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# Changes to Statistical Geographies in Wales, 2001 to 2011



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Llywodraeth Cymru  
Welsh Government

## **Acknowledgements**

This report was prepared by the Public Health Wales Observatory using ONS 2011 Census geography products for England and Wales.

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# 1 Background

Output areas (OAs), lower layer super output areas (LSOAs) and middle layer super output areas (MSOAs) are the main statistical geographies from which statistics are built for all higher level geographies. These statistical geographies were first introduced in 2004 by the Office for National Statistics (ONS) following the release of the 2001 Census. This paper presents the changes that have been made to statistical geographies in Wales at LSOA and MSOA level, following modifications made to the original geographies using 2011 Census populations.

## 2 Summary of key messages

- Overall in Wales, only 2.2 percent of the 2001 output areas/ super output areas have been altered following modifications made from the 2011 Census.
- Lower Super Output Areas and MSOAs created subsequent to the 2001 Census remain unchanged unless a significant population change has occurred between 2001 and 2011.
- Where populations have become too big, the LSOA or MSOA has been split into two or more areas. Where populations have become too small, the LSOA or MSOA has been merged with a neighbouring area.
- Other changes that have taken place in LSOAs or MSOAs are as a result of changes to local authority boundaries that have taken place since the OAs were developed in 2004 and/or to improve their social homogeneity. Lower super output areas and MSOAs are required to nest within local authority boundaries.
- There are now 410 MSOAs and 1909 LSOAs in Wales compared to 413 MSOAs and 1896 LSOAs when they were first introduced.

### **3 2011 Census and Statistical Geographies**

The latest census for England and Wales took place on 27 March 2011. The Census has been undertaken every ten years since its introduction in 1801, with the exception of 1941 (this was due to the Second World War).

The 2011 Census was distributed to every household in England and Wales in the form of a questionnaire and asked 56 questions in total. Fourteen questions related to the household and its accommodation. Individuals in each household were then asked 42 questions which included questions about work, education, health, national identity, passports held, ethnic background, language, second homes, religion and marital status. For Wales, there was a Welsh and English language version of the questionnaire. For Welsh residents, an additional question was asked about the Welsh language.

The Census provides a comprehensive picture of the population of England and Wales. It provides key information on health, housing, employment, transport and ethnicity. This information is of paramount importance as it is used extensively across a number of sectors to support the development of policy, resource planning and allocation; and the delivery of services across England and Wales now and for the future.

The 2011 Census will be released in four stages due to the range and volume of the results. The results are planned to be released between July 2012 and October 2013.

The Office for National Statistics released the new statistical geographies OA and super output area (SOAs) boundaries and other geography data in November 2012. New boundary geographies were created as a result of population and administrative changes identified between Census 2001 and Census 2011.

This paper presents the changes that have been made to statistical geographies following changes highlighted in the 2011 Census.

#### **3.1 Introduction to the Geographies of Wales**

There are two types of geography that are used in Wales to present information; these geographies can broadly be defined as statistical and administrative.

Statistical geographies were produced by the ONS in 2004 following the release of the 2001 Census data. Statistical geographies are designed to have similar population sizes and minimum thresholds have been set to ensure this. They were also designed to be socially homogeneous; however this was of lower priority. Having similar population sizes helps to ensure

similar levels of robustness when producing comparative statistics across a number of areas. In contrast, administrative geographies were developed for purposes other than analysis. For example, electoral divisions (also known as wards) are used to elect local government councillors. Electoral division populations can vary substantially from less than one thousand to almost twenty thousand.

There are four levels of statistical geographies in Wales:

### **3.1.1 Output Areas**

Output Areas were created by the ONS from 2001 Census statistics and were based on the 2001 census population data. Output areas were designed to be the lowest geographic level for publishing census data and were designed to be used as a building block for the production of statistics for any other higher output geography (i.e LSOAs, MSOAs).

There are 10,036 OAs in Wales which provide the base units for the collection of 2011 Census data. Output Areas are designed to have an approximate average population of 300 people with approximately 125 households. Each OA has a minimum population of 100 and a minimum of 40 resident households. The reasons for the creation of these geographies were twofold. First, to create a stable geography, free from the changes imposed by the Boundary Commission thus making comparison over time easier. Secondly, to create homogeneous geographies so that populations were similar in size with fixed minimums. This means that we are able to look at like-for-like areas when analysing data for comparative purposes.

### **3.1.2 Lower Super Output Areas**

Lower Super Output Areas have a mean population of approximately 1,500, a minimum population of 1,000 and a maximum population of 3,000. There should be a minimum of 400 households and a maximum of 1,200 households in each LSOA. This is based on the 2011 Census. LSOAs are nested within the MSOA and local authority boundaries.

### **3.1.3 Middle Super Output Areas**

Middle Super Output Areas have a mean population of about 7,000, with a minimum population of 5,000 people and not exceeding 15,000 people. The minimum number of households in each MSOA is 2,000 and the maximum is 6,000 households. This is based on the 2011 Census. Middle super output areas are nested within the local authority and Upper Super Output area boundaries (USOAs).

### 3.1.4 Upper Super Output Areas

Upper Super Output Areas have a mean population of approximately 31,000 people but populations can vary between 24,000 and 47,000 (based on Census 2001). Currently there are 94 USOAs in Wales and they are nested within the local authority boundaries. Unlike the LSOA and MSOA geographies, the USOAs in Wales were developed by key stakeholders, such as Welsh Government and the Local Government Data Unit Wales in consultation with local authorities. Consequently, they are an unofficial geography in Wales and there is no equivalent in England at present. Upper Super Output Areas are based on the 2001 Census populations and have not yet been updated by Welsh Government and the Local Government Data Unit. Welsh Government and the ONS are meeting shortly to discuss if changes will take place to USOAs as a result of 2011 Census.

## 4 Changes to statistical geography output tables between 2001 and 2011

Statistics for LSOAs and MSOAs were originally released by the ONS in 2004 and populations were based on the 2001 Census. Based on the 2001 Census population, there were 1896 LSOAs and 413 MSOAs in Wales.

Output areas and SOAs (which include LSOAs and MSOAs) created in 2004 remain unchanged unless one or more of the following is the case:

### Their population size has changed significantly

The majority of changes made to OAs/SOAs were made because of changes in population size between the 2001 Census and the 2011 Census. They have either become too big or too small and if a population became too small, merges were applied. Merges were applied to geographies meeting the following criteria:

- the OA population fell below 200 persons or 40 households;
- the LSOA population fell below 1,000 persons or 400 households; or
- the MSOA population fell below 5,000 persons or 2,000 households.

Splits were applied to geographies meeting the following criteria:

- the OA population exceeded 625 persons or 250 households;
- the LSOA population exceeded 3,000 persons or 1,200 households; or
- the MSOA population exceeded 15,000 persons or 6,000 households.

When an area is merged or split, a new 2011 unique code is formed. All former codes derived from 2001 populations are withdrawn when splits or merges have been applied. For example, 2001 LSOA codes went from 'W01000001' to 'W01001896' as there were 1896 LSOAs in Wales. All new codes now start from the code 'W01001897'. Table 1 illustrates the new unique codes for LSOAs in Ceredigion.

**Table 1: Example of coding changes between 2001 and 2011 in LSOAs in Ceredigion**

<b>2001 LSOA Code</b>	<b>2011 LSOA Code</b>	<b>Changed or unchanged</b>
W01000514	W01001934	Changed- merged with W01000526
W01000520	W01001937	Changed- merged with W01000520
W01000521	W01001937	Changed- merged with W01000521
W01000526	W01001934	Changed- merged with W01000514
W01000530	W01001935	Changed- split into W01001935 and W01001936
W01000530	W01001936	Changed- split into W01001935 and W01001936
W01000506	W01000506	Unchanged

### **To improve an OA or SOAs social homogeneity**

When the OAs were first developed for 2001 Census populations, they were designed to group together households of roughly similar social types, based on the census variables tenure and accommodation type (ONS, 2012). The idea was to make OAs as socially homogeneous as possible. However in the final design of the OAs, social homogeneity was given lower priority by the ONS and therefore some 2001 OAs were not socially homogeneous. The need to align OAs to administrative boundaries, and the aim to create OAs of roughly similar population sizes took priority.

The ONS Output Geography Consultation from December 2009 to March 2010 asked users of statistical geographies to submit any cases where they felt areas were not socially homogeneous, and thus was of little or no statistical use. An independent panel deliberated these cases and OAs were redesigned to improve their social homogeneity prior to the release of 2011 Census populations. In Wales, Powys was the only local authority that had changes made to their OAs to improve their social homogeneity. A total of eight 2001 LSOAs were affected due to such changes.



## **To align with changed local authority boundaries**

The ONS policy was that 2011 OAs and SOAs should not be split across the local authority boundaries. This is to prevent two different local authorities being responsible for populations in different parts of the same SOA. Output areas were realigned to local authority boundaries where these have changed since the 2001 OAs were created. In Wales, three local authorities (Powys, Neath Port Talbot and Merthyr Tydfil) were affected by boundary changes.

Overall in Wales, only 2.2 percent of the 2001 SOAs have been altered following modifications made from the 2011 Census.

A detailed explanation of the changes that have taken place in Wales LSOAs and MSOAs is shown in section 4.2.

### **4.1 Statistical geography tables 'exact fit' versus 'best fit'**

When the ONS created the 2001-based statistical geographies, one of the criteria was that they should relate to administrative geographies. Therefore LSOAs nested within electoral divisions and both LSOAs and MSOAs nested within local authority boundaries. This enabled the ONS to produce exact fit statistics for both electoral divisions and statistical geographies.

Since the 2011 Census, and following a consultation there is no longer a requirement for LSOAs to nest within electoral divisions. Therefore, as a number of administrative geographies change and the need to keep statistical geography changes to a minimum have come to the fore, certain discrepancies have become apparent between them. To enable the ONS to release data at all levels without being able to derive identifiable data, they have developed best fit and exact fit.

The ONS have published 2011 Output Areas, LSOAs and MSOAs on an exact fit basis; exact fit boundaries are precisely generated to match the population at all levels. Output Areas, LSOAs and MSOAs all nest within local authorities as these are considered the building block geographies.

Output Areas have been designed specifically by the ONS as the smallest area for which census statistics can be released without being disclosive and so data will be released as exact fit. These building blocks in which SOAs are derived, nest within the higher level. In each OA in England and Wales there are at least 100 residents and 40 households.

Where a geography, e.g. electoral divisions, cut across certain OAs, the ONS have developed 'best fit' policy to release data. This enables the ONS to produce outputs at that level without the issue of disclosure, derived from the disparity between the two geographies.

## 4.2 Modifications to Lower Super Output Areas in Wales as a result of the 2011 Census

Since the 2011 Census, LSOAs have been reconfigured and there are now 1909 LSOAs in Wales. This is an increase of 13 LSOAs compared to those derived from Census 2001. Overall 1,847 (97.4%) LSOAs in Wales have remained unchanged. Twenty (1.1%) LSOAs have been merged, 17 (0.9%) have split and complex changes have occurred in 12 LSOAs. There have been no modifications made to the LSOA boundaries in the following local authorities and therefore in these local authorities direct comparisons can be made between 2001 and 2011 LSOAs:

- The Isle of Anglesey;
- Denbighshire;
- Flintshire;
- Pembrokeshire;
- Caerphilly;
- Blaenau Gwent; and
- Torfaen.

