

## CENSUS ADVISORY GROUP

### AG (10) 20: 2011 Census Coverage assessment: CCS sample sizes and Estimation Areas for Local Authorities

## 2011 Census Coverage assessment: CCS sample sizes and Estimation Areas for Local Authorities – autumn 2010

### Part 1 – CCS sample sizes

#### Sample Design

The CCS will be a stratified two-stage sample selection of postcodes that will be independently re-enumerated. The first stage will select a sample of Output Areas (OAs), stratified by Local Authority and a national hard to count (HtC) index. The second stage will then select approximately half the postcodes from within each selected Output Area – the selected postcodes are referred to as a ‘cluster’ of postcodes within the Output Area..

As undercount is disproportionately distributed across areas, the OAs within each Local Authority are stratified according to a hard to count index. This index attempts to capture the variation associated with those characteristics most associated with undercount in a census. ONS (2009) describes how the index is constructed using a model based on measurable and updatable variables as indicators of household non-response. Variables used in the index include:

- The proportion of persons claiming Income Support or Jobseeker's Allowance;
- A measure of the proportion of persons who are non-'White British';
- A measure of the relative house price within a local authority;
- A measure of dwelling density

The model predicts the non-response rate for Lower layer Super Output Areas (LSOAs), and then this is split into a national categorisation to form the HtC index. The national distribution is 40%, 40%, 10%, 8% and 2%.

The selection of the sample from the stratification outlined above requires a method to allocate the overall sample across the strata. For 2011, the data obtained on coverage patterns from the 2001 Census provide a good proxy and are used to allocate the sample. However, the actual 2011 coverage patterns are not always going to follow those seen in 2001 so a conservative allocation using the 2001 data is adopted.

The methodology is to use the household imputation counts from the 2001 ONC process (with some allowances that reflect the post-census adjustments) to derive the expected variability of coverage within each stratum, and it is this that drives the sample allocation. Therefore, a Local Authority that has high variability within its hard to count strata will have a proportionally larger sample than areas with lower variability. Equally, a Local Authority that has a large population or had a high undercount in 2001 will also have a proportionally larger sample. To ensure a conservative allocation, a minimum sample size constraint of one Output Area within each HtC stratum of each LA is applied. This also ensures representation for each LA. Finally, there is a maximum sample size constraint of 60 Output Areas per LA to ensure that areas that had extremely variable coverage do not have too large a sample to guard against over-allocating based upon the 2001 situation. There are one or two exceptions to this (Birmingham and Leeds) because of their population size. Due to some late alterations to the sample sizes there is one LAs that has slightly more than 60.

In the final stage of selection approximately half of the postcodes from each OA are chosen using a sequential selection on a list of postcodes ordered by size to ensure that the sample of postcodes are approximately half the size (in terms of households) of the Output Area. These selected postcode clusters form the CCS sample.

### **Overall Sample Size**

The sample size of the CCS must be sufficiently large that the accuracy of the population estimates is acceptable. The larger the sample size, the more accurate the population estimates, however this must be balanced against the cost and practicalities of carrying out a larger CCS. A sample size similar to that employed in 2001 of around 17,000 postcodes (about 1%) or 330,000 households for England and Wales will provide an acceptable level of accuracy.

An important development for the survey in 2011 will be the ability to increase the sample size by a small amount in Local Authorities where census response is much lower than anticipated. These sample boosts will be decided and implemented part way through the census fieldwork to respond to the observed patterns, and are likely to be around 3 or 4 additional clusters per Local Authority. Whilst significant sample size boosts cannot be implemented (due to practical constraints), the default strategy when census response is low is to take action in the census fieldwork to resolve the low rates. Increasing CCS sample size through a boost is not the first option.

**Sample sizes for the 2011 CCS**

Table 1 shows, for each Local Authority, the CCS sample size by hard to count in terms of the number of output areas resulting from the application of the above methodology. The table is contained in the spreadsheet in Annex A, together with the OA population sizes and sampling fractions.

**Table 1: CCS sample size by Local Authority and Hard to Count**

LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
45UB	Adur	206	1	3	0	0	0	4
16UB	Allerdale	320	5	2	0	0	0	7
17UB	Amber Valley	396	4	2	0	0	0	6
45UC	Arun	508	7	5	1	0	0	13
37UB	Ashfield	376	4	4	0	0	0	8
29UB	Ashford	343	4	3	0	0	0	7
11UB	Aylesbury Vale	531	12	7	0	0	0	19
42UB	Babergh	296	4	1	0	0	0	5
00AB	Barking and Dagenham	539	0	0	19	11	0	30
00AC	Barnet	1015	0	10	20	11	0	41
00CC	Barnsley	744	6	9	0	0	0	15
16UC	Barrow-in-Furness	246	3	5	0	0	0	8
22UB	Basildon	559	4	12	0	0	0	16
24UB	Basingstoke and Deane	506	9	5	0	0	0	14
37UC	Bassetlaw	375	5	3	0	0	0	8
00HA	Bath and North East Somerset	580	5	8	3	0	0	16
00KB	Bedford	479	3	8	3	1	0	15
00AD	Bexley	719	0	13	4	1	0	18
00CN	Birmingham	3127	1	25	57	32	5	120
31UB	Blaby	289	4	2	0	0	0	6
00EX	Blackburn With Darwen	428	2	7	5	0	0	14
00EY	Blackpool	510	2	12	3	0	0	17
00PL	Blaenau Gwent	240	1	7	0	0	0	8
17UC	Bolsover	243	2	1	0	0	0	3
00BL	Bolton	865	4	16	5	1	0	26
32UB	Boston	194	2	2	0	0	0	4
00HN	Bournemouth	579	1	12	3	3	0	19
00MA	Bracknell Forest	349	3	6	0	0	0	9
00CX	Bradford	1457	4	21	12	2	0	39
22UC	Braintree	444	4	5	0	0	0	9
33UB	Breckland	424	7	4	0	0	0	11
00AE	Brent	800	0	0	9	39	5	53
22UD	Brentwood	233	3	2	0	0	0	5
00PB	Bridgend	434	5	5	0	0	0	10
00ML	Brighton and Hove	918	0	14	11	11	0	36
00HB	Bristol	1297	1	25	16	18	0	60
33UC	Broadland	417	6	1	0	0	0	7
00AF	Bromley	1010	3	21	10	2	0	36
47UB	Bromsgrove	286	4	1	0	0	0	5
26UB	Broxbourne	279	2	4	0	0	0	6
37UD	Broxtowe	363	2	3	1	0	0	6
30UD	Burnley	297	2	11	2	0	0	15
00BM	Bury	598	5	10	2	0	0	17
00PK	Caerphilly	559	6	5	0	0	0	11
00CY	Calderdale	653	7	12	3	0	0	22
12UB	Cambridge	341	0	4	6	1	0	11

LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
00AG	Camden	734	0	0	0	16	22	38
41UB	Cannock Chase	298	2	3	0	0	0	5
29UC	Canterbury	451	3	5	2	0	0	10
00PT	Cardiff	991	3	27	11	9	0	50
16UD	Carlisle	353	2	4	0	0	0	6
00NU	Carmarthenshire	593	11	6	0	0	0	17
22UE	Castle Point	280	4	2	0	0	0	6
00KC	Central Bedfordshire	761	9	7	0	0	0	16
00NQ	Ceredigion	252	7	5	1	0	0	13
31UC	Charnwood	487	4	5	2	0	0	11
22UF	Chelmsford	517	5	6	0	0	0	11
23UB	Cheltenham	386	4	5	3	0	0	12
38UB	Cherwell	431	5	5	0	0	0	10
00EQ	Cheshire East	1215	14	12	0	0	0	26
00EW	Cheshire West and Chester	1095	14	9	1	0	0	24
17UD	Chesterfield	348	2	4	0	0	0	6
45UD	Chichester	377	6	2	0	0	0	8
11UC	Chiltern	289	4	2	0	0	0	6
30UE	Chorley	334	4	4	0	0	0	8
19UC	Christchurch	166	1	2	0	0	0	3
00AA	City of London	36	0	0	0	3	0	3
22UG	Colchester	524	4	8	1	0	0	13
00NE	Conwy	388	6	6	0	0	0	12
16UE	Copeland	242	2	1	0	0	0	3
34UB	Corby	178	1	3	0	0	0	4
00HE	Cornwall	1758	41	17	0	0	0	58
23UC	Cotswold	295	6	1	0	0	0	7
00EJ	County Durham	1679	15	17	1	0	0	33
00GA	County of Herefordshire	633	14	4	0	0	0	18
00CQ	Coventry	979	1	21	15	4	0	41
36UB	Craven	194	3	1	0	0	0	4
45UE	Crawley	322	1	11	0	0	0	12
00AH	Croydon	1112	0	8	23	29	2	62
26UC	Dacorum	450	4	7	0	0	0	11
00EH	Darlington	344	2	3	1	0	0	6
29UD	Dartford	284	2	4	0	0	0	6
34UC	Daventry	238	3	1	0	0	0	4
00NG	Denbighshire	319	7	5	0	0	0	12
00FK	Derby	739	2	9	10	4	0	25
17UF	Derbyshire Dales	253	5	0	0	0	0	5
00CE	Doncaster	960	9	10	1	0	0	20
29UE	Dover	354	4	7	0	0	0	11
00CR	Dudley	1001	4	11	2	0	0	17
00AJ	Ealing	944	0	2	20	35	0	57
12UC	East Cambridgeshire	244	6	1	0	0	0	7
18UB	East Devon	447	5	1	0	0	0	6
19UD	East Dorset	293	4	1	0	0	0	5
24UC	East Hampshire	362	8	2	0	0	0	10
26UD	East Hertfordshire	422	7	3	0	0	0	10
32UC	East Lindsey	477	8	3	0	0	0	11
34UD	East Northamptonshire	262	3	1	0	0	0	4
00FB	East Riding of Yorkshire	1080	11	8	0	0	0	19
41UC	East Staffordshire	348	4	4	1	0	0	9
21UC	Eastbourne	328	1	8	4	0	0	13
24UD	Eastleigh	381	4	3	0	0	0	7

LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
16UF	Eden	177	3	1	0	0	0	4
43UB	Elmbridge	404	5	6	0	0	0	11
00AK	Enfield	883	0	3	15	16	0	34
22UH	Epping Forest	416	5	7	0	0	0	12
43UC	Epsom and Ewell	218	1	3	0	0	0	4
17UG	Erewash	370	4	3	0	0	0	7
18UC	Exeter	374	1	8	4	0	0	13
24UE	Fareham	352	5	1	0	0	0	6
12UD	Fenland	288	4	2	0	0	0	6
00NJ	Flintshire	496	16	3	0	0	0	19
42UC	Forest Heath	187	2	3	0	0	0	5
23UD	Forest of Dean	265	3	1	0	0	0	4
30UF	Fylde	259	3	3	0	0	0	6
00CH	Gateshead	679	3	12	4	0	0	19
37UE	Gedling	384	2	5	0	0	0	7
23UE	Gloucester	367	2	4	2	0	0	8
24UF	Gosport	252	1	6	0	0	0	7
29UG	Gravesham	307	2	8	2	0	0	12
33UD	Great Yarmouth	320	5	4	2	0	0	11
00AL	Greenwich	744	0	3	13	22	3	41
43UD	Guildford	428	4	5	1	0	0	10
00NC	Gwynedd	401	8	9	0	0	0	17
00AM	Hackney	689	0	0	0	20	32	52
00ET	Halton	384	2	7	0	0	0	9
36UC	Hambleton	307	4	1	0	0	0	5
00AN	Hammersmith and Fulham	605	0	0	0	27	8	35
31UD	Harborough	259	5	1	0	0	0	6
00AP	Haringey	737	0	0	1	46	2	49
22UJ	Harlow	266	0	7	0	0	0	7
36UD	Harrogate	530	6	4	0	0	0	10
00AQ	Harrow	633	0	4	15	10	0	29
24UG	Hart	264	4	1	0	0	0	5
00EB	Hartlepool	301	1	5	0	0	0	6
21UD	Hastings	304	2	8	4	0	0	14
24UH	Havant	386	3	3	0	0	0	6
00AR	Havering	739	1	14	4	0	0	19
26UE	Hertsmere	306	3	7	0	0	0	10
17UH	High Peak	304	6	3	0	0	0	9
00AS	Hillingdon	772	0	11	15	3	0	29
31UE	Hinckley and Bosworth	336	5	1	0	0	0	6
45UF	Horsham	404	7	3	0	0	0	10
00AT	Hounslow	672	0	3	14	15	0	32
12UE	Huntingdonshire	511	13	3	0	0	0	16
30UG	Hyndburn	264	2	9	0	0	0	11
42UD	Ipswich	402	1	6	1	1	0	9
00NA	Isle of Anglesey	227	7	3	0	0	0	10
00MW	Isle of Wight	456	9	6	0	0	0	15
00HF	Isles of scilly	9	0	1	0	0	0	1
00AU	Islington	657	0	0	0	20	13	33
00AW	Kensington and Chelsea	633	0	0	0	2	34	36
34UE	Kettering	277	3	4	0	0	0	7
33UE	Kings Lynn and West Norfolk	476	9	3	0	0	0	12
00FA	Kingston upon Hull	834	1	25	4	2	0	32
00AX	Kingston-upon-Thames	491	0	8	6	3	0	17

LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
00CZ	Kirklees	1287	9	17	10	1	0	37
00BX	Knowsley	486	4	16	1	0	0	21
00AY	Lambeth	946	0	0	0	47	13	60
30UH	Lancaster	455	4	8	2	0	0	14
00DA	Leeds	2439	11	44	18	15	3	91
00FN	Leicester	890	0	11	18	6	2	37
21UF	Lewes	320	5	4	0	0	0	9
00AZ	Lewisham	860	0	0	9	47	0	56
41UD	Lichfield	307	3	2	0	0	0	5
32UD	Lincoln	294	1	6	1	0	0	8
00BY	Liverpool	1501	1	29	16	14	0	60
00KA	Luton	567	0	12	16	9	0	37
29UH	Maidstone	460	6	4	0	0	0	10
22UK	Maldon	201	3	1	0	0	0	4
47UC	Malvern Hills	250	3	1	0	0	0	4
00BN	Manchester	1341	0	9	30	15	6	60
37UF	Mansfield	334	2	5	0	0	0	7
00LC	Medway Towns	802	5	18	3	0	0	26
31UG	Melton	160	3	1	0	0	0	4
40UB	Mendip	353	5	2	0	0	0	7
00PH	Merthyr Tydfil	187	2	2	0	0	0	4
00BA	Merton	631	0	4	15	8	0	27
18UD	Mid Devon	245	3	1	0	0	0	4
42UE	Mid Suffolk	295	8	1	0	0	0	9
45UG	Mid Sussex	422	5	3	0	0	0	8
00EC	Middlesbrough	443	1	5	8	1	0	15
00MG	Milton Keynes	676	4	14	3	0	0	21
43UE	Mole Valley	274	4	1	0	0	0	5
00PP	Monmouthshire	284	3	1	0	0	0	4
00NZ	Neath Port Talbot	466	5	5	0	0	0	10
24UJ	New Forest	588	9	2	0	0	0	11
37UG	Newark and Sherwood	368	6	2	0	0	0	8
00CJ	Newcastle upon Tyne	889	1	19	22	18	0	60
41UE	Newcastle-under-Lyme	409	4	5	0	0	0	9
00BB	Newham	734	0	0	0	54	4	58
00PR	Newport	451	3	10	2	0	0	15
18UE	North Devon	299	3	2	0	0	0	5
19UE	North Dorset	214	3	1	0	0	0	4
17UJ	North East Derbyshire	333	3	2	0	0	0	5
00FC	North East Lincolnshire	532	4	7	0	0	0	11
26UF	North Hertfordshire	398	3	5	0	0	0	8
32UE	North Kesteven	319	4	1	0	0	0	5
00FD	North Lincolnshire	520	5	6	0	0	0	11
33UF	North Norfolk	372	8	3	0	0	0	11
00HC	North Somerset	650	13	7	0	0	0	20
00CK	North Tyneside	678	2	14	2	0	0	18
44UB	North Warwickshire	210	4	1	0	0	0	5
31UH	North West Leicestershire	287	4	1	0	0	0	5
34UF	Northampton	646	5	13	3	1	0	22
00EM	Northumberland	1074	13	13	0	0	0	26
33UG	Norwich	435	0	7	4	1	0	12
00FY	Nottingham	929	0	13	13	13	2	41
44UC	Nuneaton and Bedworth	391	3	5	0	0	0	8
31UJ	Oadby and Wigston	175	1	3	0	0	0	4
00BP	Oldham	710	5	16	9	2	0	32

LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
38UC	Oxford	414	0	6	8	3	0	17
00NS	Pembrokeshire	398	7	4	0	0	0	11
30UJ	Pendle	294	3	7	4	0	0	14
00JA	Peterborough	530	2	9	3	0	0	14
00HG	Plymouth	823	4	11	4	3	0	22
00HP	Poole	472	5	7	0	0	0	12
00MR	Portsmouth	630	0	10	8	4	0	22
00NN	Powys	436	10	3	0	0	0	13
30UK	Preston	426	2	12	6	5	0	25
19UG	Purbeck	154	3	1	0	0	0	4
00MC	Reading	463	1	10	6	2	0	19
00BC	Redbridge	740	0	6	19	19	0	44
00EE	Redcar and Cleveland	462	5	8	0	0	0	13
47UD	Redditch	255	1	2	1	0	0	4
43UF	Reigate and Banstead	419	5	5	0	0	0	10
00PF	Rhondda Cynon Taff	760	12	7	0	0	0	19
30UL	Ribble Valley	193	3	1	0	0	0	4
00BD	Richmond upon Thames	608	0	15	6	0	0	21
36UE	Richmondshire	159	3	1	0	0	0	4
00BQ	Rochdale	673	5	12	5	1	0	23
22UL	Rochford	261	3	1	0	0	0	4
30UM	Rossendale	219	2	2	0	0	0	4
21UG	Rother	312	5	2	0	0	0	7
00CF	Rotherham	830	5	9	1	0	0	15
44UD	Rugby	298	2	3	0	0	0	5
43UG	Runnymede	257	2	6	0	0	0	8
37UJ	Rushcliffe	357	4	4	0	0	0	8
24UL	Rushmoor	283	5	9	0	0	0	14
00FP	Rutland	111	2	0	0	0	0	2
36UF	Ryedale	194	5	0	0	0	0	5
00BR	Salford	756	3	18	5	4	0	30
00CS	Sandwell	925	1	17	15	2	0	35
36UG	Scarborough	381	4	3	1	0	0	8
40UC	Sedgemoor	362	4	3	0	0	0	7
00CA	Sefton	937	9	19	3	0	0	31
36UH	Selby	262	3	1	0	0	0	4
29UK	Sevenoaks	361	5	3	0	0	0	8
00CG	Sheffield	1744	6	29	15	6	1	57
29UL	Shepway	336	3	4	1	0	0	8
00GG	Shropshire	969	13	5	0	0	0	18
00MD	Slough	361	0	6	13	0	0	19
00CT	Solihull	650	4	9	1	0	0	14
11UE	South Bucks	200	3	1	0	0	0	4
12UG	South Cambridgeshire	436	8	2	0	0	0	10
17UK	South Derbyshire	270	5	1	0	0	0	6
00HD	South Gloucestershire	804	8	8	0	0	0	16
18UG	South Hams	284	3	1	0	0	0	4
32UF	South Holland	270	4	1	0	0	0	5
32UG	South Kesteven	422	7	3	0	0	0	10
16UG	South Lakeland	365	7	2	0	0	0	9
33UH	South Norfolk	402	5	1	0	0	0	6
34UG	South Northamptonshire	263	6	1	0	0	0	7
38UD	South Oxfordshire	430	6	2	0	0	0	8
30UN	South Ribble	349	4	3	0	0	0	7
40UD	South Somerset	540	8	3	0	0	0	11

LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
41UF	South Staffordshire	347	8	1	0	0	0	9
00CL	South Tyneside	530	2	11	2	0	0	15
00MS	Southampton	730	0	15	10	9	0	34
00KF	Southend-on-Sea	570	2	12	2	1	0	17
00BE	Southwark	846	0	0	0	53	7	60
43UH	Spelthorne	308	2	5	0	0	0	7
26UG	St. Albans	423	5	8	0	0	0	13
42UF	St. Edmundsbury	343	3	2	0	0	0	5
00BZ	St. Helens	587	6	10	0	0	0	16
41UG	Stafford	406	4	3	0	0	0	7
41UH	Staffordshire Moorlands	319	4	1	0	0	0	5
26UH	Stevenage	263	0	7	0	0	0	7
00BS	Stockport	962	6	15	1	0	0	22
00EF	Stockton-on-Tees	582	4	5	2	0	0	11
00GL	Stoke-on-Trent	825	4	15	3	0	0	22
44UE	Stratford-upon-Avon	404	8	1	0	0	0	9
23UF	Stroud	360	5	2	0	0	0	7
42UG	Suffolk Coastal	415	6	2	0	0	0	8
00CM	Sunderland	938	4	18	3	0	0	25
43UJ	Surrey Heath	257	3	2	0	0	0	5
00BF	Sutton	610	0	11	7	2	0	20
29UM	Swale	400	4	6	0	0	0	10
00NX	Swansea	759	8	13	4	0	0	25
00HX	Swindon	607	3	6	1	0	0	10
00BT	Tameside	725	3	11	1	0	0	15
41UK	Tamworth	239	4	3	0	0	0	7
43UK	Tandridge	259	4	1	0	0	0	5
40UE	Taunton Deane	364	3	3	0	0	0	6
18UH	Teignbridge	416	7	2	0	0	0	9
00GF	Telford and Wrekin	518	6	10	0	0	0	16
22UN	Tendring	492	8	6	0	0	0	14
24UN	Test Valley	360	5	2	0	0	0	7
23UG	Tewkesbury	271	4	1	0	0	0	5
29UN	Thanet	446	2	8	2	0	0	12
26UJ	Three Rivers	272	3	4	0	0	0	7
00KG	Thurrock	468	5	15	1	0	0	21
29UP	Tonbridge and Malling	348	4	2	0	0	0	6
00HH	Torbay	462	4	8	1	0	0	13
00PM	Torfaen	302	3	4	0	0	0	7
18UK	Torridge	206	3	2	0	0	0	5
00BG	Tower Hamlets	627	0	0	0	19	34	53
00BU	Trafford	717	3	16	5	0	0	24
29UQ	Tunbridge Wells	349	5	7	1	0	0	13
22UQ	Uttlesford	230	3	1	0	0	0	4
00PD	Vale of Glamorgan	390	4	6	0	0	0	10
38UE	Vale of White Horse	382	4	1	0	0	0	5
00DB	Wakefield	1066	10	12	1	0	0	23
00CU	Walsall	819	2	16	4	1	0	23
00BH	Waltham Forest	719	0	1	6	27	4	38
00BJ	Wandsworth	925	0	0	5	33	0	38
00EU	Warrington	624	7	8	0	0	0	15
44UF	Warwick	436	3	6	2	0	0	11
26UK	Watford	258	0	7	3	0	0	10
42UH	Waveney	402	4	5	0	0	0	9
43UL	Waverley	386	6	3	0	0	0	9



LA Code	Local Authority	Total OAs	Sample size in HtC 1	Sample size in HtC 2	Sample size in HtC 3	Sample size in HtC 4	Sample size in HtC 5	Total Sample Size
21UH	Wealden	476	8	2	0	0	0	10
34UH	Wellingborough	241	2	5	0	0	0	7
26UL	Welwyn Hatfield	325	2	8	1	0	0	11
00MB	West Berkshire	467	9	3	0	0	0	12
18UL	West Devon	169	4	0	0	0	0	4
19UH	West Dorset	337	5	1	0	0	0	6
30UP	West Lancashire	351	4	4	0	0	0	8
32UH	West Lindsey	288	3	1	0	0	0	4
38UF	West Oxfordshire	320	5	1	0	0	0	6
40UF	West Somerset	129	2	1	0	0	0	3
00BK	Westminster	729	0	0	0	0	60	60
19UJ	Weymouth and Portland	220	2	3	0	0	0	5
00BW	Wigan	1011	9	13	0	0	0	22
00HY	Wiltshire	1459	24	11	0	0	0	35
24UP	Winchester	352	5	3	0	0	0	8
00ME	Windsor and Maidenhead	444	4	6	0	0	0	10
00CB	Wirral	1075	7	32	5	0	0	44
43UM	Woking	301	2	5	2	0	0	9
00MF	Wokingham	467	6	5	0	0	0	11
00CW	Wolverhampton	775	0	11	9	3	0	23
47UE	Worcester	315	2	4	1	0	0	7
45UH	Worthing	353	1	6	1	0	0	8
00NL	Wrexham	436	8	7	0	0	0	15
47UF	Wychavon	393	6	2	0	0	0	8
11UF	Wycombe	517	8	11	3	0	0	22
30UQ	Wyre	366	5	4	0	0	0	9
47UG	Wyre Forest	326	4	3	0	0	0	7
00FF	York	619	3	9	2	0	0	14

## **Part 2 – Estimation Areas**

### **The need for Estimation Areas**

Local Authorities are grouped together into Estimation Areas so that there is sufficient sample to enable estimates of the population to be made with an acceptable level of accuracy.

In the 2001 Census, the Estimation Areas were formed from contiguous groups of LAs so that the groups contained a population of roughly half a million. These Estimation Areas were used for both the survey design and the estimation process. For 2011, the Census Coverage Survey (CCS) design work concluded that the design is more efficient and will provide better estimates if the link is broken, allowing the CCS sample to be drawn using LAs as the geographical stratification, and the estimation process can then independently post-stratify the LAs into groups that are the most efficient for estimation.

ONS (2010) evaluated whether the Estimation Areas should be contiguous, as in 2001, or whether gains in efficiency can be made by using non-contiguous groupings. They found that using contiguous EAs as the basis for the coverage methodology will deliver the required level of precision of estimates at the EA and LA level. Both grouping methods provided similar quality results in terms of bias and precision of estimates nationally and at the EA and LA specific level, and therefore there is little to gain from the additional complexity of using non-contiguous EAs. The use of the national hard to count index allows areas with different characteristics to be grouped and still provide robust estimates – if there is an area with, say, a HtC 4 sample and it is grouped with an LA that has no HtC 4 then the estimate for HtC 4 only comes from the data in the first LA. The conclusion was that there is insufficient evidence to warrant the use of non-contiguous areas for the initial formation of the Estimation Areas, and a contiguous grouping should be used.

### **Methodology for grouping local authorities**

The primary criteria for grouping LAs into Estimation Areas is the CCS sample size, since there needs to be enough sample to reliably estimate the population for the Estimation Area. The coverage estimation methodology uses a ratio type estimator, and this requires around 30 observations (i.e. OAs) for robust estimation (since a ratio estimator is generally biased, where the bias is of order  $1/n$ ), as suggested by Cochran (1977, pg 153). However, given that the correlation between the DSE and Census count will be very high (which reduces the potential for bias due to small sample sizes), this requirement can be loosened to around 10 observations (OAs). Assuming that an EA will have 3 or 4 HtC strata within which separate ratio estimates are calculated, each EA should have a minimum of around 30 to 40 OAs. The CCS sample design used a maximum sample size of 60 OAs within an LA as this will be sufficient for robust estimates (with the exception of very large population LAs such as Birmingham, Leeds etc) and therefore this same soft maximum should apply to EAs. Additionally, from a user perspective it is desirable to have LAs in an EA by themselves, so a soft lower bound of 35 is used.

LAs with approximately 35 or more sampled Output Areas, under the CCS design, are not combined with other LAs as they have sufficient sample (and so these are defined as Estimation Areas in their own right).

The set of contiguous EAs are then created by grouping the remaining LAs using geography as the criteria to achieve an approximate sample of 50 Output Areas, with ideally not many with a sample size total of 60 or more.

## Resulting Estimation Areas

Table 2 shows the Estimation Areas to which each Local Authority belongs, the Estimation Area name and code, ordered by Government Office Region. The table is contained in the spreadsheet in Annex A.

