

Summary

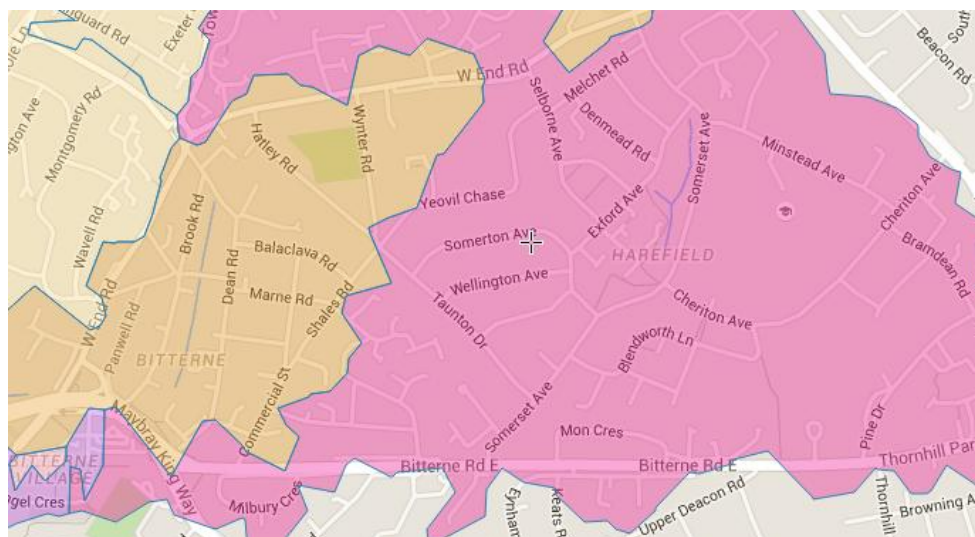
The 2011 Census for England and Wales produces a large number of detailed tables at a very local level of geography. An issue has been identified regarding 2011 Census data at a local level: we have found that the allocation of some geography information (postcodes and Output Areas), for a very small number of addresses, was not accurate. This has led to a few local areas containing an incorrect number of addresses. This affected mainly communal establishments (hotels, care homes etc), but also a small number of households.

This note explains this in more detail, including its impact on the data and why ONS is unable to change the data.

What was the cause?

During data processing all addresses were allocated a postcode and a grid reference. Output geographies, the lowest being Output Area, were based on the grid reference for an address. However, for a small number of addresses, the base data used contained postcodes and Output Areas which did not match. The number of addresses for which this occurred was just over 45,000, out of roughly 23,490,000 addresses in England and Wales.

This was resolved, and all geographies made consistent, by updating the postcode so that it sits within the Output Area for that address. The map below gives an example for one address: the original postcode was in the pink area, with the Output Area in the orange area. To make these geographies consistent, the postcode was changed to one from within the orange area.



The distances between the old and the new postcodes were typically short, averaging about 500 metres, creating very few issues at a local level. Also, the new postcodes were all within the same Local Authority as the old postcode, ensuring that there are no issues when viewing the data at Local Authority level or higher.

However, for a minority of addresses, the distance between the old and new postcodes was large enough to cause issues in the data, especially when addresses with these larger postcode changes are clustered. Annex A shows the average distance between the old and new postcodes for each Local Authority. It shows that, for the majority of Local Authorities, this distance is small, the exception being in Cornwall, particularly communal establishments within Cornwall.

What quality assurance has been completed on these data?

Quality assurance processes began in March 2011, when management information and early census returns provided the first evidence of response patterns, and continued throughout the census process through to the publication of the first outputs. Following the coverage assessment process, all the population estimates were quality assured using demographic analysis, survey data, qualitative information and administrative data to ensure the estimates were plausible. More information about the QA process, data sources and findings are available.

