

Small Areas for Northern Ireland

A new Statistical Geography for the 2011 Census Data

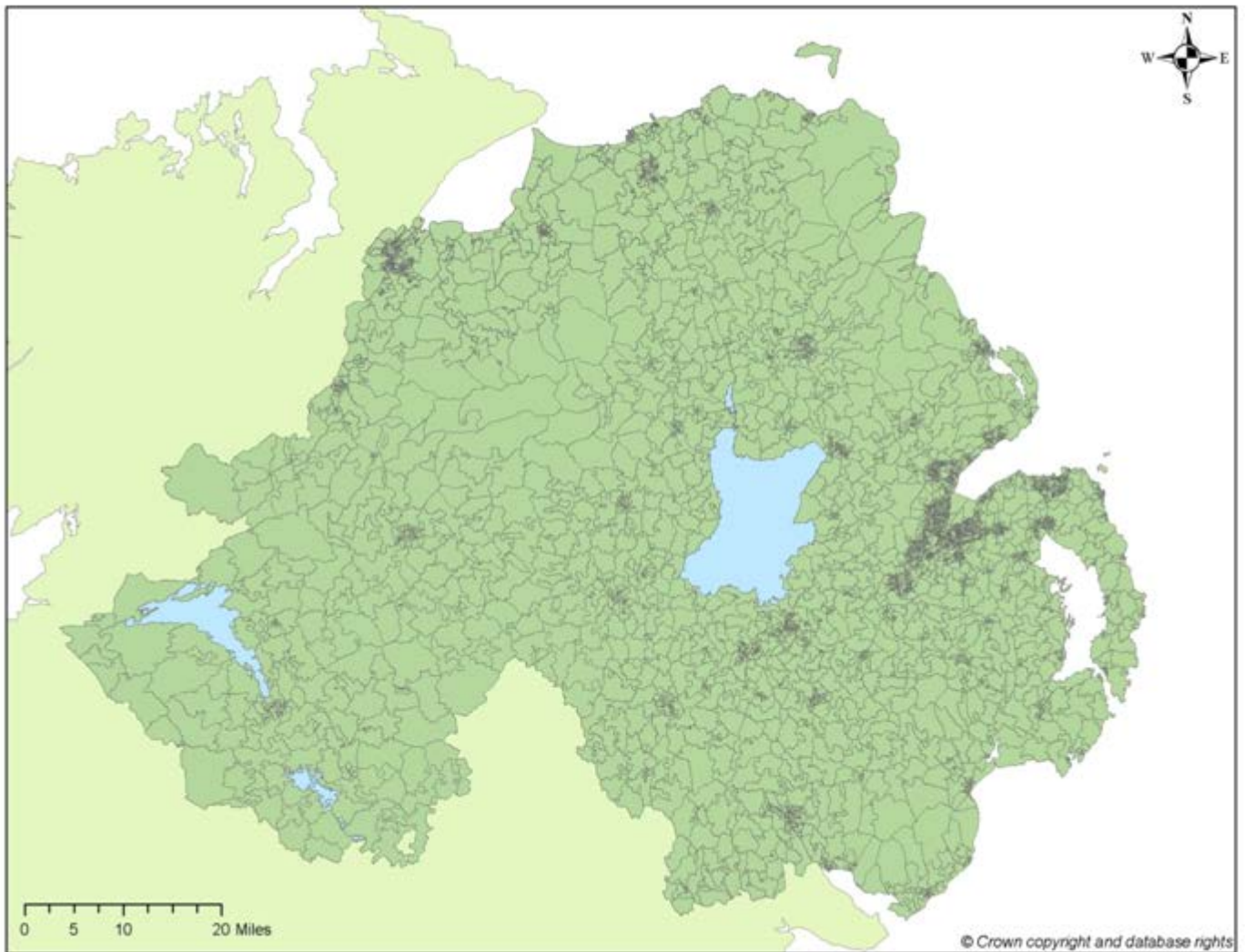


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Introduction

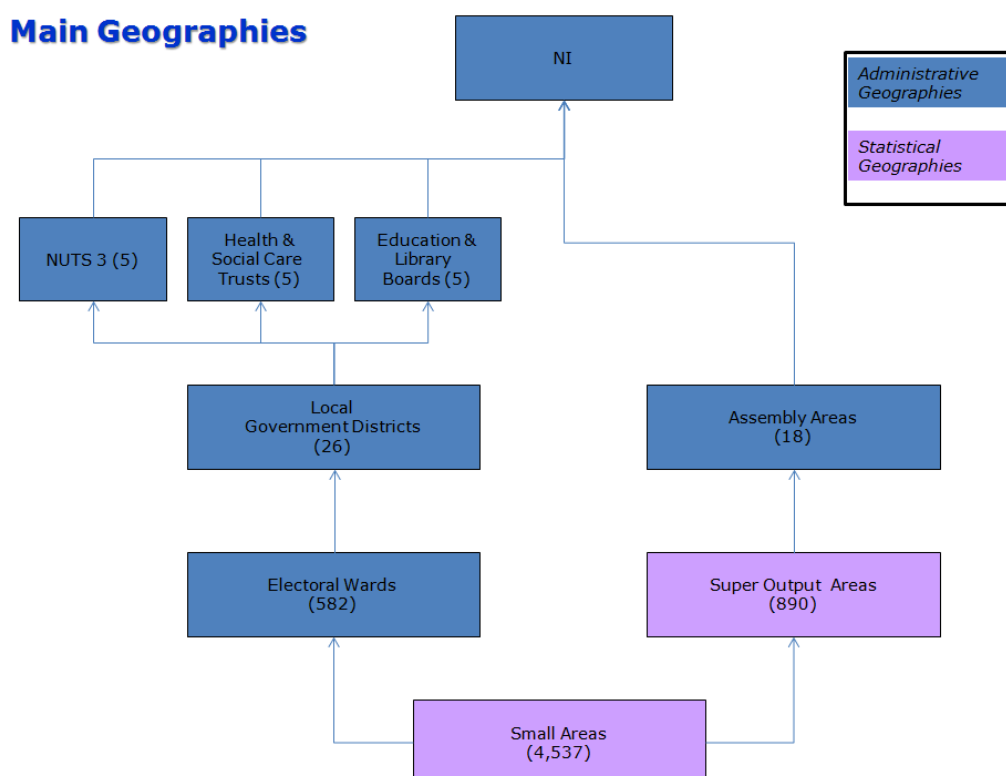
Standard output for the 2011 census will be available for a range of areas as defined on Census Day 2011¹. This paper outlines some of the background to the new statistical geography of Small Areas.

Geographical referencing

Census data are aggregated within different boundaries essentially by assembling small geographical building bricks to which the data are coded. The most adaptable and unchanging building brick is the Irish Grid co-ordinate reference. A reference to a grid square of one metre gives a building, and the households and people in it, a unique geographical location. Data with such references can be captured and aggregated for any area with a boundary represented by a line of co-ordinates - termed a digital boundary.

Every record on the output database of the 2001 and 2011 Censuses has a co-ordinate reference to a one metre resolution, as well as a postcode and more conventional area codes. This implements the NISRA geographical referencing strategy and allows the data to be aggregated to higher geographies. Requests for statistical aggregations to alternative geographical units will be subject to disclosure control considerations.

There administrative and statistical geographies used for the dissemination of the 2011 census outputs are included in the following image. Boundaries for Settlements will be disseminated at a later stage. Census Office also plans to disseminate data for the Northern Ireland Grid Squares (see output prospectus at <http://www.nisra.gov.uk/Census/2011CensusProposedOutputs.html>).



¹ [NISRA proposals for statistical outputs following the implementation of the current local government boundary review are available in paragraphs 14-17 of the linked paper http://www.nisra.gov.uk/Census/pdf/Geographic_Outputs_2011.pdf]

Administrative Areas

The main types of existing administrative areas which the Census disseminates data for are: Electoral Wards (582), Local Government Districts (26), Health and Social Care Trusts (5), Education and Library Boards (4) and Assembly Areas (coterminous with Parliamentary Constituencies) (18). All have boundaries which are currently consistent with one another although they are subject to change over time.