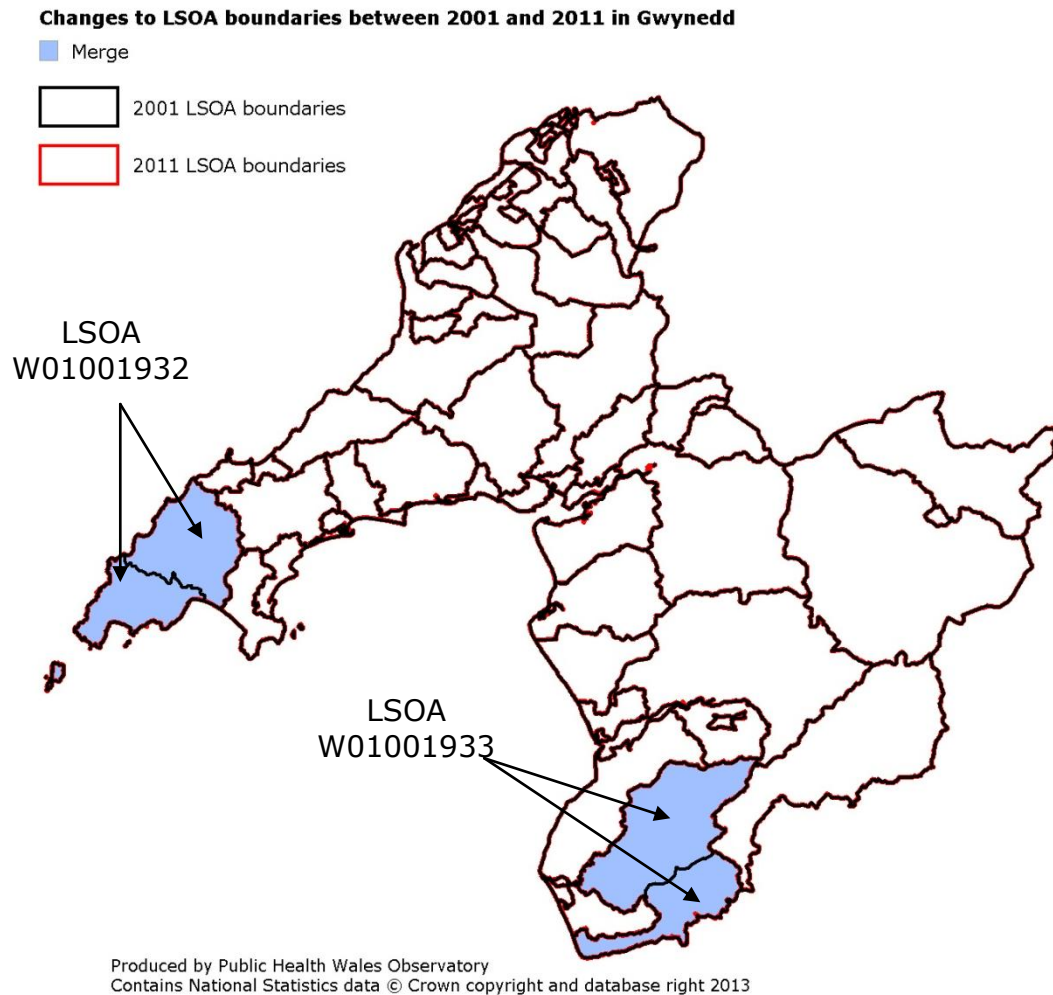
Detailed explanations of the modifications made to LSOAs in the following local authorities are illustrated below:

- Gwynedd;
- Conwy;
- Wrexham;
- Powys;
- Ceredigion;
- Carmarthenshire;
- Swansea;
- Neath Port Talbot;
- Bridgend;
- The Vale of Glamorgan;
- Cardiff;
- Rhondda Cynon Taf;
- Merthyr Tydfil;
- Monmouthshire; and
- Newport.

The percentage of LSOAs that were modified in each local authority are also included.

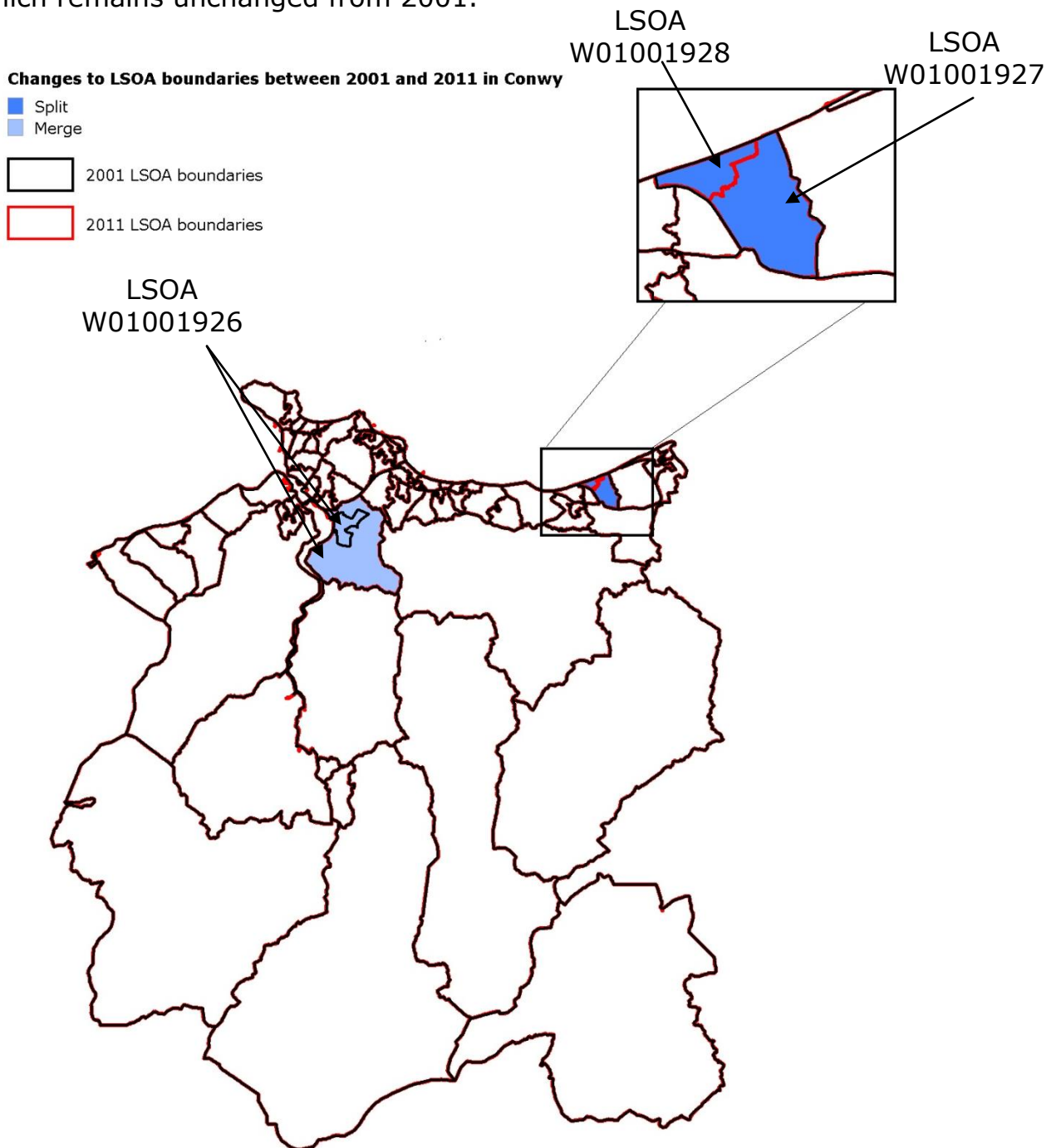
### 4.2.1 Gwynedd

There have been four (5.3%) modifications made to LSOAs in Gwynedd. Merges have taken place in two separate LSOAs and these merges are illustrated in the light blue colour on the map. The LSOAs coded as 'W01000045' and 'W01000055' have merged to become LSOA 'W01001932'. The LSOAs coded 'W01000058' and 'W01000046' have merged to become 'W01001933'. There are now 73 LSOAs in Gwynedd, compared to 75 in 2001.



### 4.2.2 Conwy

There have been three modifications (4.2%) made to LSOAs in Conwy. The LSOA 'W01000120' has split into two separate LSOAs in 2011 and are now coded as 'W01001927' and 'W01001928'. This is illustrated on the map by the dark blue colour. The following two LSOAs 'W01000160' and 'W01000161' have merged to become 'W01001926'. Merges are illustrated by the light blue colour on the map. There are a total of 71 LSOAs in Conwy which remains unchanged from 2001.



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### 4.2.3 Wrexham

There have been three modifications (3.5%) made to LSOAs in Wrexham, however the total number of LSOAs remain unchanged at 85. The map illustrates that two LSOAs (W01000357, W01000358) have been merged (light blue) to one LSOA (W01001930).

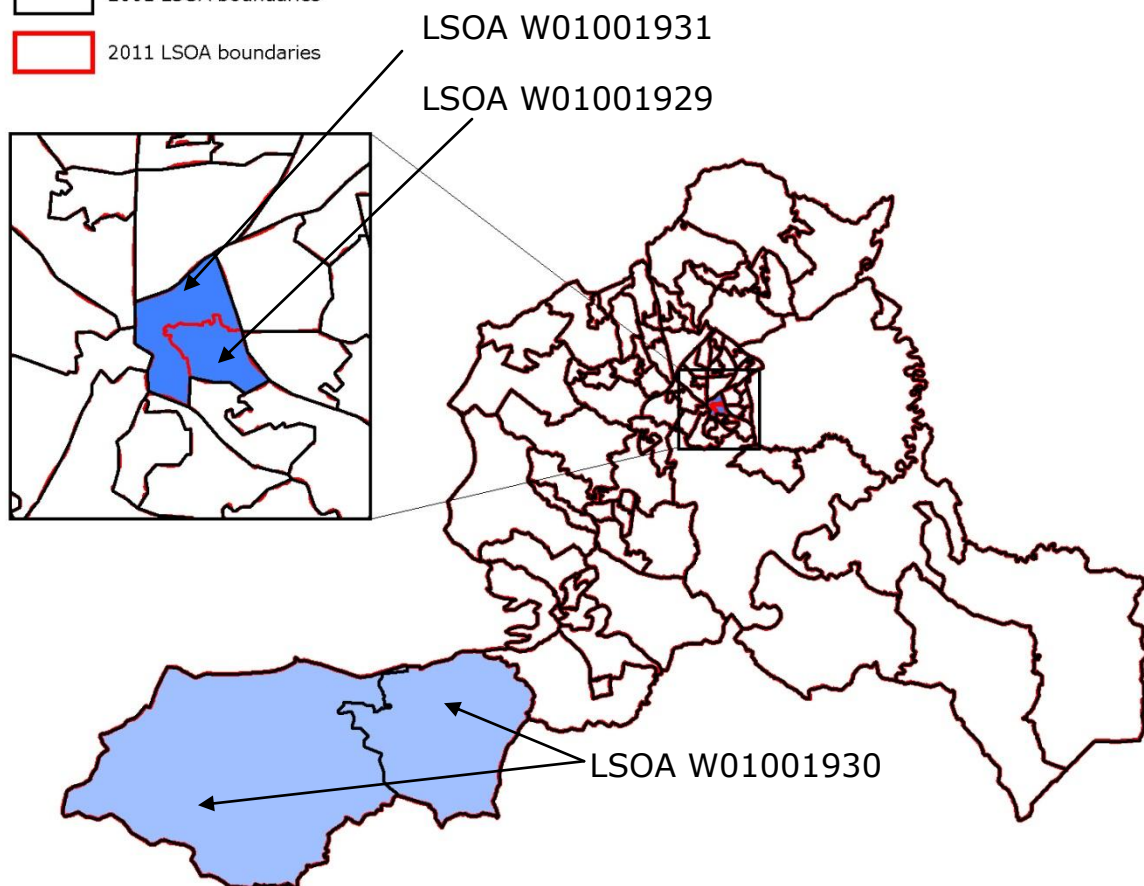
The 2001 LSOA 'W01000421' has been split into two separate LSOAs (W01001929, W01001931). This is illustrated in the map in the dark blue colour.

**Changes to LSOA boundaries between 2001 and 2011 in Wrexham**

- Split
- Merge

2001 LSOA boundaries

2011 LSOA boundaries



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#### 4.2.4 Powys

In Powys, there has been a decrease in LSOA boundaries from 80 in 2001 to 79 in 2011. In total there have been ten modifications (12.5%) made to LSOA boundaries in 2011. All changes that have occurred in Powys are coded as 'X' in the ONS look-up files which represents 'complex changes'. A complex change can be any combination of local authority boundary changes and/or change to improve their social homogeneity and/or standard ONS maintenance due to intercensal population change resulting in breached population thresholds (Bayliss J, personal communication email, Jan 14th 2013). The LSOA boundaries which have changed are highlighted in grey on the map along with their new LSOA code.