For more information on the QA processes for the 2011 Census please see the following link: <http://www.ons.gov.uk/census/2011census/howourcensusworks/howwetookthe2011census/howweprocessedtheinformation/dataqualityassurance>

Despite the data passing through these QA processes, it has not been possible to identify all issues in such a large and complex dataset such as a national census. Some issues emerge only when a new piece of analysis is conducted on the data. ONS has attempted to act quickly in investigating and releasing this note when the anomaly was brought to our attention.

ONS apologises for any inconvenience caused, and the lessons learned from this have been taken forward for the 2021 Census.

How is this being resolved?

ONS has decided not to amend the data to take account of this because of the difficulty of fully correcting the issue, such as being able to identify which of the inconsistent geographies is correct. The very large amount of time and resources needed to amend the huge number of tables already published based on these data is also problematic, especially as ONS does not now have a dedicated team working on data from the 2011 Census.

However ONS has produced a table in Annex B which can help users whose analysis at a lower geographical level has been affected by this issue. Annex B shows, for all addresses with a distance between the old and new postcodes greater than 3,200 metres (roughly 2 miles), the Middle Super Output Area (MSOA) for the old postcode and where they have been moved to. This table can be used to locate the number of addresses which have moved between MSOAs and to link them back to the MSOA of their old postcode. ONS is unable to provide any more detailed information than this due to its commitment to protect the confidentiality of personal data.

Annex A - Table showing the number of postcode changes for each Local Authority and the average distance (in metres) for postcode changes for each Local Authority

Local Authority	Number of postcode changes	Average distance of postcode changes (metres)
Adur	145	35.8
Allerdale	58	120.0
Amber Valley	37	201.4
Arun	129	239.0
Ashfield	66	65.6
Ashford	135	180.1
Aylesbury Vale	65	164.0
Babergh	28	85.0
Barking and Dagenham	459	408.3
Barnet	133	33.1
Barnsley	166	70.8
Barrow-in-Furness	54	96.2
Basildon	80	59.1
Basingstoke and Deane	127	102.3
Bassetlaw	66	146.0
Bath and North East Somerset	37	74.8
Bedford	228	89.4
Bexley	19	70.4
Birmingham	1076	25.9
Blaby	38	103.7
Blackburn with Darwen	155	71.5
Blackpool	66	10.3
Blaenau Gwent	41	128.4
Bolsover	16	128.8
Bolton	99	53.7
Boston	26	60.5
Bournemouth	106	18.4
Bracknell Forest	43	230.3
Bradford	356	56.5
Braintree	176	44.3
Breckland	121	79.2
Brent	170	27.6
Brentwood	80	66.2
Bridgend	47	33.1
Brighton and Hove	136	25.2
Bristol, City of	601	28.6
Broadland	64	116.6
Bromley	193	39.8
Bromsgrove	34	118.8
Broxbourne	93	16.2

Broxtowe	38	33.9
Burnley	29	19.2
Bury	143	77.9
Caerphilly	60	79.0
Calderdale	132	60.2
Cambridge	78	48.4
Camden	394	21.6
Cannock Chase	45	18.5
Canterbury	72	44.9
Cardiff	269	125.5
Carlisle	213	46.1
Carmarthenshire	106	122.1
Castle Point	19	36.3
Central Bedfordshire	345	105.2
Ceredigion	49	398.7
Charnwood	67	118.2
Chelmsford	43	104.7
Cheltenham	44	9.9
Cherwell	98	34.4
Cheshire East	221	58.3
Cheshire West and Chester	182	58.1
Chesterfield	90	41.5
Chichester	106	112.9
Chiltern	36	182.4
Chorley	81	49.9
Christchurch	25	105.2
City of London	136	41.7
Colchester	229	26.7
Conwy	171	98.3
Copeland	20	184.5
Corby	45	41.0
Cornwall	1251	16471.5
Cotswold	126	115.4
County Durham	253	82.0
Coventry	238	52.3
Craven	75	83.3
Crawley	35	61.2
Croydon	186	64.0
Dacorum	106	42.0
Darlington	38	61.6
Dartford	46	64.3
Daventry	20	179.3
Denbighshire	36	206.2
Derby	214	43.6
Derbyshire Dales	81	126.7
Doncaster	139	89.2
Dover	95	480.0
Dudley	104	51.2
Ealing	177	17.1
East Cambridgeshire	47	78.7
East Devon	68	84.9
East Dorset	121	76.7
East Hampshire	72	70.6
East Hertfordshire	137	41.0