**Table 2: Local Authorities and Estimation Areas**

EA Code	Estimation Area Name	LA Code	Local Authority
EE01CAMB	CAMBRIDGESHIRE AND PETERBOROUGH	00JA	Peterborough
EE01CAMB	CAMBRIDGESHIRE AND PETERBOROUGH	12UB	Cambridge
EE01CAMB	CAMBRIDGESHIRE AND PETERBOROUGH	12UC	East Cambridgeshire
EE01CAMB	CAMBRIDGESHIRE AND PETERBOROUGH	12UD	Fenland
EE01CAMB	CAMBRIDGESHIRE AND PETERBOROUGH	12UE	Huntingdonshire
EE01CAMB	CAMBRIDGESHIRE AND PETERBOROUGH	12UG	South Cambridgeshire
EE02LUTO	LUTON	00KA	Luton
EE03MIDS	MID AND S BEDFORDSHIRE	00KB	Bedford
EE03MIDS	MID AND S BEDFORDSHIRE	00KC	Central Bedfordshire
EE03MIDS	MID AND S BEDFORDSHIRE	26UF	North Hertfordshire
EE03MIDS	MID AND S BEDFORDSHIRE	26UH	Stevenage
EE04WEST	WESTERN ESSEX	00KF	Southend-on-Sea
EE04WEST	WESTERN ESSEX	00KG	Thurrock
EE04WEST	WESTERN ESSEX	22UE	Castle Point
EE04WEST	WESTERN ESSEX	22UK	Maldon
EE04WEST	WESTERN ESSEX	22UL	Rochford
EE05WHER	W HERTFORDSHIRE AND E ESSEX	22UB	Basildon
EE05WHER	W HERTFORDSHIRE AND E ESSEX	22UD	Brentwood
EE05WHER	W HERTFORDSHIRE AND E ESSEX	22UH	Epping Forest
EE05WHER	W HERTFORDSHIRE AND E ESSEX	22UJ	Harlow
EE05WHER	W HERTFORDSHIRE AND E ESSEX	22UQ	Uttlesford
EE05WHER	W HERTFORDSHIRE AND E ESSEX	26UB	Broxbourne
EE05WHER	W HERTFORDSHIRE AND E ESSEX	26UD	East Hertfordshire
EE06SSUF	S SUFFOLK AND N ESSEX	22UC	Braintree
EE06SSUF	S SUFFOLK AND N ESSEX	22UF	Chelmsford
EE06SSUF	S SUFFOLK AND N ESSEX	22UG	Colchester
EE06SSUF	S SUFFOLK AND N ESSEX	22UN	Tendring
EE06SSUF	S SUFFOLK AND N ESSEX	42UB	Babergh
EE06SSUF	S SUFFOLK AND N ESSEX	42UD	Ipswich
EE07SWHE	S AND W HERTFORDSHIRE	26UC	Dacorum
EE07SWHE	S AND W HERTFORDSHIRE	26UE	Hertsmere
EE07SWHE	S AND W HERTFORDSHIRE	26UG	St. Albans
EE07SWHE	S AND W HERTFORDSHIRE	26UJ	Three Rivers
EE07SWHE	S AND W HERTFORDSHIRE	26UK	Watford
EE07SWHE	S AND W HERTFORDSHIRE	26UL	Welwyn Hatfield
EE08WNNO	W AND N NORFOLK	33UB	Breckland
EE08WNNO	W AND N NORFOLK	33UC	Broadland
EE08WNNO	W AND N NORFOLK	33UD	Great Yarmouth
EE08WNNO	W AND N NORFOLK	33UE	Kings Lynn and West Norfolk
EE08WNNO	W AND N NORFOLK	33UF	North Norfolk
EE08WNNO	W AND N NORFOLK	42UC	Forest Heath
EE08WNNO	W AND N NORFOLK	42UF	St. Edmundsbury
EE09SUFF	SUFFOLK AND NORWICH	33UG	Norwich
EE09SUFF	SUFFOLK AND NORWICH	33UH	South Norfolk
EE09SUFF	SUFFOLK AND NORWICH	42UE	Mid Suffolk
EE09SUFF	SUFFOLK AND NORWICH	42UG	Suffolk Coastal
EE09SUFF	SUFFOLK AND NORWICH	42UH	Waveney
EM01DERB	DERBY AND EREWASH	00FK	Derby

<b>EA Code</b>	<b>Estimation Area Name</b>	<b>LA Code</b>	<b>Local Authority</b>
EM01DERB	DERBY AND EREWASH	17UG	Erewash
EM02LEIC	LEICESTER	00FN	Leicester
EM03RUTL	RUTLAND AND LEICESTERSHIRE	00FP	Rutland
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UB	Blaby
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UC	Charnwood
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UD	Harborough
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UE	Hinckley and Bosworth
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UG	Melton
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UH	North West Leicestershire
EM03RUTL	RUTLAND AND LEICESTERSHIRE	31UJ	Oadby and Wigston
EM04NOTT	NOTTINGHAM	00FY	Nottingham
EM05NSDE	N AND S DERBYSHIRE	17UB	Amber Valley
EM05NSDE	N AND S DERBYSHIRE	17UC	Bolsover
EM05NSDE	N AND S DERBYSHIRE	17UD	Chesterfield
EM05NSDE	N AND S DERBYSHIRE	17UF	Derbyshire Dales
EM05NSDE	N AND S DERBYSHIRE	17UH	High Peak
EM05NSDE	N AND S DERBYSHIRE	17UJ	North East Derbyshire
EM05NSDE	N AND S DERBYSHIRE	17UK	South Derbyshire
EM06LINC	LINCOLNSHIRE	32UB	Boston
EM06LINC	LINCOLNSHIRE	32UC	East Lindsey
EM06LINC	LINCOLNSHIRE	32UD	Lincoln
EM06LINC	LINCOLNSHIRE	32UE	North Kesteven
EM06LINC	LINCOLNSHIRE	32UF	South Holland
EM06LINC	LINCOLNSHIRE	32UG	South Kesteven
EM06LINC	LINCOLNSHIRE	32UH	West Lindsey
EM07NORT	NORTHAMPTONSHIRE	34UB	Corby
EM07NORT	NORTHAMPTONSHIRE	34UC	Daventry
EM07NORT	NORTHAMPTONSHIRE	34UD	East Northamptonshire
EM07NORT	NORTHAMPTONSHIRE	34UE	Kettering
EM07NORT	NORTHAMPTONSHIRE	34UF	Northampton
EM07NORT	NORTHAMPTONSHIRE	34UG	South Northamptonshire
EM07NORT	NORTHAMPTONSHIRE	34UH	Wellingborough
EM08NNOT	N NOTTINGHAMSHIRE	37UB	Ashfield
EM08NNOT	N NOTTINGHAMSHIRE	37UC	Bassetlaw
EM08NNOT	N NOTTINGHAMSHIRE	37UD	Broxtowe
EM08NNOT	N NOTTINGHAMSHIRE	37UE	Gedling
EM08NNOT	N NOTTINGHAMSHIRE	37UF	Mansfield
EM08NNOT	N NOTTINGHAMSHIRE	37UG	Newark and Sherwood
EM08NNOT	N NOTTINGHAMSHIRE	37UJ	Rushcliffe
IL01CITY	CITY OF LONDON AND ISLINGTON	00AA	City of London
IL01CITY	CITY OF LONDON AND ISLINGTON	00AU	Islington
IL02CAMD	CAMDEN	00AG	Camden
IL03GREE	GREENWICH	00AL	Greenwich
IL04HACK	HACKNEY	00AM	Hackney
IL05HAMM	HAMMERSMITH AND FULHAM	00AN	Hammersmith and Fulham
IL06KENS	KENSINGTON AND CHELSEA	00AW	Kensington and Chelsea
IL07LAMB	LAMBETH	00AY	Lambeth
IL08LEWI	LEWISHAM	00AZ	Lewisham
IL09SOUT	SOUTHWARK	00BE	Southwark
IL10TOWE	TOWER HAMLETS	00BG	Tower Hamlets
IL11WAND	WANDSWORTH	00BJ	Wandsworth
IL12WEST	WESTMINSTER	00BK	Westminster
NE01GATE	GATESHEAD AND NORTHUMBERLAND	00CH	Gateshead
NE01GATE	GATESHEAD AND NORTHUMBERLAND	00EM	Northumberland
NE02NEWC	NEWCASTLE UPON TYNE	00CJ	Newcastle upon Tyne
NE03TYNE	TYNESIDE AND SUNDERLAND	00CK	North Tyneside
NE03TYNE	TYNESIDE AND SUNDERLAND	00CL	South Tyneside