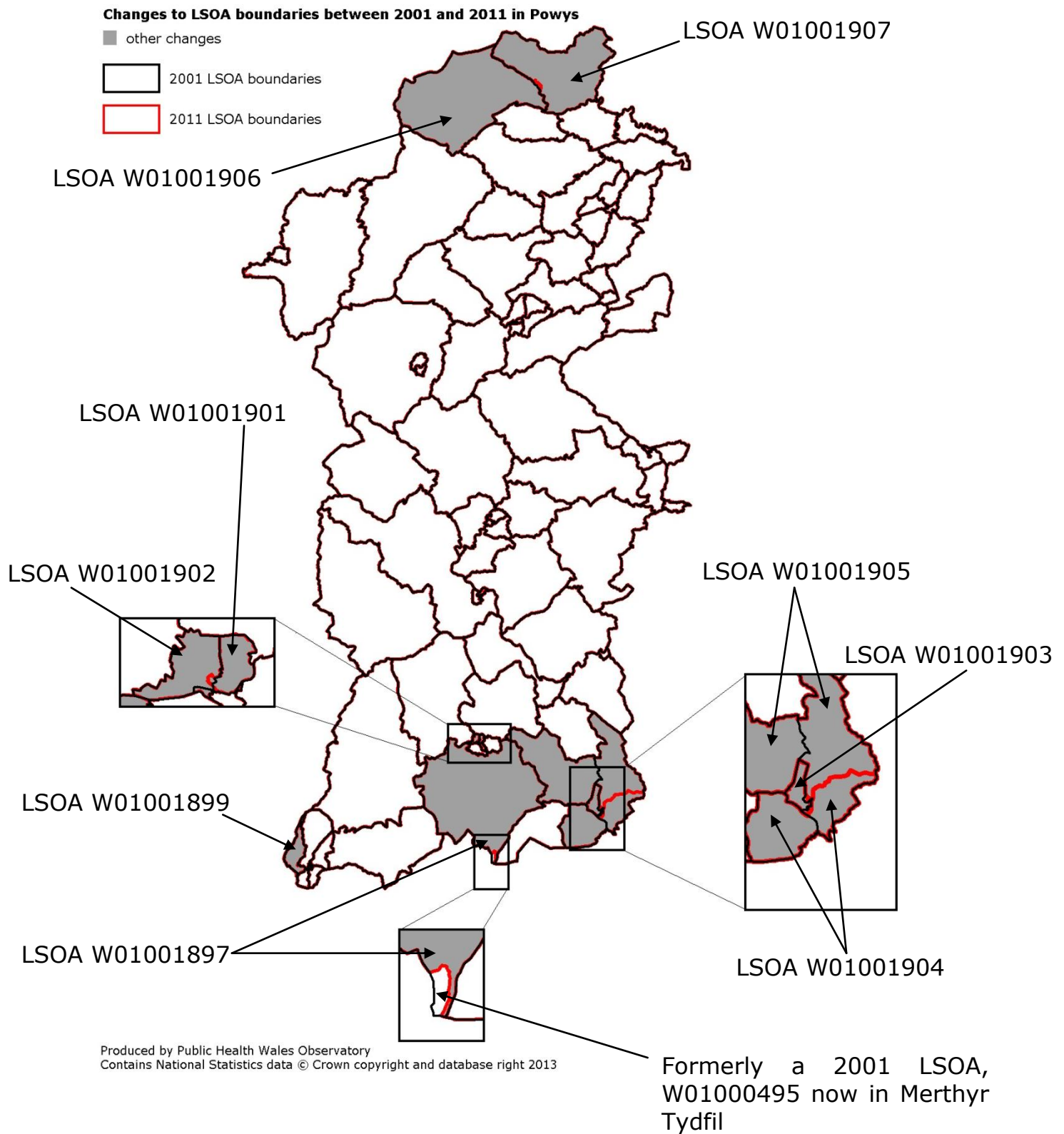
Two 2001 LSOAs have changed to align with changed local authority boundaries:

- The 2001 LSOA 'W01000437' (now 2011 LSOA Powys 'W01001899') and the 2001 LSOA 'W01000972' (now 2011 LSOA Neath Port Talbot 'W01001900' and 2011 LSOA Powys 'W01001899' respectively) changed due to The Neath Port Talbot and Powys (Cwmtwrch) Order 2004 - operative 01/04/2005.
- The 2001 LSOA 'W01000495' (now 2011 LSOA Powys 'W01001897' and 2011 LSOA Merthyr Tydfil 'W01001898' respectively) and the 2001 LSOA 'W01001323' (now 2011 LSOA Merthyr Tydfil 'W01001898') changed due to the Merthyr Tydfil and Powys (Areas) Order 2009 - operative 01/06/2009.

The 2001 LSOA 'W01000436' has been split and includes LSOAs 'W01001905', 'W01001904' and 'W01001903'. This split has occurred to improve social homogeneity in the OAs. Further changes that have been applied to Powys LSOAs to improve their social homogeneity are illustrated in the table 2:

**Table 1: Changes due to social homogeneity**

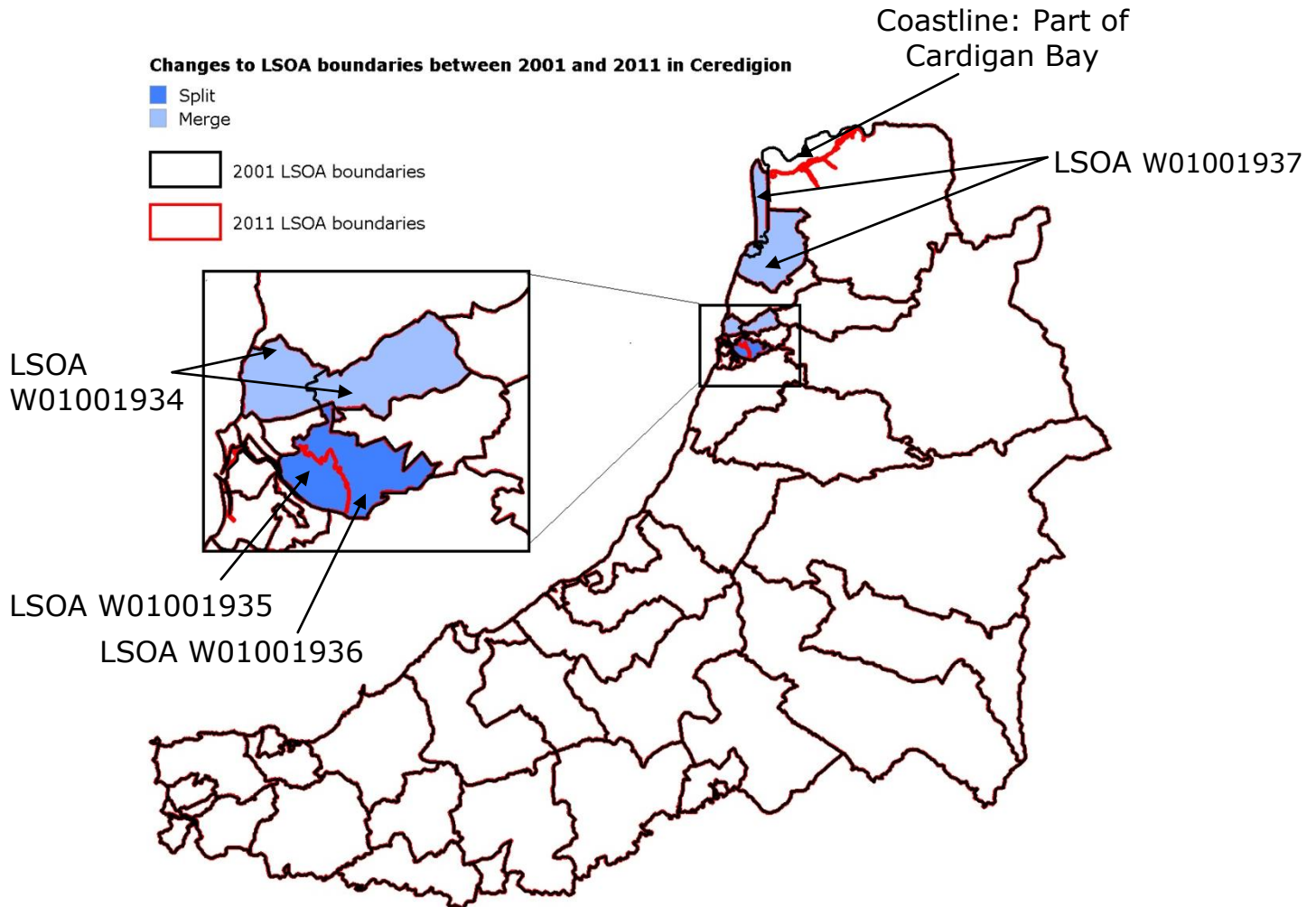
<b>2001 LSOA Code</b>	<b>2011 LSOA Code</b>
W01000435	W01001903
W01000436	W01001903
W01000436	W01001905
W01000436	W01001904
W01000462	W01001904
W01000463	W01001905
W01000468	W01001906
W01000469	W01001906
W01000469	W01001907
W01000490	W01001901
W01000490	W01001902
W01000491	W01001901
W01000491	W01001902





#### 4.2.5 Ceredigion

In Ceredigion, there have been five modifications (10.6%) made to LSOAs. The LSOA 'W01000530' has split into two separate LSOAs 'W01001935' and 'W01001936'. 'W01000520' and 'W01000521' have been merged into LSOA 'W01001937'. The LSOAs coded 'W01000526' and 'W01000514' have been merged to become LSOA 'W01001934'. There are now 46 LSOAs compared to 47 in 2001.



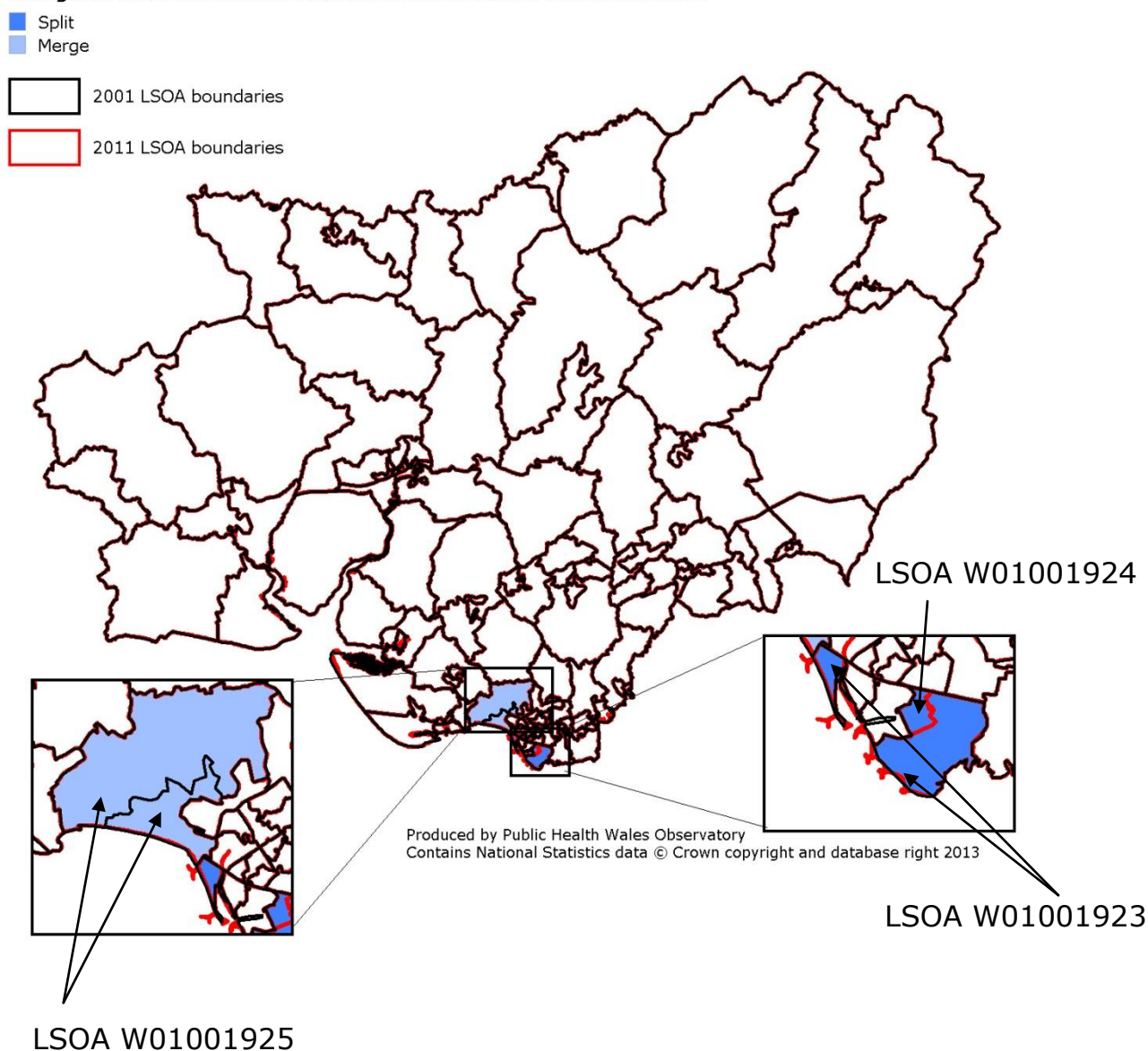
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#### 4.2.6 Carmarthenshire

In Carmarthenshire, there have been three modifications (2.7%) made to LSOAs. The LSOA 'W01000661' has been split to become two separate LSOAs 'W01001923' and 'W01001924'. The split is illustrated by the dark blue colour on the map. The LSOAs coded 'W01000668' and 'W01000669' have merged to become 'W01001925'. The merge is illustrated by the light blue colour on the map. There are 112 LSOAs in Carmarthenshire in 2011 which is the same number as 2001.