East Lindsey	113	91.1
East Northamptonshire	77	93.2
East Riding of Yorkshire	146	97.2
East Staffordshire	77	125.9
Eastbourne	92	34.8
Eastleigh	35	42.7
Eden	23	374.1
Elmbridge	99	43.2
Enfield	199	54.5
Epping Forest	290	40.7
Epsom and Ewell	54	17.9
Erewash	78	42.2
Exeter	156	25.9
Fareham	34	23.0
Fenland	51	110.5
Flintshire	174	51.1
Forest Heath	240	48.4
Forest of Dean	90	117.9
Fylde	154	27.6
Gateshead	96	41.0
Gedling	61	45.8
Gloucester	63	53.9
Gosport	27	52.8
Gravesham	120	28.8
Great Yarmouth	143	35.6
Greenwich	271	80.9
Guildford	60	65.1
Gwynedd	100	181.0
Hackney	431	20.8
Halton	28	98.3
Hambleton	49	156.5
Hammersmith and Fulham	159	48.4
Harborough	34	122.4
Haringey	171	18.1
Harlow	8	122.8
Harrogate	48	128.0
Harrow	83	36.7
Hart	61	35.0
Hartlepool	82	35.9
Hastings	47	6.1
Havant	45	27.6
Havering	111	16.2
Herefordshire, County of	146	123.7
Hertsmere	20	98.9
High Peak	27	91.6
Hillingdon	83	57.7
Hinckley and Bosworth	67	118.6
Horsham	59	165.2
Hounslow	331	16.7
Huntingdonshire	45	140.3
Hyndburn	63	39.9
Ipswich	29	53.6
Isle of Anglesey	70	109.8
Isle of Wight	114	41.0

Isles of Scilly	5	30.6
Islington	638	14.5
Kensington and Chelsea	432	32.0
Kettering	99	33.1
King's Lynn and West Norfolk	81	171.8
Kingston upon Hull, City of	120	44.9
Kingston upon Thames	48	26.0
Kirklees	291	58.1
Knowsley	61	67.8
Lambeth	1101	9.6
Lancaster	59	68.7
Leeds	891	33.5
Leicester	315	23.9
Lewes	46	81.7
Lewisham	514	19.1
Lichfield	57	121.8
Lincoln	31	38.4
Liverpool	416	77.2
Luton	25	62.2
Maidstone	114	58.8
Maldon	33	116.2
Malvern Hills	58	141.5
Manchester	494	30.3
Mansfield	39	47.7
Medway	124	43.7
Melton	9	368.8
Mendip	64	138.0
Merthyr Tydfil	70	56.4
Merton	280	50.5
Mid Devon	39	120.9
Mid Suffolk	97	52.5
Mid Sussex	79	101.1
Middlesbrough	106	32.9
Milton Keynes	90	44.6
Mole Valley	34	84.2
Monmouthshire	76	63.7
Neath Port Talbot	48	212.6
New Forest	153	89.8
Newark and Sherwood	87	89.0
Newcastle upon Tyne	98	56.9
Newcastle-under-Lyme	42	70.5
Newham	320	30.7
Newport	124	43.0
North Devon	153	114.2
North Dorset	54	87.1
North East Derbyshire	26	85.8
North East Lincolnshire	55	36.8
North Hertfordshire	127	46.1
North Kesteven	57	80.3
North Lincolnshire	120	103.3
North Norfolk	120	118.6
North Somerset	235	51.6
North Tyneside	70	39.2
North Warwickshire	25	61.1

