

UNCLASSIFIED

Defined Areas – Population and Household Estimates to Mid 2013

1 Introduction

- 1.1 This note gives a detailed explanation of the methodology used to produce the Population and Household estimates for defined areas within the Tees Valley. It updates the note produced in November 2013 which can be found here [TVULink01](#) (See Appendix 1 for details of all links).

2 Mid 2013 – Population

- 2.1 The main building block, upon which all defined areas are built, is the 2011 Census Output Area (OA). The OA was the lowest level of geography at which ONS released Census data for 2011. Where a boundary splits an OAs – the OA is split based on residential address data. This gives a better fit than using only whole OAs which is what ONS uses (Best Fit method).
- 2.2 Since Mid 2011, ONS have released population estimates by single year of age for OAs alongside their LSOA and Ward Population Estimates [ONSLink01](#) which means TVU no longer need to generate OA level estimates for the population.

3 Mid 2012 to Mid 2013 – Households and Dwellings

- 3.1 ONS nor CLG produce any figures for households or dwellings at small area level and so TVU have devised a method to roll 2011 Census data into Mid year figures.
- 3.2 OA household and dwelling estimates are rolled forwards from mid year to mid year using changes in property counts from the Royal Mail Address register AddressPoint®. Household estimates are derived from the dwelling counts adjusted for the vacancy rate existing in that OA. Vacancy rates have been kept at 2011 Census levels as no viable alternative has been found. It was hoped to use Council Tax data but the definitional differences at small area level lead to spurious results.
- 3.3 Net housing change by OA was added to the dwelling stock and household numbers and each were then scaled to match District level figures for Mid 2013 taken for the TVU latest estimates which are calculated using a combination of AddressPoint®, Council Tax dwellings, LLPG Counts and Local Authority completions CLG Table 125 ([CLGLink01](#)).

3.4 Vacancy rates at the Local Authority level were kept at Mid 2012 levels while retaining the OA 2011 Census differentials

For the methodology used to rebase the back-series to 2002 and for the move from Census Day 2011 Census to Mid 2012, please see [TVULink01](#).

4 Defined Areas in the Tees Valley

- 4.1 Previously we were only able to produce population by broad age bands but now that ONS publish Single Year of Age data, we can now create any age band required. The population and household data is available for the following areas:
- Current (Statistical) Wards - Hartlepool from 2012, Stockton-on-Tees from 2005. TVU figures split the OAs that are not wholly within a Ward and so TVU figures for Stockton-on-Tees and Hartlepool will differ from the ONS Estimates which are based on whole OA only i.e. Best Fit. This can lead to differences of up to 5% and we keep ONS informed of this. The latest update can be found here [TVULink02](#).
 - Future Wards for Darlington and Middlesbrough (due to come into force in May 2015). These are TVU estimates using the exact fit method.
 - CAS Wards (Census Area Statistic Wards) - Old Wards for Hartlepool (2004-2012) and Stockton-on-Tees (Pre 2005)
 - For Darlington, Middlesbrough and Redcar & Cleveland, the LSOA level data can be aggregated directly to form current Wards (until May 2015 for Darlington and Middlesbrough).
 - LSOAs - ONS released Single Year of Age LSOA estimates for Mid 2013 in October 2014. ([ONSLink01](#))
 - Towns, Villages & Settlements
 - Parliamentary Constituencies
 - Parishes
 - Any other area can be modelled and estimates calculated, subject to minimum thresholds.

5 Future Updates

- 5.1 TVU will keep the LSOA estimates in line with ONS figures. The next set of ONS LSOA population estimates will be based on the 2014 Mid year Estimates due out in October 2015.
- 5.2 There are two problems with the ONS figures.
- 5.2.1 Firstly, they are based on new LSOAs which translate geographically to 2011 Census Wards i.e. Hartlepool and Stockton-on-Tees LSOAs aggregate to their old wards. ONS do release figures for “statistical” wards (i.e. current wards) but use whole OAs (Where OAs split Ward boundaries) rather than the TVU method that apportion OA splits according to Residential Addresses.
- 5.2.2 Secondly, other than after the decennial census, ONS do not provide annual household estimates, so this element will have to continue to be based on TVU estimates which use a combination of Royal Mail’s address file (AddressPoint®) and locally held information on Council Tax, the Land and Property Gazetteer and CLG Tables on completions.

6 Non-Residential Population

- 6.1 In some cases it is appropriate to exclude certain types of non-residential populations. For example, the two prisons within the Tees Valley (both in Stockton-on-Tees) are excluded for certain calculations such as unemployment figures. Household Population i.e. excluding the more general non-residential population living in Nursing Homes, Hospitals, Prisons, Hostels and so on are also available and it is this figure that is used to calculate Average Household Size. Proportions of non-residential populations are based on 2011 Census data and these proportions are retained for all future estimates, unless better information comes to light.

7 Converting OAs to Defined Areas

- 7.1 This is a method developed by the former JSU and has evolved over several years to its current form. The basis is the Royal Mail residential address database AddressPoint®. This provides a unique grid reference for every postal address in the Tees Valley and is updated each quarter: TVU continue to use this file as a means of matching addresses from a variety of sources and have generally been satisfied with its quality.
- 7.2 The basic assumption that is made is that population splits in the same proportions as the residential addresses. So where 40% of an OA, in terms of its residential addresses, falls within a particular area, we assume that 40% of its population will also fall there. Using GIS, the splits for any defined area can be calculated and a value given to each OA that determines the proportion of that OA that is included. Thus, any defined area is an aggregation of whole or part OAs. This differs from ONS' method which allocates the whole OA to the Ward (or Parish) in which most of the population falls. TVU have published a note that looks at the impact of that [TVULink02](#).

8 Further Information

- 8.1 For further information please visit our web-site at [TVULink03](#). From here it is possible to download the data in spreadsheet format or view the data geographically with a mapping background.

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Appendix 1 – Links

Page 1 and Page 2 - TVULink01 – Methodology for Defined areas to Mid 2012

https://www.teesvalleyunlimited.gov.uk/media/209557/tvu_definedareasupdatemid_2012_oct2013.pdf

Page 1 and Page 2 - ONSLink01 – LSOA Population Estimates for Mid 2013.

<http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-367629>

Page 1 – CLGLink01 – Table 615 – Vacant Dwellings by Local Authority

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49764/20130111_Live_table_615.xls

Page 1 – CLGLink01 – Table 125 – Annual Completions by Local Authority

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192184/LiveTable125.xls

Page 2 and Page 3 - TVULink02 – Comparison of ONS vs TVU Ward Population Estimates – Mid 2013

https://www.teesvalleyunlimited.gov.uk/media/277523/tvu_ward_population_ons_comparison_mid_2013.pdf

Page 3 - TVULink03 – TVU’s interactive mapping and information base.

http://www.teesvalleyunlimited.gov.uk/Instant%20Atlas/area_profile/atlas.html