

## **Developments in alternative sources of household statistics and address lists: Investigation of a local authority Corporate Address Gazetteer as a potential source of data on dwellings**

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### **1. Summary of main findings**

This report contains a summary of analysis carried out by the General Register Office for Scotland (GROS) to compare the number of dwellings recorded on the Assessors' Portal in Edinburgh with the number of residential addresses on City of Edinburgh Council's Corporate Address Gazetteer (CAG). GROS currently uses the Assessors' Portal to produce counts of dwellings at local authority and data zone level.

Overall, there is a very strong positive relationship between the number of dwellings from the Assessors' Portal and the number of residential properties on City of Edinburgh Council's CAG. The CAG is a good alternative to our currently published statistics on dwellings. Where there are differences, the number of residential properties on the Council's CAG tends to be higher. This is often caused by areas of new housing or planned developments in which dwellings appear on the Council's planning systems but which are not yet on the Assessors' valuation lists.

### **2. Purpose**

GROS is investigating the One Scotland Gazetteer and individual local authority Corporate Address Gazetteers (CAGs) as possible replacement sources of household statistics. This is in light of the possible abolition of Council Tax, which may take place after the next Scottish Parliamentary election. A CAG is an address list held and maintained by a local authority which is the single definitive list of all addresses in that authority. Each local authority in Scotland has their own individual CAG.

This paper outlines how data from one local authority's CAG can be used to estimate the number of dwellings. It also contains some analysis of the CAG compared with dwelling counts, which GROS obtains from the Assessors' Portal. The paper also mentions areas for possible further investigations as well as developments in the OneScotland Gazetteer. The OneScotland Gazetteer is a wider initiative, which aims to bring together information from all of Scotland's 32 local authority CAGs.

### 3. Background

The GROS currently publishes estimates of households and dwellings, at local authority and at data zone level.

In February 2009, the current administration announced that it was delaying their policy of abolishing Council Tax and replacing it with a Local Income Tax until after the next Scottish Parliamentary election (<http://www.scotland.gov.uk/Topics/Government/local-government/17999/Local-Income-Tax>). As most of our household statistics are based on information from Council Tax systems, this would have a considerable effect on the work of our branch and the statistics we produce.

GROS is continuing to consider other potential replacement sources of household statistics and addressing initiatives. We are investigating the feasibility of using these other sources including their quality and coverage. Where possible, this will include comparing them to current small-area household estimates and dwelling counts. In addition we also want to assess whether we can improve the quality of our existing statistics. Last year we investigated the Electoral Register as possible alternative source of statistics on the numbers of occupied dwellings - <http://www.gro-scotland.gov.uk/files2/stats/seminars/harg-2009-1-investigation-of-electoral-register.pdf>.

Local authority CAGs are another possible data source which we can examine. Our decision to analyse City of Edinburgh's CAG has been as a result of a number of meetings between GROS and representatives of the Council. These meetings have covered the wider issues of data sharing and integrating administrative sources.

### 4. Results

The tables and maps referred to in this paper are shown in [Annex A](#). A description of the sources, methods and definitions used is shown in [Annex B](#).

#### 4.1 Local authority area analysis

[Table 1](#) shows the total number of addresses which appeared on the City of Edinburgh's CAG on 8 July 2009. There were over 258,000 addresses on the CAG. We removed any records on the CAG which did not have a residential address or where the record was missing, or where it had an invalid postcode. This amounted to over 20,000 records. After looking at the local authority's online Planning and Building Standards Portal, it appeared that many of the records with invalid postcodes were planned developments which had not yet been built. [Annex B](#) provides more information on the CAG.

We used the residential addresses on the CAG which matched up to a data zone to compare with the dwellings from the Assessors' Portal. [Table 2](#) compares the total number of residential addresses on the City of Edinburgh's CAG in July 2009 with

the total number of dwellings from the Assessors' Portal. There were over 236,000 records on the City of Edinburgh's CAG and over 231,000 records on the Assessors' Portal, a difference of around 5,000. Across Edinburgh as a whole, the number of residential addresses on the CAG is 1.02 times the number of dwellings from the Assessors' Portal.

## 4.2 Data zone level analysis

Figure 1 is a scatter plot which shows the number of residential addresses on the CAG with the number of dwellings on the Assessors' Portal, for every data zone in Edinburgh. There is a strong positive correlation between the number of residential addresses on the CAG and the number of dwellings from the Assessors' Portal – the Pearson's correlation coefficient between the two variables is 0.986. Where there is a difference between the two sources, there tends to be a higher number of residential addresses on the CAG than the dwellings for that data zone. The data zone with the highest number of residential properties on the CAG has 2,201 addresses and it has 1,747 dwellings on the Assessors' Portal. From looking at maps of this data zone, this appears to be an area with a considerable amount of new and planned housing developments.