North West Leicestershire	44	390.9
Northampton	83	126.7
Northumberland	147	88.7
Norwich	94	18.4
Nottingham	202	44.7
Nuneaton and Bedworth	58	50.6
Oadby and Wigston	22	58.5
Oldham	120	35.5
Oxford	60	38.8
Pembrokeshire	99	156.1
Pendle	57	58.4
Peterborough	53	151.6
Plymouth	86	47.4
Poole	61	53.8
Portsmouth	111	28.2
Powys	207	371.8
Preston	88	65.3
Purbeck	34	145.7
Reading	115	37.2
Redbridge	108	33.6
Redcar and Cleveland	80	27.7
Redditch	19	17.1
Reigate and Banstead	62	44.5
Rhondda Cynon Taf	118	31.8
Ribble Valley	17	168.2
Richmond upon Thames	74	31.9
Richmondshire	49	54.4
Rochdale	121	47.6
Rochford	22	80.2
Rossendale	112	52.5
Rother	50	149.6
Rotherham	130	79.7
Rugby	36	141.7
Runnymede	72	98.9
Rushcliffe	80	25.2
Rushmoor	26	118.0
Rutland	15	307.3
Ryedale	46	183.5
Salford	399	63.4
Sandwell	156	35.7
Scarborough	141	90.9
Sedgemoor	67	41.1
Sefton	108	60.7
Selby	183	50.7
Sevenoaks	82	47.2
Sheffield	531	33.0
Shepway	56	54.7
Shropshire	220	102.0
Slough	156	56.1
Solihull	110	70.8
South Bucks	25	141.2
South Cambridgeshire	115	141.6
South Derbyshire	44	60.7
South Gloucestershire	95	106.2

South Hams	75	170.5
South Holland	29	188.1
South Kesteven	71	134.5
South Lakeland	136	166.5
South Norfolk	74	97.5
South Northamptonshire	18	283.7
South Oxfordshire	35	130.9
South Ribble	31	16.1
South Somerset	172	48.5
South Staffordshire	30	131.8
South Tyneside	20	76.8
Southampton	304	44.8
Southend-on-Sea	84	23.0
Southwark	1528	30.3
Spelthorne	38	21.1
St Albans	36	100.0
St Edmundsbury	113	152.2
St. Helens	78	48.5
Stafford	72	129.5
Staffordshire Moorlands	124	164.5
Stevenage	33	25.2
Stockport	191	43.5
Stockton-on-Tees	84	38.3
Stoke-on-Trent	122	24.9
Stratford-on-Avon	119	106.6
Stroud	51	231.2
Suffolk Coastal	102	115.1
Sunderland	298	122.2
Surrey Heath	42	41.1
Sutton	85	47.6
Swale	82	52.9
Swansea	248	46.4
Swindon	129	122.9
Tameside	91	29.6
Tamworth	30	22.5
Tandridge	24	62.1
Taunton Deane	56	134.5
Teignbridge	100	57.7
Telford and Wrekin	99	98.5
Tendring	94	71.6
Test Valley	34	188.6
Tewkesbury	73	81.3
Thanet	104	26.2
The Vale of Glamorgan	118	69.7
Three Rivers	8	9.3
Thurrock	123	43.8
Tonbridge and Malling	86	74.5
Torbay	135	20.5
Torfaen	30	88.3
Torridge	28	112.6
Tower Hamlets	989	30.3
Trafford	167	63.0
Tunbridge Wells	67	65.5
Uttlesford	18	86.3