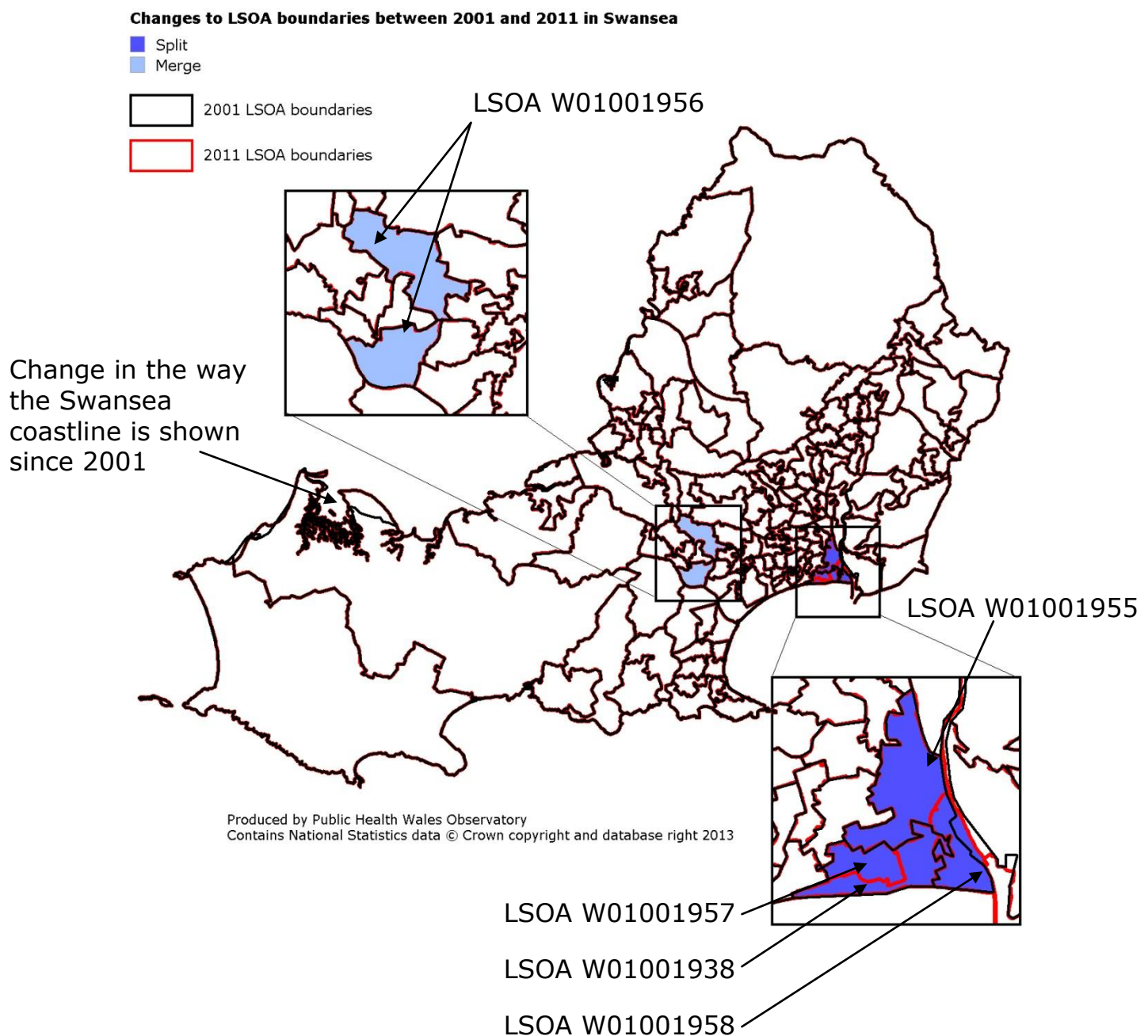
**Changes to LSOA boundaries between 2001 and 2011 in Carmarthenshire**



#### 4.2.7 Swansea

There have been four modifications (2.7%) made to LSOAs in Swansea since 2001. The LSOA coded 'W01000743' has been split into two LSOAs 'W01001955' and 'W01001958'. The LSOA coded 'W01000748' has split into the LSOAs 'W01001938' and 'W01001957'. Splits are illustrated by the dark blue colours on the map.

The LSOAs 'W01000780' and 'W01000783' have merged to become 'W01001956' and are illustrated by the light blue colour on the map. There are now 148 LSOAs in Swansea compared to 147 in 2001.



#### 4.2.8 Neath Port Talbot

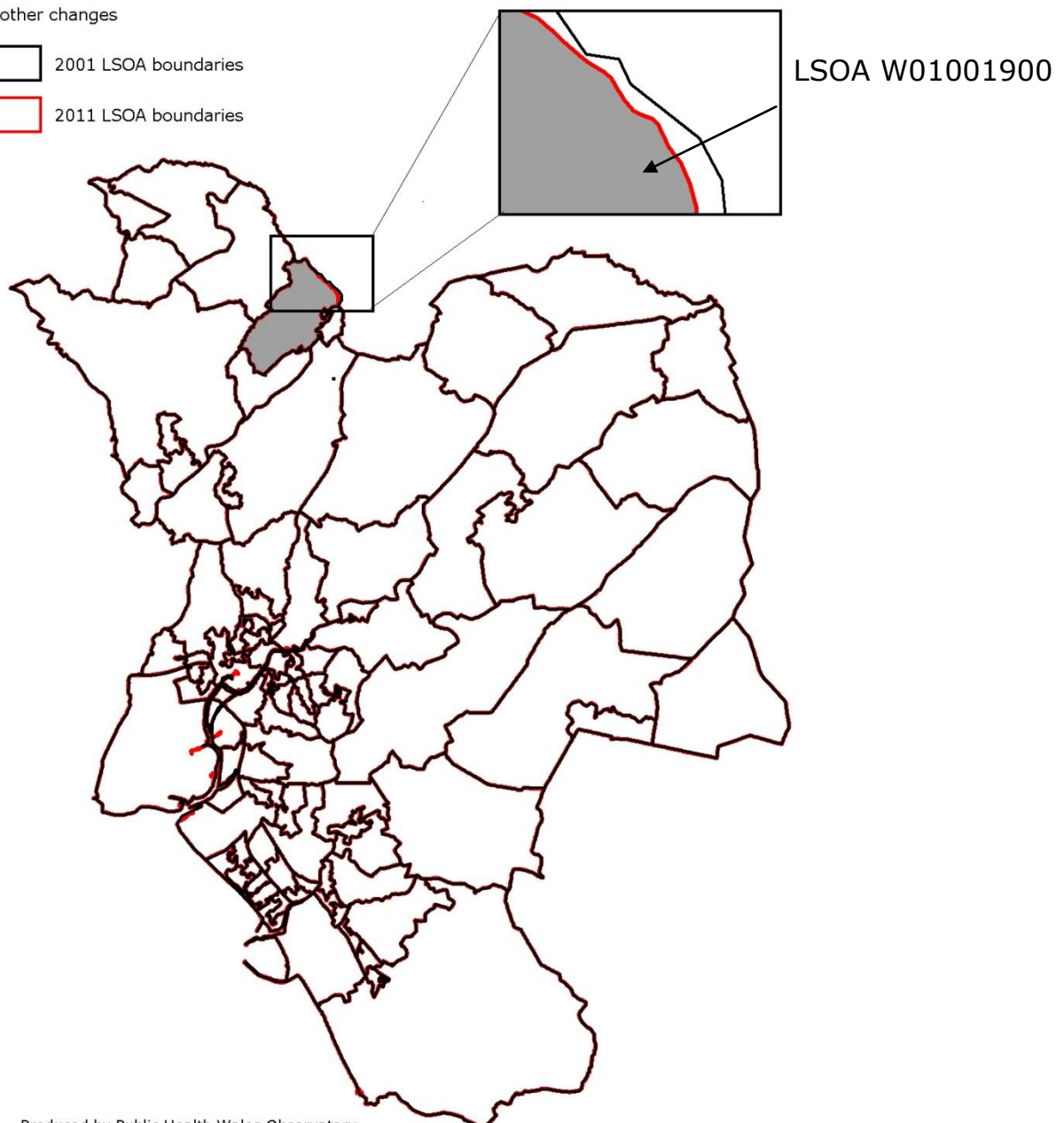
One modification (1.1%) has taken place to an LSOA boundary in Neath Port Talbot. The 2001 LSOA 'W01000972' boundary has slightly changed and is now coded as 'W01001900'. This modification is highlighted by the grey colour on the map. This LSOA has been realigned with changes in local authority boundaries. This local authority change changed in accordance with the Neath Port Talbot and Powys (Cwmtwrch) Order 2004 – operative 01/04/2005. The number of LSOAs remains unchanged at 91.