Table 3 contains some summary statistics which show the number of residential addresses on the CAG compared with the Assessors' Portal dwelling counts for all data zones in the City of Edinburgh. Figure 2 is a histogram which shows the distribution of these figures:

- In over 70 per cent of data zones in Edinburgh, the number of residential properties on the CAG is within two per cent of the number of dwellings from the Assessors' Portal.
- There are a small number of data zones with more extreme values – the lowest proportion is 0.85 and the highest is 1.46.
- Over half of data zones have more residential records on the CAG. When looking at individual address records from the CAG and at maps of these data zones, these areas are likely to include properties which have been built but not have not yet been valued by Council Tax assessors. They also could contain properties which are still in the planning stage. There may also include some addresses in which dwellings still appear on CAG but which have actually been demolished.
- In around a sixth of all data zones the number of residential addresses on the CAG is exactly the same as the number of dwellings from the Assessors' Portal.
- Areas of undercounts might possibly be due to differences in the way some types of student accommodation are recorded on the CAGs and on the Assessors' Portal.

Please be aware that these summary figures are only applicable for the City of Edinburgh's CAG. These results may not be representative of what might be obtained from CAGs for other local authority areas in Scotland.

## 5. Future steps

At the moment, we can use the City of Edinburgh Council's CAG to approximate the number of dwellings and we have found that it is a good source of alternative dwellings statistics for that local authority area. We are aware that we have only looked in detail at the CAG for one local authority area. We plan to look at some CAGs for a number of other local authority areas to assess whether the data quality is similar to Edinburgh.

However, it appears that we cannot currently identify whether residential properties are occupied or vacant from the CAG. GROS also publishes statistics on occupied and vacant dwellings at local authority area and data zone level. This forms the basis for our household estimates, as an occupied dwelling is approximately equivalent to a household. At the moment, we will not be therefore able to use the CAG as an alternative source of data to approximate the number of households.

We also plan to investigate an extract of the OneScotland Gazetteer and to compare these with our dwelling counts from the Assessors' Portal. In addition, we want to assess how we can produce alternative statistics on occupied and vacant dwellings and second homes.

There may be developments as well on the OneScotland Gazetteer to try and identify whether properties are just completed, whether they are derelict or have another vacant status. This would help us to get more information and compare with our currently published statistics. However, we will still not be able to get any information on second homes.

### **Note:**

HARG members are asked comment on the analysis presented here, and suggest what further data sources or analysis they recommend GROS should consider, to make this work as useful as possible.

GROS: Household estimates and projections branch  
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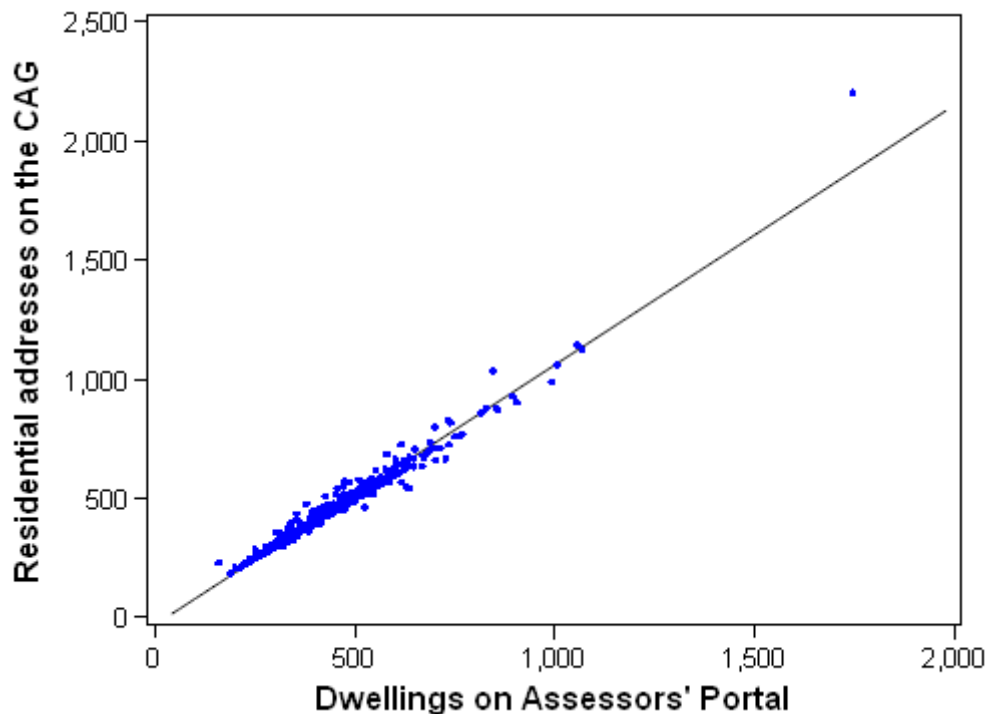
**Annex A. Tables and charts****Table 1. Summary of address types on City of Edinburgh's CAG, as at 8 July 2009**