Vale of White Horse	123	12.2
Wakefield	148	102.1
Walsall	151	46.4
Waltham Forest	90	25.4
Wandsworth	203	28.6
Warrington	113	79.9
Warwick	44	65.7
Watford	102	34.1
Waveney	56	53.4
Waverley	63	132.5
Wealden	69	215.7
Wellingborough	36	315.3
Welwyn Hatfield	80	31.1
West Berkshire	84	81.6
West Devon	36	133.9
West Dorset	147	106.4
West Lancashire	20	171.0
West Lindsey	37	625.9
West Oxfordshire	48	132.5
West Somerset	53	126.0
Westminster	1439	16.5
Weymouth and Portland	48	31.4
Wigan	132	37.0
Wiltshire	327	185.8
Winchester	105	226.9
Windsor and Maidenhead	46	61.3
Wirral	154	42.8
Woking	23	36.1
Wokingham	74	39.0
Wolverhampton	147	65.0
Worcester	51	39.2
Worthing	102	30.0
Wrexham	74	63.2
Wychavon	54	125.0
Wycombe	292	99.7
Wyre	39	52.7
Wyre Forest	41	46.0
York	119	38.5

Annex B - Table showing the original and updated MSOA for each postcode change and the number of addresses moved between them (for postcode changes moved a distance greater than 3,200 metres (roughly 2 miles))

MSOA of original postcode	MSOA of updated postcode	Number of addresses moved
Barking and Dagenham 006	Barking and Dagenham 006	1
Bury 019	Bury 025	1
Cornwall 001	Cornwall 020	1
Cornwall 001	Cornwall 031	1
Cornwall 001	Cornwall 036	1
Cornwall 002	Cornwall 021	3
Cornwall 002	Cornwall 036	1
Cornwall 002	Cornwall 041	1
Cornwall 003	Cornwall 041	1
Cornwall 004	Cornwall 018	2
Cornwall 004	Cornwall 027	1
Cornwall 004	Cornwall 031	1
Cornwall 004	Cornwall 039	3
Cornwall 005	Cornwall 019	1
Cornwall 005	Cornwall 027	1
Cornwall 006	Cornwall 011	1
Cornwall 006	Cornwall 019	1
Cornwall 007	Cornwall 019	2
Cornwall 008	Cornwall 018	2
Cornwall 008	Cornwall 020	2
Cornwall 008	Cornwall 031	2
Cornwall 008	Cornwall 036	2
Cornwall 008	Cornwall 038	2
Cornwall 008	Cornwall 041	1
Cornwall 009	Cornwall 041	2
Cornwall 010	Cornwall 003	2
Cornwall 010	Cornwall 005	2
Cornwall 010	Cornwall 011	1
Cornwall 012	Cornwall 005	1
Cornwall 012	Cornwall 006	1
Cornwall 012	Cornwall 050	1
Cornwall 012	Cornwall 053	1
Cornwall 013	Cornwall 014	1
Cornwall 013	Cornwall 049	2

Cornwall 013	Cornwall 050	1
Cornwall 013	Cornwall 052	2
Cornwall 013	Cornwall 073	1
Cornwall 014	Cornwall 018	2
Cornwall 014	Cornwall 019	3
Cornwall 014	Cornwall 038	4
Cornwall 014	Cornwall 041	3
Cornwall 016	Cornwall 006	1
Cornwall 016	Cornwall 011	4
Cornwall 016	Cornwall 014	1
Cornwall 016	Cornwall 049	3
Cornwall 016	Cornwall 051	2
Cornwall 016	Cornwall 066	1
Cornwall 016	Cornwall 071	2
Cornwall 016	Cornwall 072	1
Cornwall 017	Cornwall 008	3
Cornwall 017	Cornwall 049	1
Cornwall 017	Cornwall 051	1
Cornwall 017	Cornwall 052	1
Cornwall 017	Cornwall 066	3
Cornwall 022	Cornwall 004	1
Cornwall 022	Cornwall 005	1
Cornwall 022	Cornwall 006	1
Cornwall 022	Cornwall 008	1
Cornwall 022	Cornwall 066	1
Cornwall 023	Cornwall 003	3
Cornwall 023	Cornwall 005	1
Cornwall 023	Cornwall 008	1
Cornwall 023	Cornwall 015	3
Cornwall 023	Cornwall 053	1
Cornwall 023	Cornwall 066	1
Cornwall 025	Cornwall 015	1
Cornwall 026	Cornwall 052	4
Cornwall 026	Cornwall 071	3
Cornwall 026	Cornwall 073	2
Cornwall 028	Cornwall 002	6
Cornwall 028	Cornwall 005	1
Cornwall 028	Cornwall 006	2
Cornwall 028	Cornwall 011	5
Cornwall 028	Cornwall 046	2
Cornwall 028	Cornwall 053	3
Cornwall 028	Cornwall 066	3
Cornwall 028	Cornwall 071	2
Cornwall 029	Cornwall 001	2
Cornwall 029	Cornwall 049	2
Cornwall 032	Cornwall 001	3