Table 1: Administrative Geographies and changes between 2001 and 2011 Census

Administrative Area	Number of Areas
Electoral Wards	582 (no change from 2001)
Local Government Districts	26 (no change from 2001)
Assembly Areas	18 (Changed in 2008 Boundary Commission)
EU NUTS Area	5 (no change from 2001)
Health and Social Care Trusts	5 (New geography – amalgamations of LGDs)
Education and Library Boards	5 (no change from 2001)

The 582 Wards, created following the 1992 Boundary Commission review, are the current set of wards. These fit into the 26 Local Government District boundaries, created in the same Boundary Commission, and the 18 Assembly Areas, created by the 2008 Parliamentary Boundary Commissioner (with the exception of Derryagh Ward which is split into North and South – the North part is within Belfast West and the south part is within Lagan Valley). The LGDs are consistent with those used in the 2001 census. The Assembly Areas have changed since 2001 but 2001 Census statistics for these areas were released and are available at www.nisra.gov.uk.

Statistical Areas

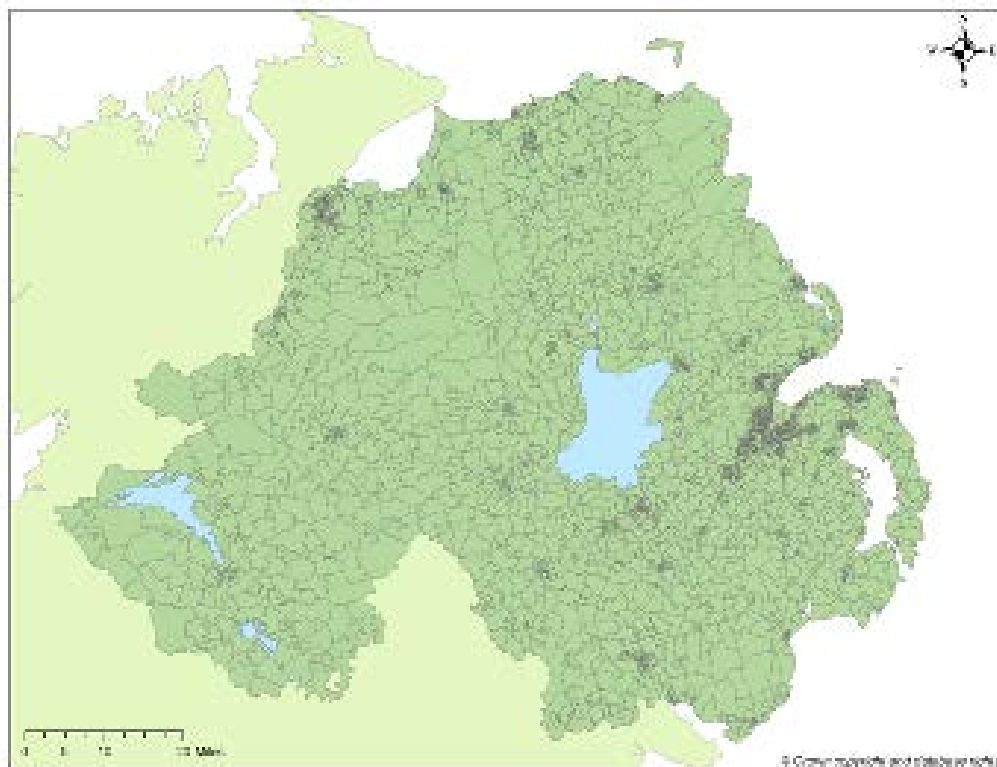
Table 2: Statistical Geographies 2011 Census

Administrative Area	Number of Areas
Super Output Areas	890 (small changes to 2001 areas)
Small Areas	4,537 (replace 2001 Census Output Areas)

Small Areas

The 2011 Small Areas are designed specifically for statistical purposes. They will be the lowest Geographical Areas the 2011 census results will be released for and will also be used for Northern Ireland Neighbourhood Statistics website www.nisra.gov.uk/ninis.