Residential address records which match up to a data zone	236,594
Other address records which match up to a data zone	18,478
Address records which did not match up to a data zone or where the address type is not available	3,521
Total in database	258,593

**Table 2. Total number of dwellings on the City of Edinburgh's CAG compared with the Assessors' Portal, 8 July 2009**

Residential address on the CAG with a data zone	236,594
Number of dwellings from the Assessors' Portal	231,735
Residential addresses on the CAG as a proportion of all dwellings	1.02

**Figure 1. Scatter Plot of the number of dwellings on the Assessors' Portal versus the number of residential addresses on the CAG for data zones in Edinburgh City**



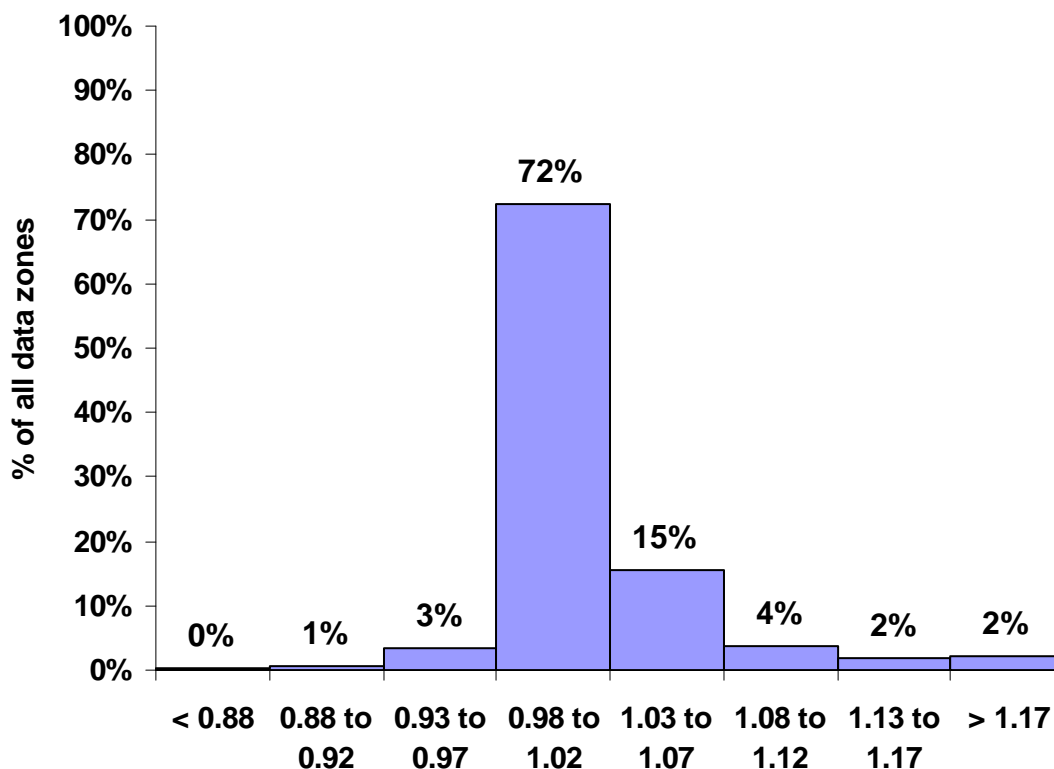
The Pearson's Correlation Coefficient is 0.986.

The black line shows what would be expected if the numbers of residential addresses on the CAG were the same as the number of dwellings from the Assessors' Portal. The chart shows that there is an overcount of residential addresses on the CAG for 58 per cent of all data zones. The graph shows a smaller number of data zones which have fewer residential addresses on the CAG. There are exact matches between residential addresses on the CAG and dwellings from the Assessors' Portal for 16 per cent of all data zones in the City of Edinburgh.