Cornwall 032	Cornwall 003	2
Cornwall 032	Cornwall 005	1
Cornwall 032	Cornwall 006	1
Cornwall 032	Cornwall 007	8
Cornwall 032	Cornwall 009	1
Cornwall 032	Cornwall 057	10
Cornwall 032	Cornwall 061	5
Cornwall 032	Cornwall 068	1
Cornwall 032	Cornwall 070	3
Cornwall 033	Cornwall 002	3
Cornwall 033	Cornwall 006	1
Cornwall 033	Cornwall 007	6
Cornwall 033	Cornwall 008	2
Cornwall 033	Cornwall 015	2
Cornwall 033	Cornwall 058	2
Cornwall 033	Cornwall 068	2
Cornwall 033	Cornwall 070	3
Cornwall 034	Cornwall 049	2
Cornwall 034	Cornwall 066	1
Cornwall 037	Cornwall 009	2
Cornwall 037	Cornwall 011	5
Cornwall 037	Cornwall 014	3
Cornwall 037	Cornwall 015	3
Cornwall 037	Cornwall 046	1
Cornwall 037	Cornwall 071	5
Cornwall 040	Cornwall 003	1
Cornwall 040	Cornwall 007	1
Cornwall 040	Cornwall 054	1
Cornwall 040	Cornwall 058	1
Cornwall 040	Cornwall 065	4
Cornwall 040	Cornwall 067	3
Cornwall 040	Cornwall 069	3
Cornwall 040	Cornwall 070	1
Cornwall 042	Cornwall 005	1
Cornwall 042	Cornwall 006	2
Cornwall 042	Cornwall 007	6
Cornwall 042	Cornwall 008	1
Cornwall 042	Cornwall 058	1
Cornwall 043	Cornwall 004	1
Cornwall 043	Cornwall 009	2
Cornwall 043	Cornwall 067	1
Cornwall 044	Cornwall 003	2
Cornwall 044	Cornwall 006	1
Cornwall 044	Cornwall 009	1
Cornwall 044	Cornwall 015	1
Cornwall 044	Cornwall 019	1