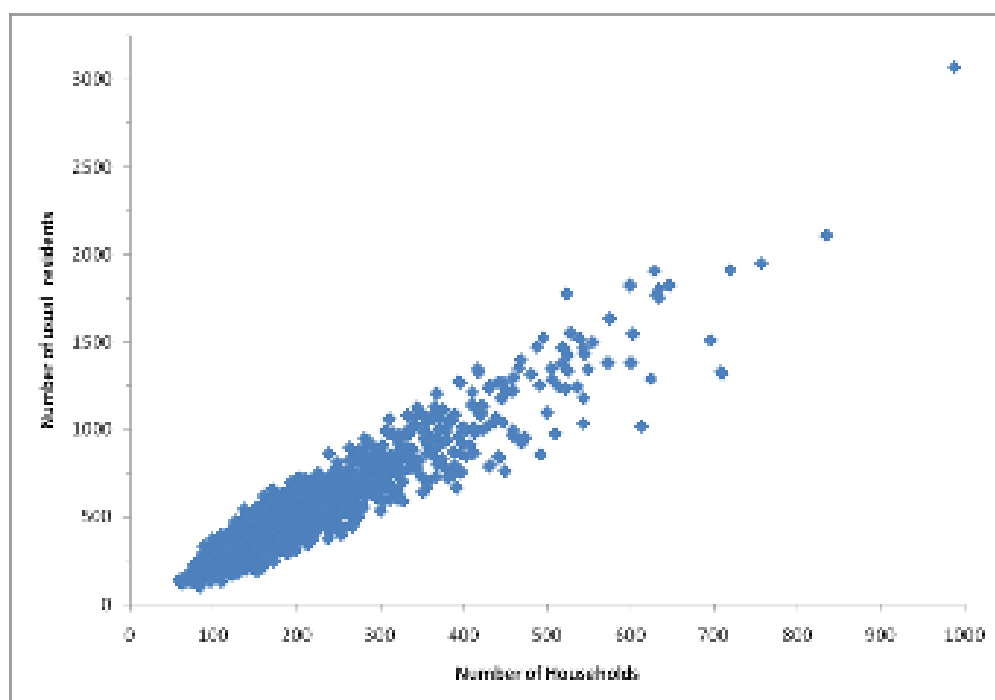
Figure 1: Map of all Small Areas across Northern Ireland



There are a total of 4,537 new Small Areas which nest within Super Output Areas, Wards, LGDs, and Assembly Areas etc.

All Small Areas are larger than the Census confidentiality threshold of 40 households and/or 100 persons.

Figure 2: Comparison of population and household size of all Small Areas across Northern Ireland



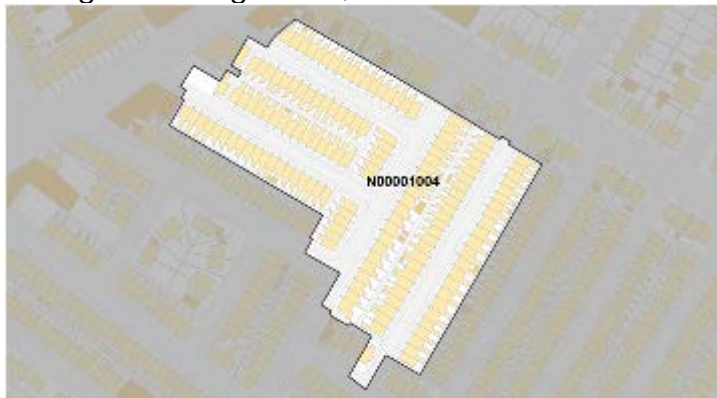
The average size of the 2011 Small Areas is 400 people and 155 households although they range in size from 59 households and 98 people to 988 households and 3,072 people.