##### Changes to LSOA boundaries between 2001 and 2011 in Neath Port Talbot

■ other changes

□ 2001 LSOA boundaries

□ 2011 LSOA boundaries



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## 4.2.9 Bridgend

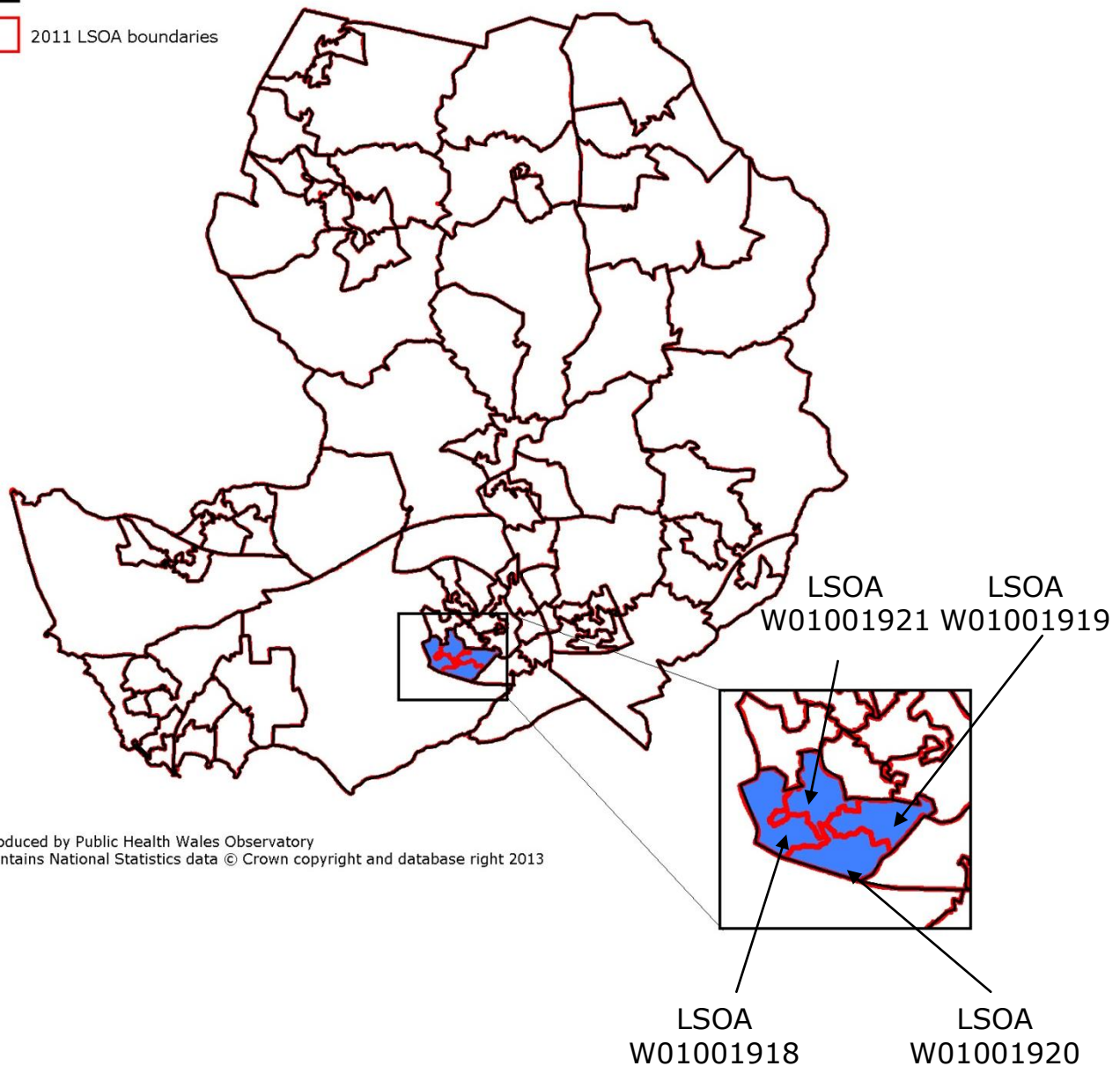
One modification (1.2%) has taken place to LSOAs in Bridgend. The LSOA coded 'W01000988' has been split into four separate LSOAs. The new LSOAs (dark blue) are highlighted in the map below. There are now 88 LSOAs in Bridgend compared to 85 in 2001.

### Changes to LSOA boundaries between 2001 and 2011 in Bridgend

■ Split

□ 2001 LSOA boundaries

□ 2011 LSOA boundaries

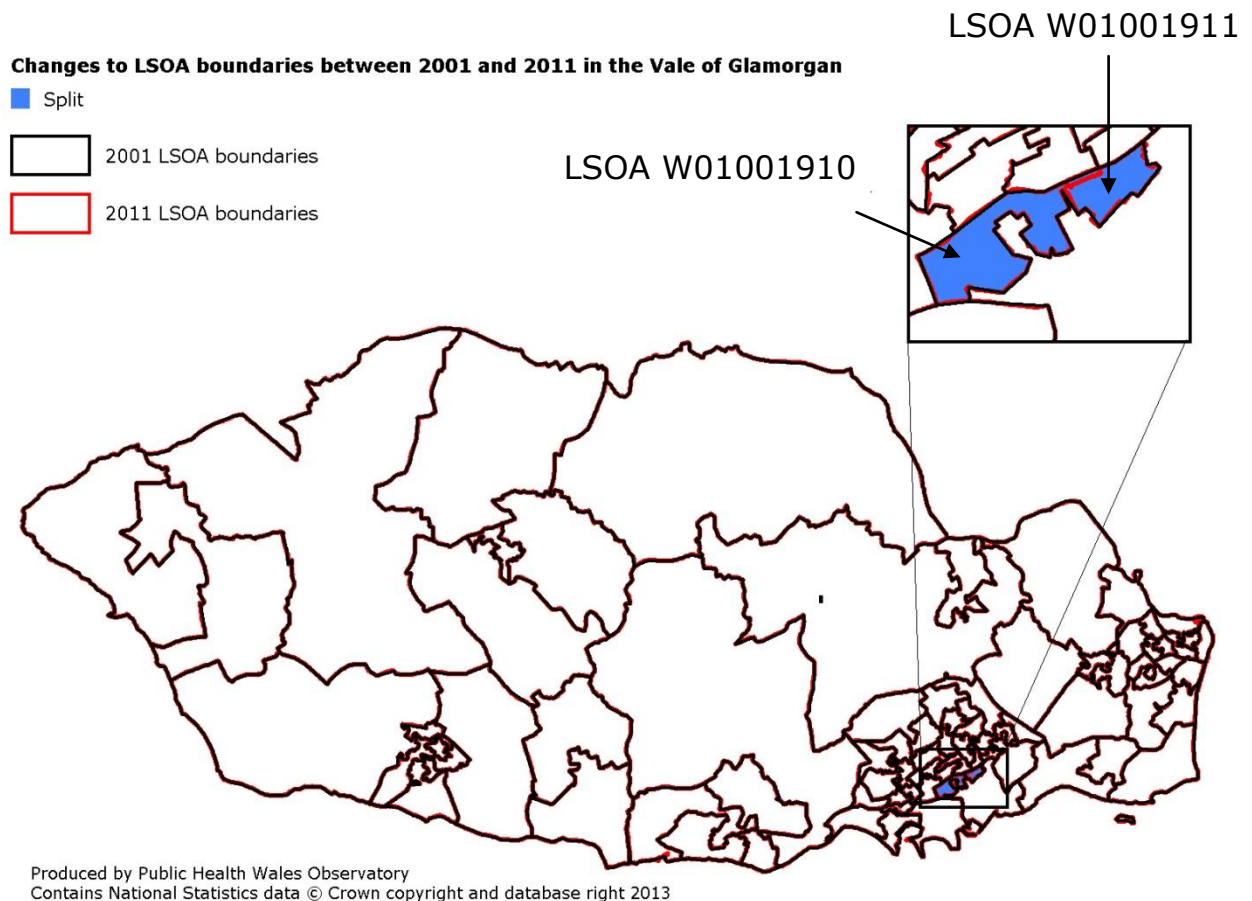


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#### 4.2.10 The Vale of Glamorgan

There has been one modification (1.3%) made to LSOAs in the Vale of Glamorgan. The LSOA 'W01001074' has been split into two separate LSOAs as highlighted in the map below in the dark blue colour. There are now 79 LSOAs in the Vale of Glamorgan compared to 78 in 2001.



#### **4.2.11 Cardiff**

In Cardiff, a total of six modifications (3%) have taken place to LSOAs and all modifications are due to splits in LSOAs.

The LSOA coded 'W01001700' has been split into the following three LSOAs 'W01001942', 'W01001950' and 'W01001952'.

The LSOA coded 'W01001701' has been split into the following four LSOAs: 'W01001940', 'W01001943', 'W01001944' and 'W01001951'.

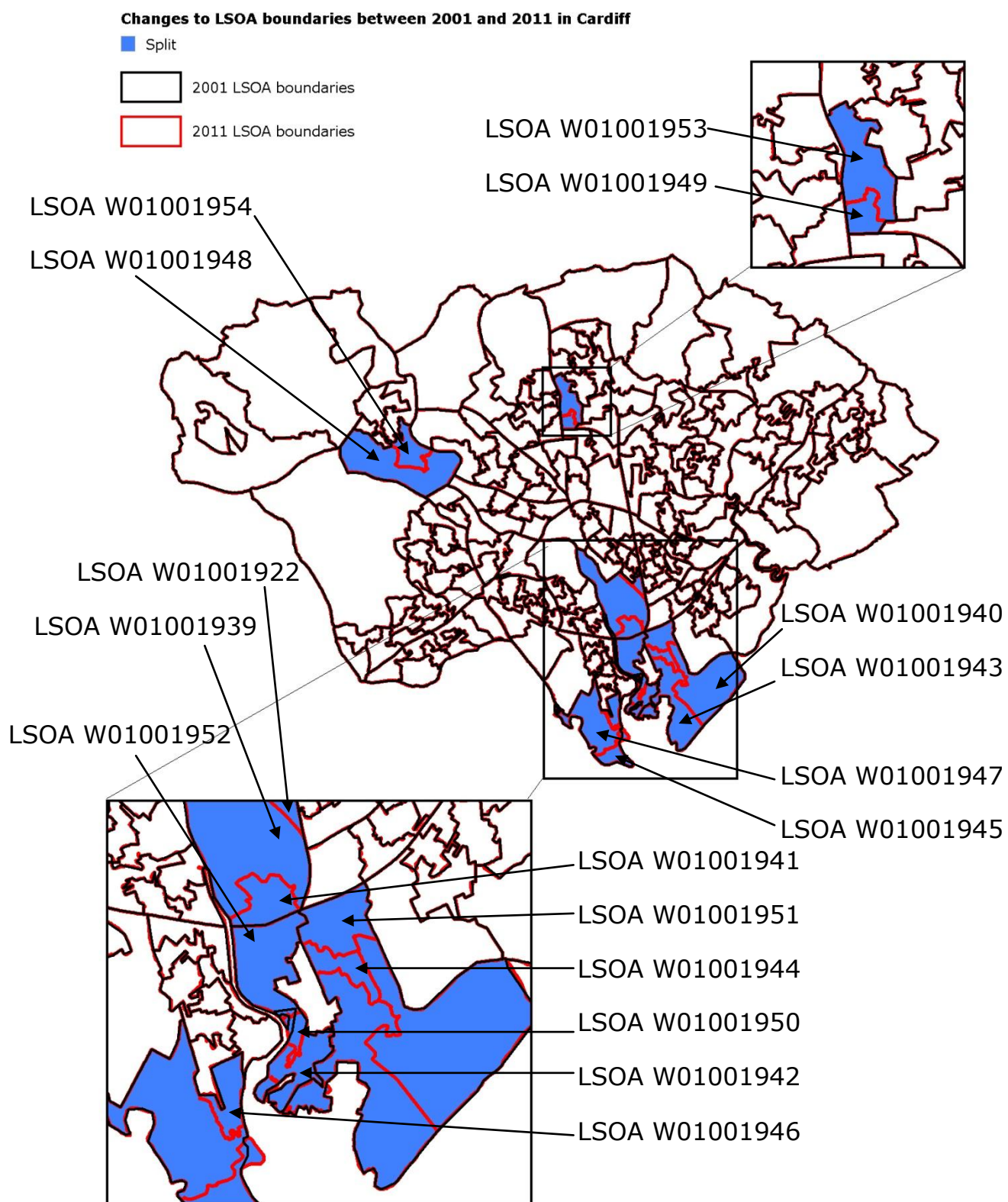
The LSOA coded 'W01001723' has been split into the following three LSOAs: 'W01001922', 'W01001939', and 'W01001941'.

The LSOA coded 'W01001763' has been split into the following three LSOAs: 'W01001945', 'W01001946', and 'W01001947'.

The LSOA coded 'W01001801' has been split into the following LSOAs: 'W01001949' and 'W01001953'.

The LSOA coded 'W01001845' has been split into the following LSOAs: 'W01001948' and 'W01001954'.