<b>EA Code</b>	<b>Estimation Area Name</b>	<b>LA Code</b>	<b>Local Authority</b>
NE03TYNE	TYNESIDE AND SUNDERLAND	00CM	Sunderland
NE04TEES	TEES VALLEY	00EB	Hartlepool
NE04TEES	TEES VALLEY	00EC	Middlesbrough
NE04TEES	TEES VALLEY	00EE	Redcar and Cleveland
NE04TEES	TEES VALLEY	00EF	Stockton-on-Tees
NE04TEES	TEES VALLEY	00EH	Darlington
NE05COUN	COUNTY DURHAM	00EJ	County Durham
NW01EGRE	E GREATER MANCHESTER	00BL	Bolton
NW01EGRE	E GREATER MANCHESTER	00BM	Bury
NW01EGRE	E GREATER MANCHESTER	00BQ	Rochdale
NW02MANC	MANCHESTER	00BN	Manchester
NW03OLDH	OLDHAM	00BP	Oldham
NW04SGRE	S GREATER MANCHESTER	00BR	Salford
NW04SGRE	S GREATER MANCHESTER	00BU	Trafford
NW04SGRE	S GREATER MANCHESTER	00BW	Wigan
NW05TAME	TAMESIDE AND STOCKPORT	00BS	Stockport
NW05TAME	TAMESIDE AND STOCKPORT	00BT	Tameside
NW06MERS	MERSEYSIDE	00BX	Knowsley
NW06MERS	MERSEYSIDE	00CA	Sefton
NW06MERS	MERSEYSIDE	00ET	Halton
NW07LIVE	LIVERPOOL	00BY	Liverpool
NW08STHE	ST HELENS AND WARRINGTON	00BZ	St. Helens
NW08STHE	ST HELENS AND WARRINGTON	00EU	Warrington
NW08STHE	ST HELENS AND WARRINGTON	30UE	Chorley
NW08STHE	ST HELENS AND WARRINGTON	30UN	South Ribble
NW08STHE	ST HELENS AND WARRINGTON	30UP	West Lancashire
NW09WIRR	WIRRAL	00CB	Wirral
NW10CHES	CHESHIRE E AND W	00EQ	Cheshire East
NW10CHES	CHESHIRE E AND W	00EW	Cheshire West and Chester
NW11SMID	S AND MID LANCASHIRE	00EX	Blackburn With Darwen
NW11SMID	S AND MID LANCASHIRE	30UD	Burnley
NW11SMID	S AND MID LANCASHIRE	30UG	Hyndburn
NW11SMID	S AND MID LANCASHIRE	30UJ	Pendle
NW11SMID	S AND MID LANCASHIRE	30UM	Rossendale
NW12ELAN	E LANCASHIRE	00EY	Blackpool
NW12ELAN	E LANCASHIRE	30UF	Fylde
NW12ELAN	E LANCASHIRE	30UK	Preston
NW12ELAN	E LANCASHIRE	30UL	Ribble Valley
NW13CUMB	CUMBRIA AND LANCASTER	16UB	Allerdale
NW13CUMB	CUMBRIA AND LANCASTER	16UC	Barrow-in-Furness
NW13CUMB	CUMBRIA AND LANCASTER	16UD	Carlisle
NW13CUMB	CUMBRIA AND LANCASTER	16UE	Copeland
NW13CUMB	CUMBRIA AND LANCASTER	16UF	Eden
NW13CUMB	CUMBRIA AND LANCASTER	16UG	South Lakeland
NW13CUMB	CUMBRIA AND LANCASTER	30UH	Lancaster
NW13CUMB	CUMBRIA AND LANCASTER	30UQ	Wyre
OL01BARK	BARKING AND DAGENHAM AND REDBRIDGE	00AB	Barking and Dagenham
OL01BARK	BARKING AND DAGENHAM AND REDBRIDGE	00BC	Redbridge
OL02BARN	BARNET AND ENFIELD	00AC	Barnet
OL02BARN	BARNET AND ENFIELD	00AK	Enfield
OL03BEXL	BEXLEY AND HAVERING	00AD	Bexley
OL03BEXL	BEXLEY AND HAVERING	00AR	Havering
OL04BREN	BRENT	00AE	Brent
OL05BROM	BROMLEY	00AF	Bromley
OL06CROY	CROYDON	00AH	Croydon