The physical size of Small Areas varies greatly and is dependent on their location. Where possible they have regular shapes and follow existing features (i.e. roads, rivers, fence lines etc.).

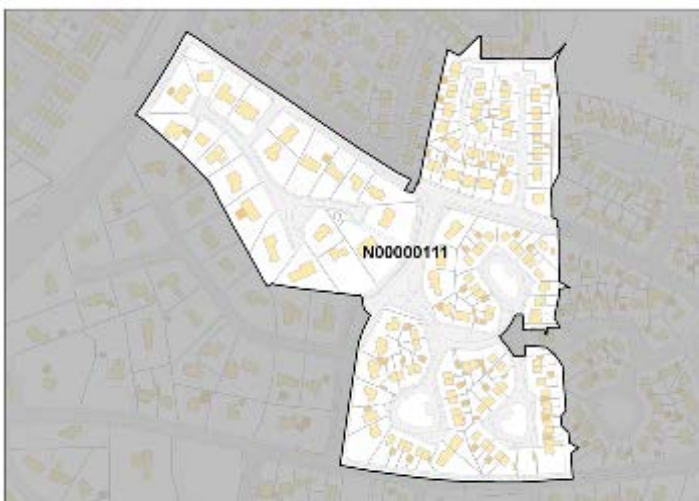
Small Areas have codes N00000001 – N00004537, adhering to an agreed United Kingdom Government Statistical Service standard for coding statistical geographies.

An example of 3 Small Areas are given in Figures 3, 4 and 5 below:

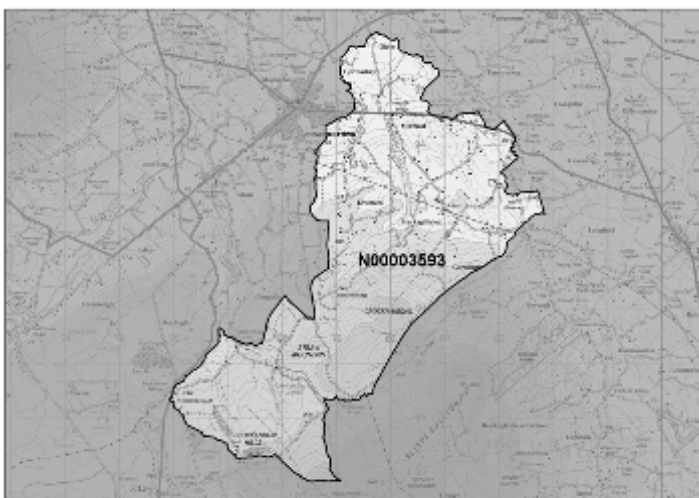
**Figure 3: Small Area in
Belfast (urban area) –
N00001004**



**Figure 4: Small Area in
a town – N00000111**



**Figure 5: Small Area in
a rural area –
N00003593**



Where possible Small Areas have been kept identical to the 2001 Census Output Areas to ensure comparability over time, however in a number of cases this was not possible and the new 2011 Small Areas were created by merging one or more of the 2001 Output Areas together.

There are several reasons for merging:

1. Fine grain geo-referencing inaccuracies of some properties in the 2001 Census have meant that comparability over time would be improved by merging one or two 2001

Census Output Areas together. There is a separate detailed paper on this on the Census website at www.nisra.gov.uk)

2. By 2011, the number of people/households in a 2001 Census Output Area did not meet the disclosure thresholds (i.e. areas that have decreased in either households, population or both)
3. Minor changes to boundaries were required (specifically in Derryaghy, Aldergrove and Loughview – see later).

A map example of where Small Areas have been created by merging Output Areas together are given below:

Figure 6: Example where two 2001 Output Areas have been merged to create a new 2011 Small Area.



Comparison to 2001 Census Output Areas

In total 4175 of the new 2011 Small Areas are coterminous with a single 2001 Census Output Area. Direct comparisons between these areas can be made. The following table shows how many 2001 Output Areas are combined to make up the new 2011 Small Areas.