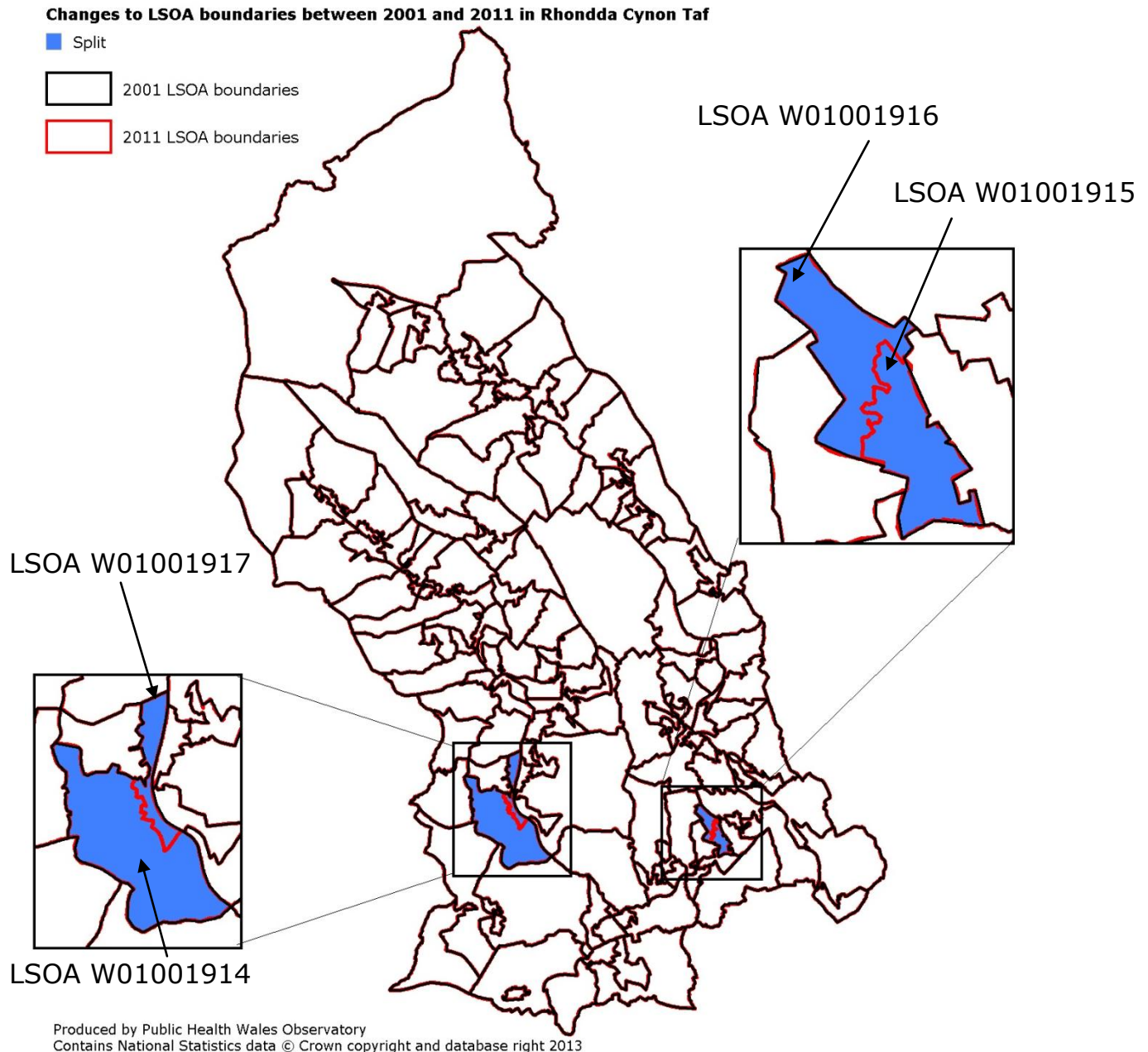
There are now 214 LSOAs in Cardiff compared to 203 in 2001.



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#### 4.2.12 Rhondda Cynon Taf

Two modifications (1.3%) have taken place to LSOAs in Rhondda Cynon Taf. Two LSOAs have been split and are highlighted by the dark blue colour on the map. The LSOA coded 'W01001163' has split into 'W01001915' and 'W01001916'. The LSOA 'W01001254' has split into 'W01001914' and 'W01001917'. There are now 154 LSOAs in Rhondda Cynon Taf compared to 152 in 2001.





### 4.2.13 Merthyr Tydfil

There has been one change (2.8%) made to an LSOA boundary in Merthyr Tydfil. The 2001 LSOAs coded 'W01001323' (Merthyr Tydfil) and 'W01000436' (formally 2001 LSOA Powys) has now been changed to 'W01001898'. This LSOA has been realigned with changes made in local authority boundaries. This local authority change changed in accordance with the Merthyr Tydfil and Powys (Area) Order 2009- operative 01/06/2009.

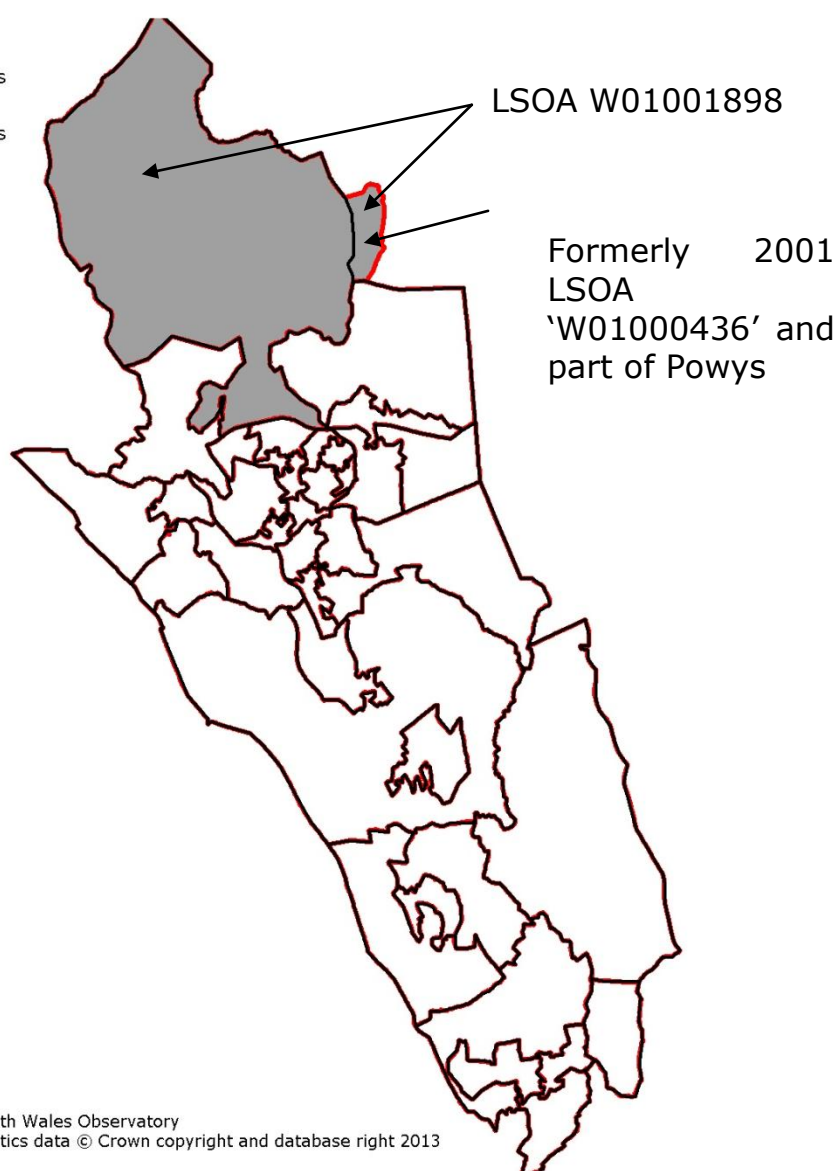
The number of LSOAs in Merthyr Tydfil remains unchanged at 36.

#### Changes to LSOA boundaries between 2001 and 2011 in Merthyr Tydfil

■ other changes

□ 2001 LSOA boundaries

□ 2011 LSOA boundaries

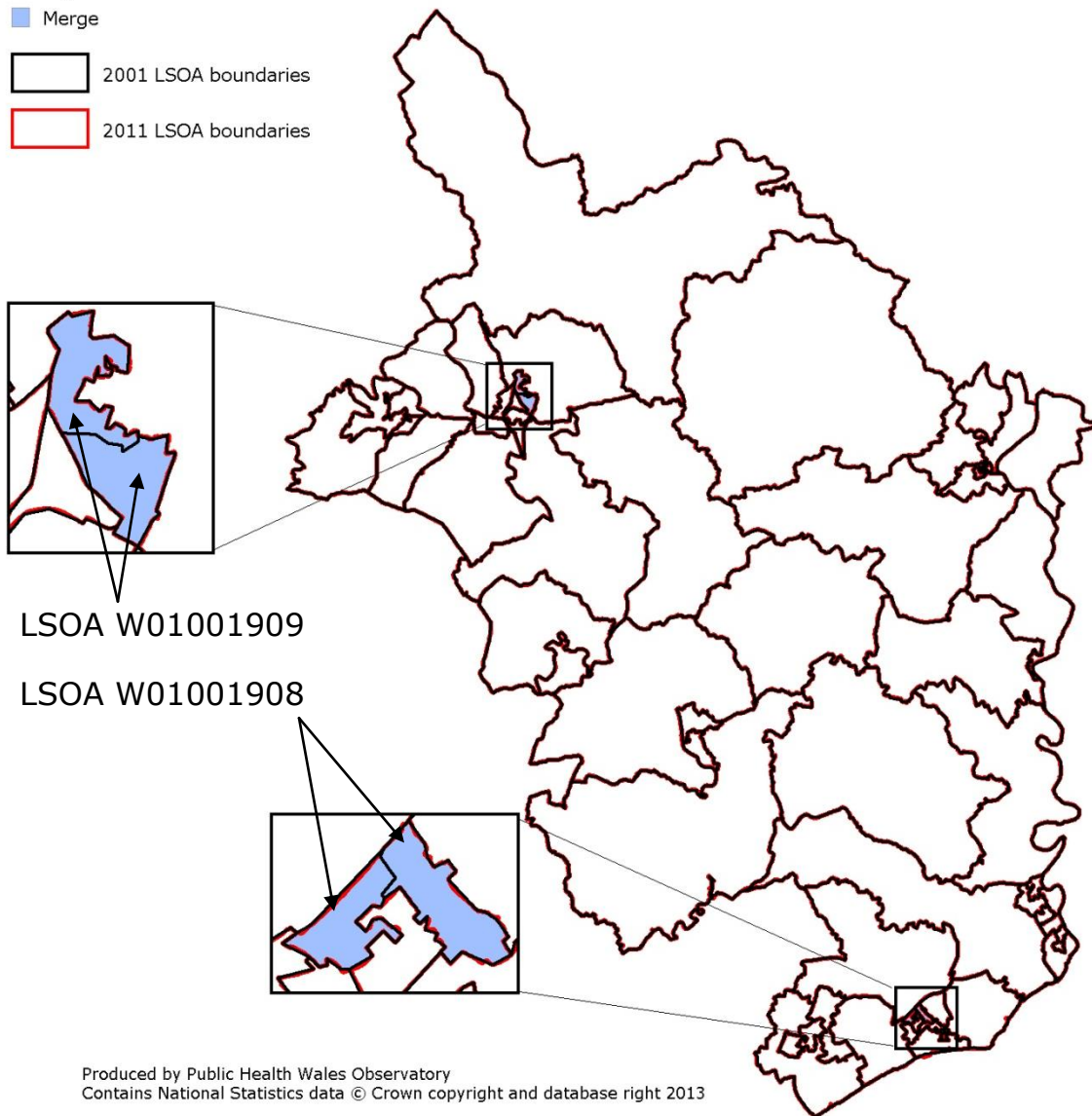


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#### 4.2.14 Monmouthshire

Four modifications (6.9%) have taken place to LSOAs in Monmouthshire. Two LSOAs coded 'W01001544' and 'W01001550' have merged to become LSOA 'W01001908'. The LSOAs coded 'W01001547' and 'W01001570' have merged to become LSOA 'W01001909'. Merges are illustrated by the light blue colours on the map. There are now 56 LSOAs in Monmouthshire compared to 58 in 2001.