Cornwall 044	Cornwall 027	1
Cornwall 044	Cornwall 061	2
Cornwall 044	Cornwall 065	3
Cornwall 044	Cornwall 067	2
Cornwall 044	Cornwall 068	1
Cornwall 044	Cornwall 070	1
Cornwall 045	Cornwall 041	2
Cornwall 045	Cornwall 054	2
Cornwall 045	Cornwall 058	2
Cornwall 045	Cornwall 061	1
Cornwall 045	Cornwall 070	1
Cornwall 046	Cornwall 036	1
Cornwall 046	Cornwall 061	1
Cornwall 046	Cornwall 065	1
Cornwall 046	Cornwall 069	1
Cornwall 047	Cornwall 001	1
Cornwall 047	Cornwall 002	1
Cornwall 047	Cornwall 057	2
Cornwall 047	Cornwall 058	1
Cornwall 047	Cornwall 069	1
Cornwall 048	Cornwall 005	3
Cornwall 048	Cornwall 007	4
Cornwall 048	Cornwall 015	3
Cornwall 048	Cornwall 058	3
Cornwall 048	Cornwall 067	2
Cornwall 048	Cornwall 068	1
Cornwall 048	Cornwall 070	1
Cornwall 049	Cornwall 021	3
Cornwall 049	Cornwall 027	1
Cornwall 049	Cornwall 035	2
Cornwall 049	Cornwall 041	1
Cornwall 050	Cornwall 057	1
Cornwall 050	Cornwall 068	1
Cornwall 051	Cornwall 019	1
Cornwall 051	Cornwall 020	2
Cornwall 051	Cornwall 030	1
Cornwall 051	Cornwall 035	4
Cornwall 052	Cornwall 021	3
Cornwall 052	Cornwall 031	5
Cornwall 052	Cornwall 038	3
Cornwall 052	Cornwall 039	1
Cornwall 052	Cornwall 041	2
Cornwall 053	Cornwall 020	4
Cornwall 053	Cornwall 024	3
Cornwall 053	Cornwall 031	3
Cornwall 053	Cornwall 035	2

Cornwall 053	Cornwall 036	3
Cornwall 055	Cornwall 018	2
Cornwall 055	Cornwall 069	1
Cornwall 056	Cornwall 069	1
Cornwall 059	Cornwall 024	1
Cornwall 059	Cornwall 035	3
Cornwall 059	Cornwall 036	4
Cornwall 059	Cornwall 039	1
Cornwall 059	Cornwall 041	1
Cornwall 060	Cornwall 001	1
Cornwall 062	Cornwall 001	1
Cornwall 062	Cornwall 004	1
Cornwall 062	Cornwall 006	1
Cornwall 062	Cornwall 065	4
Cornwall 062	Cornwall 069	4
Cornwall 062	Cornwall 070	1
Cornwall 063	Cornwall 001	3
Cornwall 063	Cornwall 002	22
Cornwall 063	Cornwall 003	1
Cornwall 063	Cornwall 004	2
Cornwall 063	Cornwall 006	5
Cornwall 063	Cornwall 007	18
Cornwall 063	Cornwall 069	8
Cornwall 063	Cornwall 070	1
Cornwall 064	Cornwall 002	1
Cornwall 064	Cornwall 006	2
Cornwall 064	Cornwall 008	1
Cornwall 064	Cornwall 009	1
Cornwall 064	Cornwall 024	1
Cornwall 064	Cornwall 039	1
Cornwall 064	Cornwall 067	1
Cornwall 064	Cornwall 070	1
Cornwall 066	Cornwall 001	1
Cornwall 066	Cornwall 020	1
Cornwall 066	Cornwall 027	8
Cornwall 066	Cornwall 039	2
Cornwall 066	Cornwall 068	1
Cornwall 071	Cornwall 018	1
Cornwall 071	Cornwall 027	1
Cornwall 071	Cornwall 035	1
Cornwall 071	Cornwall 039	2
Cornwall 071	Cornwall 041	2
Cornwall 071	Cornwall 058	1
Cornwall 072	Cornwall 058	1
Cornwall 072	Cornwall 061	2
Cornwall 072	Cornwall 065	1

Cornwall 073	Cornwall 018	1
Cornwall 073	Cornwall 019	2
Cornwall 073	Cornwall 027	1
Cornwall 073	Cornwall 030	1
Cornwall 073	Cornwall 031	1
Cornwall 073	Cornwall 039	1
Cornwall 073	Cornwall 054	2
Cornwall 073	Cornwall 058	2
Cornwall 073	Cornwall 061	5
Cornwall 073	Cornwall 065	1
North Norfolk 002	North Norfolk 002	1
Powys 012	Ceredigion 011	1
South Hams 006	Torbay 013	1
Wellingborough 001	Wellingborough 001	1
Winchester 011	Winchester 013	2