Table 2: Detailed numbers of 2001 Census Output Areas merged to create 2011 Small Areas

Number of 2001 Census Output Areas combined	Number of 2011 Small Areas created
1	<u>4175</u>
2	262
3	79
4	21
All Areas	4537

In total 83% (4174 of the 5022), 2001 Census Output Areas are the same as a single 2011 Small Area. To compare data between 2001 and 2011 Censuses, the 2001 Census Output Area data needs to be aggregated to the 2011 Small Areas to make them comparable.

Modified 2001 Census Output Areas

A small number of 2001 Output Areas were modified before merging the 2001 Output Areas. The 2001 Census Output Areas and subsequent 2011 Small Areas impacted are listed in the table below:

Table 3: 2001 Census Output Area which needed to be modified prior to creation of 2011 Small Areas

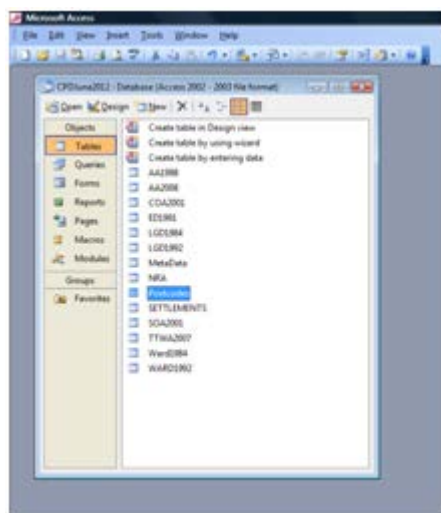
2001 Output Area	2011 Small Area	Reason Changes/How Changed
95AA010002	N00000003	(Aldergrove)
95AA010011	N00000006	To improve the boundary around the Belfast International Airport and HMF Aldergrove
95AA010009	N00000010	
95SS070007	N00003306	
95SS070008	N00003307	(Derryaghy) To align Derryaghy Super Output Areas and Small Areas with the new Assembly Area
95SS070012	N00003308	
95XX200001, 95XX200004, 95XX200005	N00004287	(Loughview) To align the Super Output Area boundary with HMF Palace Barracks
95XX200007, 95XX200009, 95XX200010	N00004290	
95XX200008	N00004291	
95OO210001	N00002902	Minor change to boundary
95PP170007, 95PP170008	N00003024	Minor change to boundary
95QQ140002, 95QQ140003	N00003127	Minor change to Small Area boundary ** minor change to SOA boundary

Modified Super Output Areas

The 2011 Super Output areas are nearly identical to the 2001 Super Output Areas with the exception of three of the modifications (Derryaghy, Aldergrove and Loughview) noted in the table above. A detailed paper on the Modified Super Output Areas is available at www.nisra.gov.uk/Geography/SOA.htm.

Resources

Central Postcode Directory (NIMA licensed product)



The Central Postcode Directory (CPD) is a product (Access database) produced by NISRA to relate both current and terminated postcodes in Northern Ireland to a range of statutory, administrative, electoral and statistical geographies.

The CPD is freely available for use by all Northern Ireland Mapping Agreement (NIMA) customers or those working on behalf of NIMA customers. Non-NIMA customers can licence the product by contacting Land and Property Services (Phone number 028 9025 5777).

The CPD provides a direct look-up between postcodes as of 1st January 2013 and a range of geographies including Parliamentary Constituencies/Assembly Areas, Local

Government Districts, Wards, Super Output Areas, Small Areas and 2001 Census Output Areas among others. A full list can be obtained in the Guidance Notes which can be viewed on the CPD web pages <http://www.nisra.gov.uk/geography/postcode.htm>

- Postcodes – Main postcode table containing geographical information for 57,933 postcodes
- SA2011 – 2011 Small Areas Lookup Table (including details of 2001 Census Output Areas)
- COA2001 – 2001 Census Output Area lookup table (including details of 2011 Small Areas)
- SOA2001 – 2001 Modified Super Output Area lookup table (including an indication of those with changes to the boundary file)
- LGD1992 – 1992 Local Government District lookup table
- Ward1992 – 1992 Electoral Ward lookup table
- AA1998 – 1998 Assembly Area lookup table
- AA2008 – 2008 Assembly Area lookup table
- Settlement – Settlement Names and Bands & Settlement Service Classification lookup table
- NRA – Neighbourhood Renewal Area lookup table
- TTWA2007 – 2007 Travel to Work Area lookup table