<b>EA Code</b>	<b>Estimation Area Name</b>	<b>LA Code</b>	<b>Local Authority</b>
OL07EALI	EALING	00AJ	Ealing
OL08HARI	HARINGEY	00AP	Haringey
OL09HARR	HARROW AND HILLINGDON	00AQ	Harrow
OL09HARR	HARROW AND HILLINGDON	00AS	Hillingdon
OL10RICH	RICHMOND AND KINGSTON AND HOUNSLOW	00AT	Hounslow
OL10RICH	RICHMOND AND KINGSTON AND HOUNSLOW	00AX	Kingston-upon-Thames
OL10RICH	RICHMOND AND KINGSTON AND HOUNSLOW	00BD	Richmond upon Thames
OL11MERT	MERTON AND SUTTON	00BA	Merton
OL11MERT	MERTON AND SUTTON	00BF	Sutton
OL12NEWH	NEWHAM	00BB	Newham
OL13WALT	WALTHAM FOREST	00BH	Waltham Forest
SE01NORT	NORTHERN KENT	00LC	Medway Towns
SE01NORT	NORTHERN KENT	29UD	Dartford
SE01NORT	NORTHERN KENT	29UG	Gravesham
SE01NORT	NORTHERN KENT	29UP	Tonbridge and Malling
SE02BERK	BERKSHIRE AND BASINGSTOKE AND DEANE	00MA	Bracknell Forest
SE02BERK	BERKSHIRE AND BASINGSTOKE AND DEANE	00MB	West Berkshire
SE02BERK	BERKSHIRE AND BASINGSTOKE AND DEANE	00MC	Reading
SE02BERK	BERKSHIRE AND BASINGSTOKE AND DEANE	00MF	Wokingham
SE02BERK	BERKSHIRE AND BASINGSTOKE AND DEANE	24UB	Basingstoke and Deane
SE03SLOU	SLOUGH WINDSOR AND WYCOMBE	00MD	Slough
SE03SLOU	SLOUGH WINDSOR AND WYCOMBE	00ME	Windsor and Maidenhead
SE03SLOU	SLOUGH WINDSOR AND WYCOMBE	11UF	Wycombe
SE04SBUC	S BUCKS AND MILTON KEYNES	00MG	Milton Keynes
SE04SBUC	S BUCKS AND MILTON KEYNES	11UB	Aylesbury Vale
SE04SBUC	S BUCKS AND MILTON KEYNES	11UC	Chiltern
SE04SBUC	S BUCKS AND MILTON KEYNES	11UE	South Bucks
SE05BRIG	BRIGHTON AND HOVE	00ML	Brighton and Hove
SE06SHAM	S HAMPSHIRE	00MR	Portsmouth
SE06SHAM	S HAMPSHIRE	00MW	Isle of Wight
SE06SHAM	S HAMPSHIRE	24UE	Fareham
SE06SHAM	S HAMPSHIRE	24UF	Gosport
SE06SHAM	S HAMPSHIRE	24UH	Havant
SE07SOUT	SOUTHAMPTON	00MS	Southampton
SE08EMID	E AND MID SUSSEX	21UC	Eastbourne
SE08EMID	E AND MID SUSSEX	21UF	Lewes
SE08EMID	E AND MID SUSSEX	21UH	Wealden
SE08EMID	E AND MID SUSSEX	45UG	Mid Sussex
SE09ESUS	E SUSSEX AND E KENT	21UD	Hastings
SE09ESUS	E SUSSEX AND E KENT	21UG	Rother
SE09ESUS	E SUSSEX AND E KENT	29UE	Dover
SE09ESUS	E SUSSEX AND E KENT	29UL	Shepway
SE09ESUS	E SUSSEX AND E KENT	29UQ	Tunbridge Wells
SE10SEHA	S E HAMPSHIRE	24UC	East Hampshire
SE10SEHA	S E HAMPSHIRE	24UD	Eastleigh
SE10SEHA	S E HAMPSHIRE	24UG	Hart
SE10SEHA	S E HAMPSHIRE	24UJ	New Forest
SE10SEHA	S E HAMPSHIRE	24UL	Rushmoor
SE10SEHA	S E HAMPSHIRE	24UN	Test Valley
SE10SEHA	S E HAMPSHIRE	24UP	Winchester
SE11EAST	EASTERN KENT	29UB	Ashford
SE11EAST	EASTERN KENT	29UC	Canterbury
SE11EAST	EASTERN KENT	29UH	Maidstone
SE11EAST	EASTERN KENT	29UM	Swale
SE11EAST	EASTERN KENT	29UN	Thanet

<b>EA Code</b>	<b>Estimation Area Name</b>	<b>LA Code</b>	<b>Local Authority</b>
SE12ESUR	E SURREY AND SEVENOAKS	29UK	Sevenoaks
SE12ESUR	E SURREY AND SEVENOAKS	43UB	Elmbridge
SE12ESUR	E SURREY AND SEVENOAKS	43UC	Epsom and Ewell
SE12ESUR	E SURREY AND SEVENOAKS	43UE	Mole Valley
SE12ESUR	E SURREY AND SEVENOAKS	43UF	Reigate and Banstead
SE12ESUR	E SURREY AND SEVENOAKS	43UK	Tandridge
SE13OXFO	OXFORDSHIRE AND OXFORD	38UB	Cherwell
SE13OXFO	OXFORDSHIRE AND OXFORD	38UC	Oxford
SE13OXFO	OXFORDSHIRE AND OXFORD	38UD	South Oxfordshire
SE13OXFO	OXFORDSHIRE AND OXFORD	38UE	Vale of White Horse
SE13OXFO	OXFORDSHIRE AND OXFORD	38UF	West Oxfordshire
SE14SMID	S AND MID SURREY	43UD	Guildford
SE14SMID	S AND MID SURREY	43UG	Runnymede
SE14SMID	S AND MID SURREY	43UH	Spelthorne
SE14SMID	S AND MID SURREY	43UJ	Surrey Heath
SE14SMID	S AND MID SURREY	43UL	Waverley
SE14SMID	S AND MID SURREY	43UM	Woking
SE15WSU	S AND W SUSSEX	45UB	Adur
SE15WSU	S AND W SUSSEX	45UC	Arun
SE15WSU	S AND W SUSSEX	45UD	Chichester
SE15WSU	S AND W SUSSEX	45UE	Crawley
SE15WSU	S AND W SUSSEX	45UF	Horsham
SE15WSU	S AND W SUSSEX	45UH	Worthing
SW01NESO	N E SOMERSET AND S GLOUCS	00HA	Bath and North East Somerset
SW01NESO	N E SOMERSET AND S GLOUCS	00HC	North Somerset
SW01NESO	N E SOMERSET AND S GLOUCS	00HD	South Gloucestershire
SW02BRIS	BRISTOL	00HB	Bristol
SW03CORN	CORNWALL AND ISLES OF SCILLY	00HE	Cornwall
SW03CORN	CORNWALL AND ISLES OF SCILLY	00HF	Isles of scilly
SW04PLYM	PLYMOUTH TORBAY AND S HAMS	00HG	Plymouth
SW04PLYM	PLYMOUTH TORBAY AND S HAMS	00HH	Torbay
SW04PLYM	PLYMOUTH TORBAY AND S HAMS	18UG	South Hams
SW05DORS	DORSET AND CHRISTCHURCH	00HN	Bournemouth
SW05DORS	DORSET AND CHRISTCHURCH	00HP	Poole
SW05DORS	DORSET AND CHRISTCHURCH	19UC	Christchurch
SW05DORS	DORSET AND CHRISTCHURCH	19UD	East Dorset
SW05DORS	DORSET AND CHRISTCHURCH	19UE	North Dorset
SW05DORS	DORSET AND CHRISTCHURCH	19UG	Purbeck
SW05DORS	DORSET AND CHRISTCHURCH	19UH	West Dorset
SW05DORS	DORSET AND CHRISTCHURCH	19UJ	Weymouth and Portland
SW06GLOU	GLOUCESTERSHIRE	00HX	Swindon
SW06GLOU	GLOUCESTERSHIRE	23UB	Cheltenham
SW06GLOU	GLOUCESTERSHIRE	23UC	Cotswold
SW06GLOU	GLOUCESTERSHIRE	23UD	Forest of Dean
SW06GLOU	GLOUCESTERSHIRE	23UE	Gloucester
SW06GLOU	GLOUCESTERSHIRE	23UF	Stroud
SW06GLOU	GLOUCESTERSHIRE	23UG	Tewkesbury
SW07WILT	WILTSHIRE	00HY	Wiltshire
SW08MIDE	MID AND E DEVON AND SOMERSET	18UB	East Devon
SW08MIDE	MID AND E DEVON AND SOMERSET	18UD	Mid Devon
SW08MIDE	MID AND E DEVON AND SOMERSET	40UB	Mendip
SW08MIDE	MID AND E DEVON AND SOMERSET	40UC	Sedgemoor
SW08MIDE	MID AND E DEVON AND SOMERSET	40UD	South Somerset
SW08MIDE	MID AND E DEVON AND SOMERSET	40UE	Taunton Deane
SW08MIDE	MID AND E DEVON AND SOMERSET	40UF	West Somerset
SW09NWDE	N AND W DEVON AND TEIGNBRIDGE	18UC	Exeter
SW09NWDE	N AND W DEVON AND TEIGNBRIDGE	18UE	North Devon

