
West	42,300	39,064	3,236	108.3%	40,938	1,362	103.3%
Central	224,200	196,758	27,442	113.9%	204,398	19,802	109.7%
<i>Central - Coventry</i>	33,500	19,597	13,903	170.9%	20,014	13,486	167.4%
<i>Central - Birmingham, Solihull</i>	58,200	68,676	-10,476	84.7%	70,258	-12,058	82.8%
<i>Central - Black Country</i>	61,200	41,562	19,638	147.2%	43,941	17,259	139.3%
<i>Central - Telford</i>	26,500	22,818	3,682	116.1%	23,159	3,341	114.4%
<i>Central - Rugby, Nuneaton, N Warks</i>	24,600	30,541	-5,941	80.5%	31,883	-7,283	77.2%
<i>Central - Lichfield and Tamworth</i>	10,900	8,809	2,091	123.7%	9,456	1,444	115.3%
<i>Central - South Staffs and Cannock</i>	9,300	4,755	4,545	195.6%	5,687	3,613	163.5%
North	46,100	21,742	24,358	212.0%	23,617	22,483	195.2%
<i>North - Urban areas</i>	17,100	-2,512	19,612	-680.7%	-1,678	18,778	-1019.1%
<i>North - outside MUAs</i>	29,000	24,254	4,746	119.6%	25,295	3,705	114.6%
Total	365,600	374,187	-8,587	97.7%	389,254	-23,654	93.9%

D1.9**HOUSEBUILDING RATES**

Table D1.12 below compares sub-regional housebuilding rates from the last five years (from the *Annual Monitoring Report 2006*) with the proposed housebuilding rates from policies CF3 (on housing allocations) and CF4 (on phasing). The final column shows how housebuilding rates will either increase or decrease over the next 10 years, and shows that housebuilding will increase by 16.5% across the region as a whole.

Table D1.12 Housebuilding Rates 2001-2006 and 2006-2016

Sub-region	Net housing growth 2001-2006		Net housing growth 2006-2016		Change
	Total	Annual	Total	Annual	
Birmingham	15,157	3,031	24,787	2,647	-12.7%
Black Country	8,228	1,646	29,980	3,202	+94.6%
Coventry and Solihull	6,198	1,240	20,133	2,150	+73.5%
Shropshire	5,754	1,151	13,612	1,327	+15.3%
Telford and Wrekin	2,828	566	14,036	1,368	+141.9%
Staffordshire	14,061	2,812	29,092	2,840	+1.0%
Stoke on Trent	3,864	773	6,067	600	-22.4%
Warwickshire	12,461	2,492	21,716	2,117	-15.1%
Worcestershire	10,028	2,006	19,385	1,890	-5.8%
Herefordshire	2,949	590	8,792	857	+45.3%
West Midlands	81,528	16,306	187,600	19,000	+16.5%