Look-up Tables (freely available)

The lookup tables between geographies (excluding postcodes) are available to download at <http://www.nisra.gov.uk/geography/SmallAreas.htm>

Digital Boundary Files

The 2011 Small Areas and 2001 Modified Super Output Area digital datasets are available to download from <http://www.nisra.gov.uk/geography/SmallAreas.htm> and <http://www.nisra.gov.uk/geography/SOAs.htm>. These digital datasets can be used by Geographical Information Systems (GIS). Users should note that the digital datasets provided are only digital boundaries – there is no background mapping. The Land and Property Services formerly [Ordnance Survey of Northern Ireland](#) (OSNI) can supply vector and raster maps for background mapping of Northern Ireland.

The Small Areas digital boundary datasets are available as Shapefiles or in MapInfo format.

- Shapefiles is the file format used by ESRI ArcView software but they can be read by most GIS packages. Look in the Help section of your GIS software to find information on how to import them. ESRI, the makers of ArcView, supply a free viewing package [ArcExplorer](#) which will allow these datasets to be viewed.
- MapInfo also supply a free viewing package, [MapInfo Proviewer](#), which will allow MapInfo versions of the datasets to be viewed.

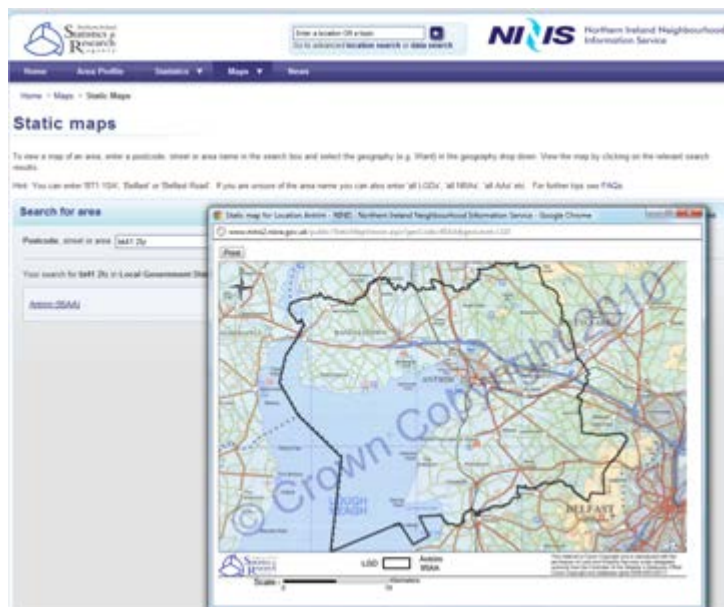


If you require digital boundaries for Local Government Districts, Electoral Wards (1984 and 1992) or Parliamentary Constituencies contact Ordnance Survey Northern Ireland (OSNI) Telephone 028-90255755, email product.management@dfpni.gov.uk or click on the logo above to visit the OSNI website.

Administrative boundary maps can be purchased from the OSNI website or images downloaded free, please click http://maps.osni.gov.uk/CMSPages/admin_boundaries.aspx

Static Maps

Static Maps for all geographical areas can be found on the NINIS website. These include HSCTs, HSSBs, LGDs, NRAs, Small Areas 2011 and OAs 2001, SOAs, and Wards



Further Information

NISRA Geography Website

www.nisra.gov.uk/geography/home.htm

Northern Ireland Neighbourhood Information Service (NINIS)

www.nisra.gov.uk/NINIS

Land and Property Services (LPS)

www.lpsni.gov.uk

Ordnance Survey Northern Ireland (OSNI) Map Shop

<https://maps.osni.gov.uk/>

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