**Changes to LSOA boundaries between 2001 and 2011 in Monmouthshire**



#### 4.2.15 Newport

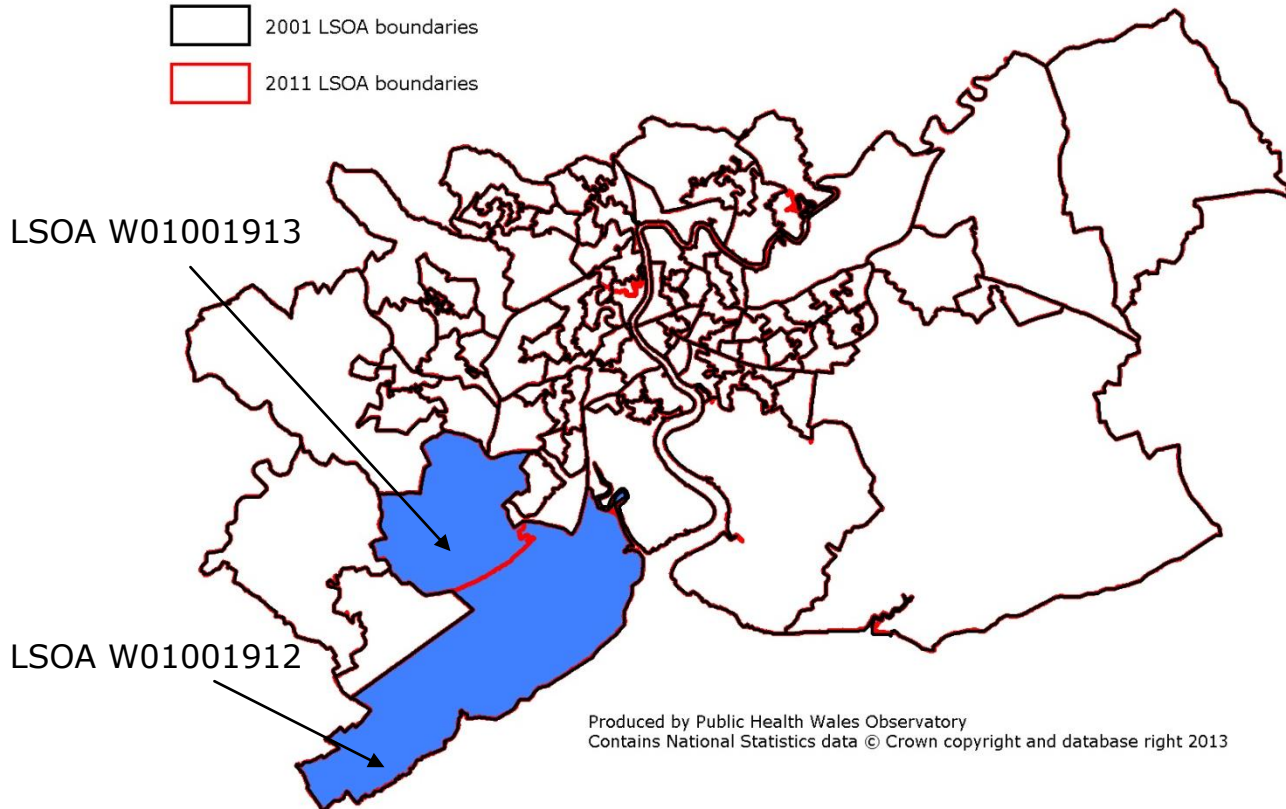
There has been one modification (1.1%) made to LSOAs in Newport. The LSOA coded 'W01001656' has been split into 'W01001912' and 'W01001913'. The splits are illustrated by the dark blue colour on the map. There are now 95 LSOAs in Newport compared to 94 in 2001.

##### Changes to LSOA boundaries between 2001 and 2011 in Newport

■ Split

□ 2001 LSOA boundaries

□ 2011 LSOA boundaries



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### 4.3 Modifications to Middle Super Output Areas in Wales as a result of Census 2011

Since Census 2011, MSOAs have been reconfigured. There are now 410 MSOAs in Wales compared to 413 in 2001.

Overall 400 (96.9%) MSOAs in Wales have remained unchanged. Eight (1.9%) MSOAs have merged, one has split (0.2%) and complex changes have occurred in four MSOAs. There have been no modifications made to the MSOA boundaries in the following local authorities:

There have been no changes to the MSOA boundaries in the following local authorities.

- The Isle of Anglesey;
- Gwynedd;
- Flintshire;
- Conwy;
- Pembrokeshire;
- Swansea;
- Bridgend;
- The Vale of Glamorgan;
- Rhondda Cynon Taf;
- Caerphilly;
- Blaenau Gwent;
- Torfaen;
- Monmouthshire; and
- Newport.

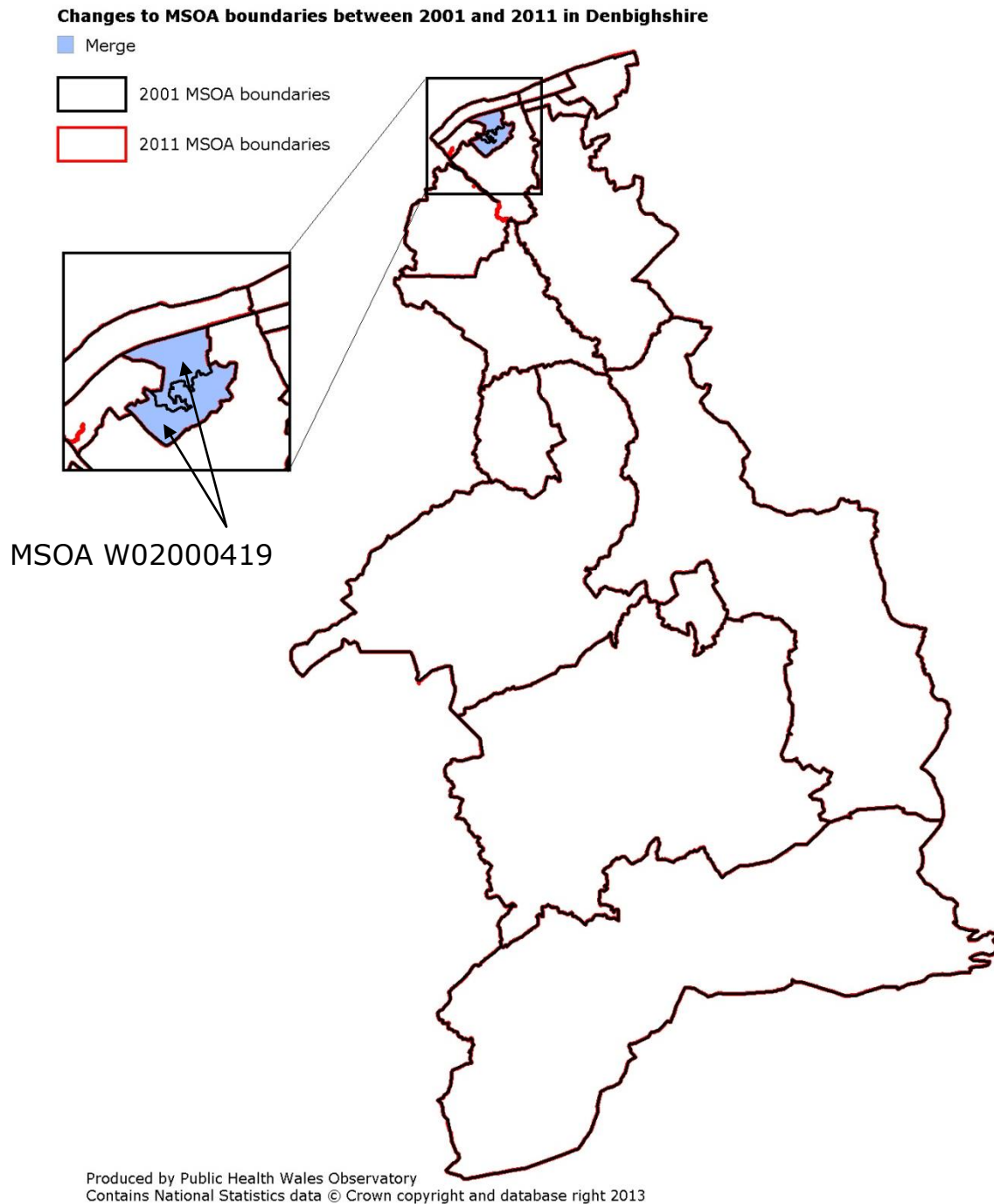
Detailed explanations of the changes made to MSOAs in the following local authorities are illustrated below:

- Denbighshire;
- Wrexham;
- Powys;
- Ceredigion;
- Carmarthenshire;
- Neath Port Talbot;
- Cardiff; and
- Merthyr Tydfil.

The percentage change in each MSOA is also included.

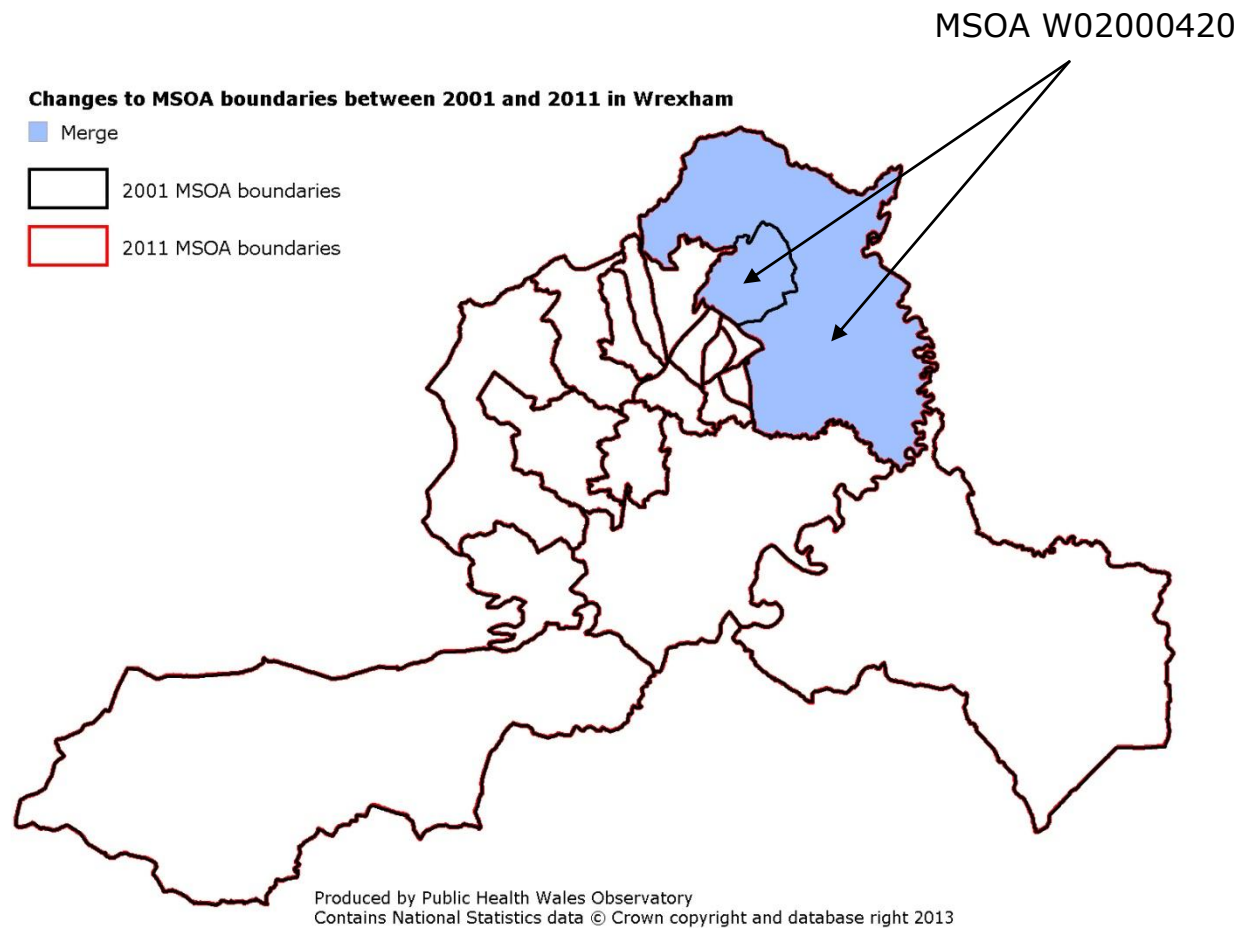
### 4.3.1 Denbighshire

There have been two modifications (12.5%) made to MSOAs in Denbighshire. Two MSOAs 'W02000048' and 'W02000046' have been merged to form one MSOA 'W02000419'. The merge is illustrated by the light blue colour on the map. There are now 15 MSOAs in Denbighshire compared to 16 in 2001.