<b>EA Code</b>	<b>Estimation Area Name</b>	<b>LA Code</b>	<b>Local Authority</b>
SW09NWDE	N AND W DEVON AND TEIGNBRIDGE	18UH	Teignbridge
SW09NWDE	N AND W DEVON AND TEIGNBRIDGE	18UK	Torrige
SW09NWDE	N AND W DEVON AND TEIGNBRIDGE	18UL	West Devon
WA01NWWA	N W WALES	00NA	Isle of Anglesey
WA01NWWA	N W WALES	00NC	Gwynedd
WA01NWWA	N W WALES	00NE	Conwy
WA01NWWA	N W WALES	00NQ	Ceredigion
WA02DENB	DENBIGHSHIRE FLINTSHIRE AND WREXHAM	00NG	Denbighshire
WA02DENB	DENBIGHSHIRE FLINTSHIRE AND WREXHAM	00NJ	Flintshire
WA02DENB	DENBIGHSHIRE FLINTSHIRE AND WREXHAM	00NL	Wrexham
WA03SWWA	S W WALES AND POWYS	00NN	Powys
WA03SWWA	S W WALES AND POWYS	00NS	Pembrokeshire
WA03SWWA	S W WALES AND POWYS	00NU	Carmarthenshire
WA03SWWA	S W WALES AND POWYS	00PP	Monmouthshire
WA04SWAL	S WALES	00NX	Swansea
WA04SWAL	S WALES	00NZ	Neath Port Talbot
WA04SWAL	S WALES	00PB	Bridgend
WA04SWAL	S WALES	00PD	Vale of Glamorgan
WA05SEWA	S E WALES	00PF	Rhondda Cynon Taff
WA05SEWA	S E WALES	00PH	Merthyr Tydfil
WA05SEWA	S E WALES	00PK	Caerphilly
WA05SEWA	S E WALES	00PL	Blaenau Gwent
WA05SEWA	S E WALES	00PM	Torfaen
WA05SEWA	S E WALES	00PR	Newport
WA06CARD	CARDIFF	00PT	Cardiff
WM01BIRM	BIRMINGHAM	00CN	Birmingham
WM02COVE	COVENTRY	00CQ	Coventry
WM03DUDL	DUDLEY AND SANDWELL	00CR	Dudley
WM03DUDL	DUDLEY AND SANDWELL	00CS	Sandwell
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	00CT	Solihull
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	41UB	Cannock Chase
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	41UC	East Staffordshire
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	41UD	Lichfield
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	41UK	Tamworth
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	44UB	North Warwickshire
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	44UC	Nuneaton and Bedworth
WM04ESTA	E STAFFORDSHIRE AND W MIDLANDS	44UD	Rugby
WM05WALS	WALSALL AND WOLVERHAMPTON	00CU	Walsall
WM05WALS	WALSALL AND WOLVERHAMPTON	00CW	Wolverhampton
WM06SHRO	SHROPSHIRE HEREFORDSHIRE AND TELFORD	00GA	County of Herefordshire
WM06SHRO	SHROPSHIRE HEREFORDSHIRE AND TELFORD	00GF	Telford and Wrekin
WM06SHRO	SHROPSHIRE HEREFORDSHIRE AND TELFORD	00GG	Shropshire
WM07STAF	STAFFORDSHIRE	00GL	Stoke-on-Trent
WM07STAF	STAFFORDSHIRE	41UE	Newcastle-under-Lyme
WM07STAF	STAFFORDSHIRE	41UF	South Staffordshire
WM07STAF	STAFFORDSHIRE	41UG	Stafford
WM07STAF	STAFFORDSHIRE	41UH	Staffordshire Moorlands
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	44UE	Stratford-upon-Avon
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	44UF	Warwick
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	47UB	Bromsgrove
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	47UC	Malvern Hills
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	47UD	Redditch
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	47UE	Worcester
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	47UF	Wychavon
WM08WORC	WORCESTERSHIRE AND WARWICKSHIRE	47UG	Wyre Forest



<b>EA Code</b>	<b>Estimation Area Name</b>	<b>LA Code</b>	<b>Local Authority</b>
YH01BARN	BARNSLEY AND ROTHERHAM AND WAKEFIELD	00CC	Barnsley
YH01BARN	BARNSLEY AND ROTHERHAM AND WAKEFIELD	00CF	Rotherham
YH01BARN	BARNSLEY AND ROTHERHAM AND WAKEFIELD	00DB	Wakefield
YH02NELI	N E Lincs AND DONCASTER	00CE	Doncaster
YH02NELI	N E Lincs AND DONCASTER	00FC	North East Lincolnshire
YH02NELI	N E Lincs AND DONCASTER	00FD	North Lincolnshire
YH03SHEF	SHEFFIELD	00CG	Sheffield
YH04BRAD	BRADFORD	00CX	Bradford
YH05CALD	CALDERDALE AND KIRKLEES	00CY	Calderdale
YH05CALD	CALDERDALE AND KIRKLEES	00CZ	Kirklees
YH06LEED	LEEDS	00DA	Leeds
YH07ERID	E RIDING AND HULL	00FA	Kingston upon Hull
YH07ERID	E RIDING AND HULL	00FB	East Riding of Yorkshire
YH08NYOR	N YORKSHIRE AND YORK	00FF	York
YH08NYOR	N YORKSHIRE AND YORK	36UB	Craven
YH08NYOR	N YORKSHIRE AND YORK	36UC	Hambleton
YH08NYOR	N YORKSHIRE AND YORK	36UD	Harrogate
YH08NYOR	N YORKSHIRE AND YORK	36UE	Richmondshire
YH08NYOR	N YORKSHIRE AND YORK	36UF	Ryedale
YH08NYOR	N YORKSHIRE AND YORK	36UG	Scarborough
YH08NYOR	N YORKSHIRE AND YORK	36UH	Selby

**The following map shows the EAs for E&W**



EW estimation areas  
and LADs.pdf

**References**

Cochran, W. G. (1977) Sampling Techniques, third edition. Published by John Wiley & Sons: New York.

ONS (2009) Predicting patterns of household non-response. Census Advisory Group paper AG(09)17. Available at <http://www.ons.gov.uk/census/2011-census/consultations/user-adv-groups/census-adv-groups/general/predicting-patterns-of-household-non-response-in-the-2011-census.pdf>

ONS (2010a) Estimation Areas for the 2011 Census. UK Census Design and Methodology Advisory Committee paper (10)04. Available on request.

**Annex A**

**This spreadsheet contains the lookup files contained in Tables 1 and 2 with also a summary of the sample sizes by LA and EA including the sampling fractions.**



CCS sample sizes  
and EAs by LA.xls