**Table 3. Residential addresses on the CAG as a proportion of all dwellings. Summary statistics for all data zones in City of Edinburgh**

Minimum value	0.85
5th percentile (5% of data zones are below this value)	0.98
Lower quartile (25% of data zones are below this value)	1.00
Median (50% of data zones are below this value)	1.00
Upper quartile (75% of data zones are below this value)	1.02
95th percentile (95% of data zones are below this value)	1.11
Maximum value	1.46
Number of data zones	549

**Figure 2. Addresses on the CAG, as a proportion of all dwellings from the Assessors' Portal, for data zones in Edinburgh. Distribution of values**



## **Annex B. Sources, methods and definitions**

### **B1. Corporate Address Gazetteers and the OneScotland Gazetteer**

The City of Edinburgh Council's CAG contains information on both residential and non-residential properties within the local authority area. Each of Scotland's 32 local authorities maintains their own individual CAG.

Each of these CAGs feed into a wider project called the OneScotland Gazetteer. Funded by the Scottish Government, the OneScotland Gazetteer is a dataset which contains the address and location of every property in Scotland. It is a collaborative piece of work by the Improvement Service, Scottish Government, GROS and local authorities, as part of the Improvement Service's national Customer First programme. This was agreed following the OneScotland Mapping Agreement. <http://www.improvementservice.org.uk/news-2009/june-2009/one-scotland-mapping-agreement/>

The OneScotland Gazetteer is structured in a logical manner and it is updated on a monthly basis. Both the OneScotland Gazetteer and the local authority CAGs which feed into it are structured in the format defined in the British Address Standard BS7666 guidance. BS7666 specifies a standard format for holding details on every property and street, and this means that addresses are structured in a logical way.

At the time of gathering data for this report last year, the OneScotland Gazetteer systems did not include a field saying whether properties are residential or otherwise. We cannot therefore use this dataset to compare with our currently published dwelling counts, it is thought that this extra information on residential properties should be added in due course.

The quality of address information is improving all the time on the OneScotland Gazetteer and in local authority CAGs. This is because the OneScotland Gazetteer address list is being used first time to support a number of projects such as the e-Planning project in Scotland and the production of Energy Performance Certificates. At the moment, we have not yet been able to find out whether properties are occupied or vacant from either the CAG or the OneScotland Gazetteer but this may be added in the future.

### **B2. Dwelling counts from the Assessors' Portal**

GROS also produces counts of dwellings in Scotland, using data obtained from the Scottish Assessors. A dwelling is defined as a self-contained unit of accommodation, such as a house or a flat. The Scottish Assessors are responsible for valuing every dwelling in Scotland, for Council Tax purposes. They maintain the web-based Scottish Assessors' Portal, which contains details of every dwelling in Scotland along with its Council Tax band. More information about the Assessors' Portal, the role of the Assessors, and the Council Tax Valuation List can be found at [www.saa.gov.uk](http://www.saa.gov.uk).



GROS uses data from the Assessors' Portal to publish information on the number of dwellings in each data zone in Scotland, along with information about the Council Tax band, type of property, and number of rooms. This information has been made available on the Scottish Neighbourhood Statistics website at [www.sns.gov.uk](http://www.sns.gov.uk) for several years and as part of our publication, 'Estimates of Households and Dwellings in Scotland, 2008' - <http://www.gro-scotland.gov.uk/statistics/publications-and-data/household-estimates-statistics/estimates-of-households-and-dwellings-in-scotland-2008/index.html>.

GROS also has access to the password protected Assessors' Portal. From here, GROS can take customised snapshots of the numbers of dwellings in a particular area such as a local authority at any given point in time. For this purpose of this analysis, we took a snapshot of the Assessors' Portal on 8 July 2009, to match the date that we received the CAG for the City of Edinburgh Council.

### **B3. Household estimates from Council Tax systems**

GROS publishes statistics on the numbers of occupied and vacant dwellings and second homes, at local authority and data zone level. Each local authority's finance department keeps a record of all dwellings and any discounts or exemptions they are entitled to, for Council Tax billing purposes. If a dwelling is vacant, or is a second home, it is entitled to a Council Tax discount or exemption. This makes it possible to estimate the number of dwellings which are occupied or vacant – **an occupied dwelling is approximately equivalent to a household.**

For more information and published figures, please see the 'Estimates of Households and Dwellings, 2008' publication: <http://www.gro-scotland.gov.uk/statistics/publications-and-data/household-estimates-statistics/estimates-of-households-and-dwellings-in-scotland-2008/index.html>.