### 4.3.2 Wrexham

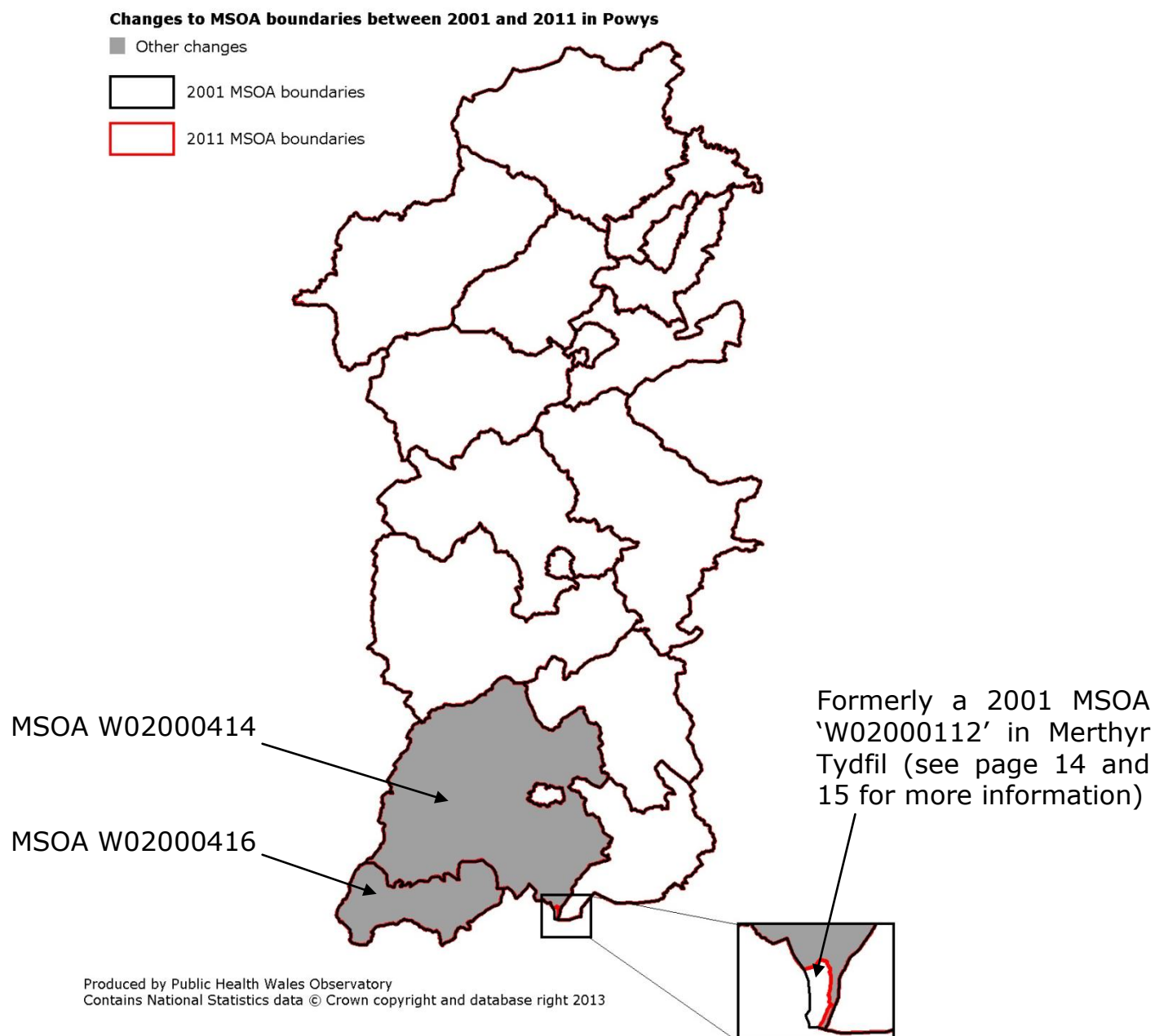
There have been two modifications (10.5%) made to MSOAs in Wrexham. Two MSOAs, 'W02000078' and 'W02000079' have been merged to form one MSOA 'W02000420'. This merge is illustrated by the light blue colour on the map. There are now 18 MSOAs in Wrexham compared to 19 in 2001.





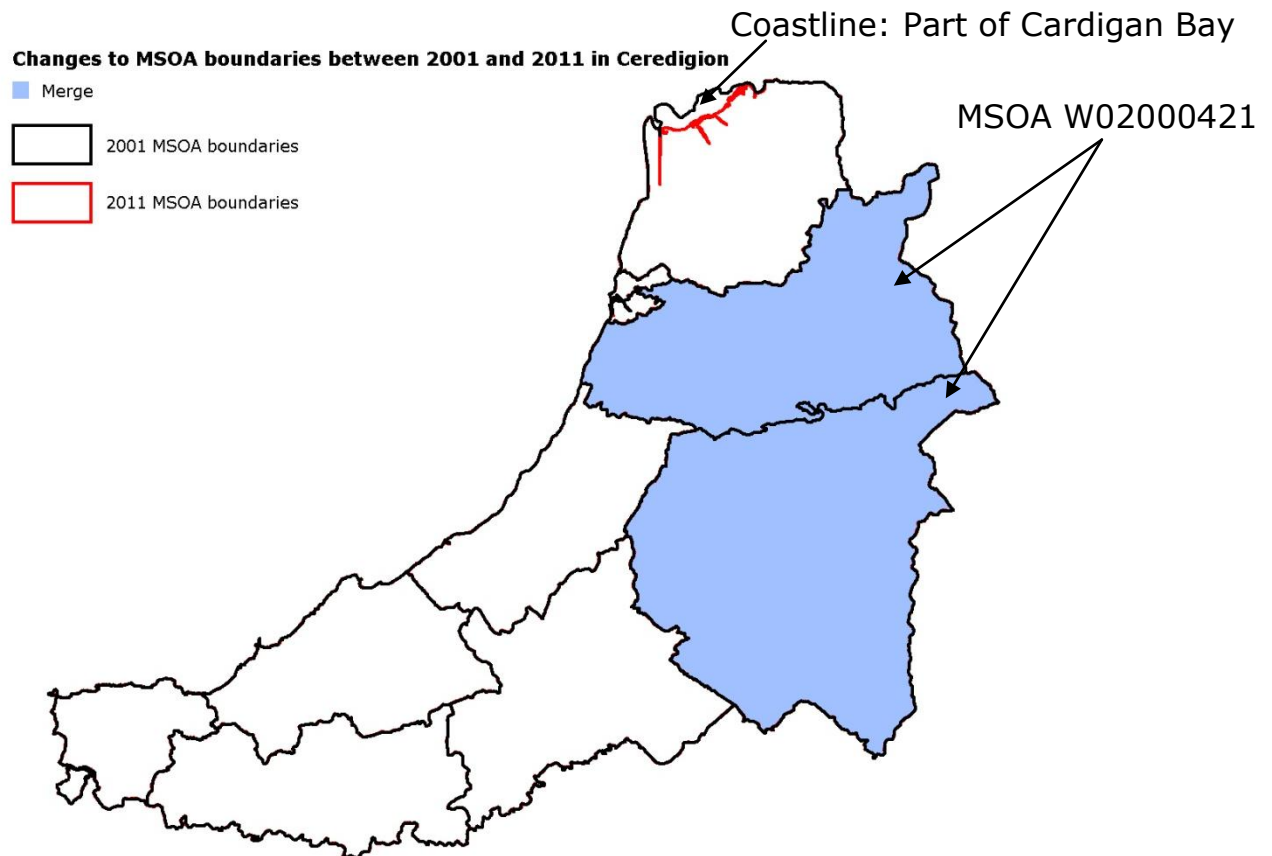
### 4.3.3 Powys

There have been two modifications (10.5%) made to MSOAs in Powys. The boundary in MSOA 'W02000112' is now coded as 'W02000414' and the boundary in MSOA 'W02000115' is now coded as 'W02000416'. These slight changes are illustrated in the grey colour on the map. The number of MSOA boundaries in Powys in 2011 remains unchanged at 19 MSOAs. Further details on changes resulting from local authority boundary shift can be found on page 14 and 15.



#### 4.3.4 Ceredigion

There have been two modifications (20%) made to MSOAs in Ceredigion. Middle Super Output Areas 'W02000119' and 'W02000121' have merged to form one MSOA 'W02000421'. Merges are illustrated by the light blue colour on the map. There are now nine MSOAs in Ceredigion compared to 10 in 2001.

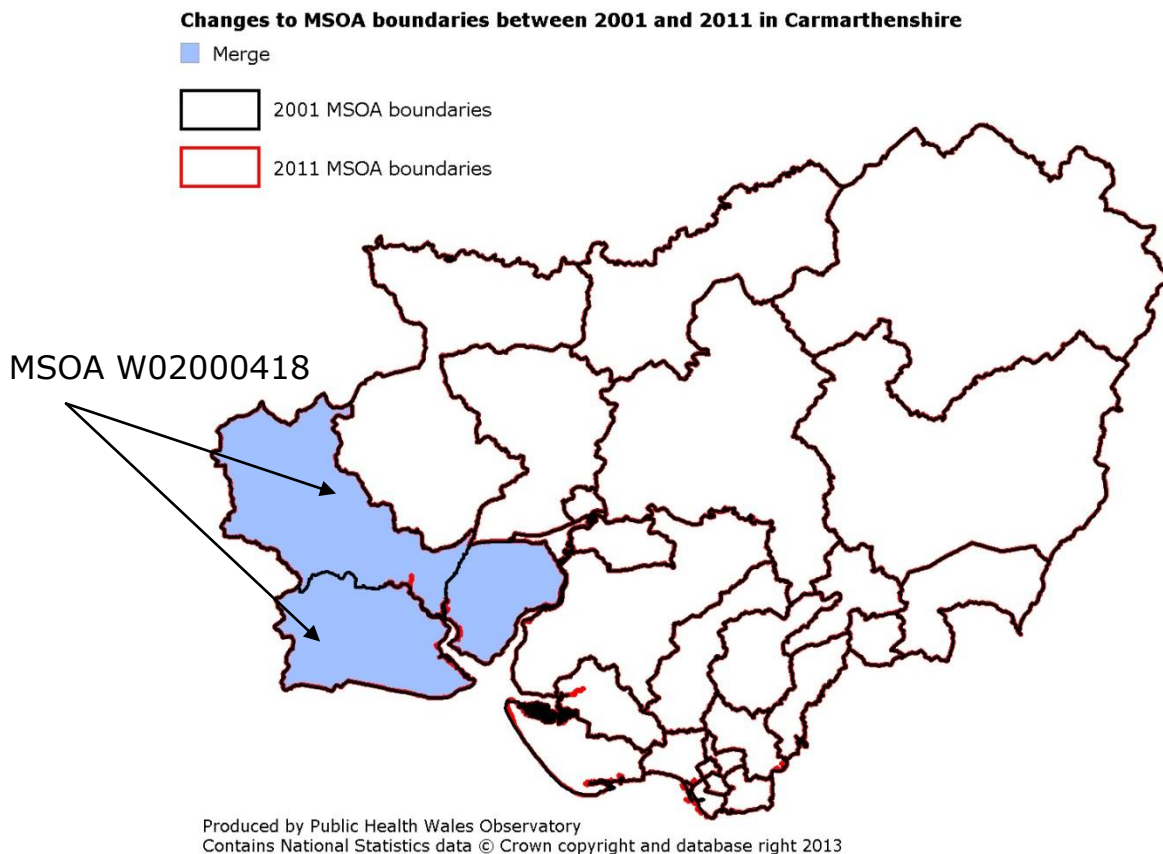


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### 4.3.5 Carmarthenshire

There have been two modifications (7.7%) made to MSOAs in Carmarthenshire. Two MSOAs, 'W02000150' and 'W02000155' have been merged to form one MSOA 'W02000418'. The merge is illustrated by the light blue colour on the map. There are now 25 MSOAs in Carmarthenshire compared to 26 in 2001.



### 4.3.6 Neath Port Talbot

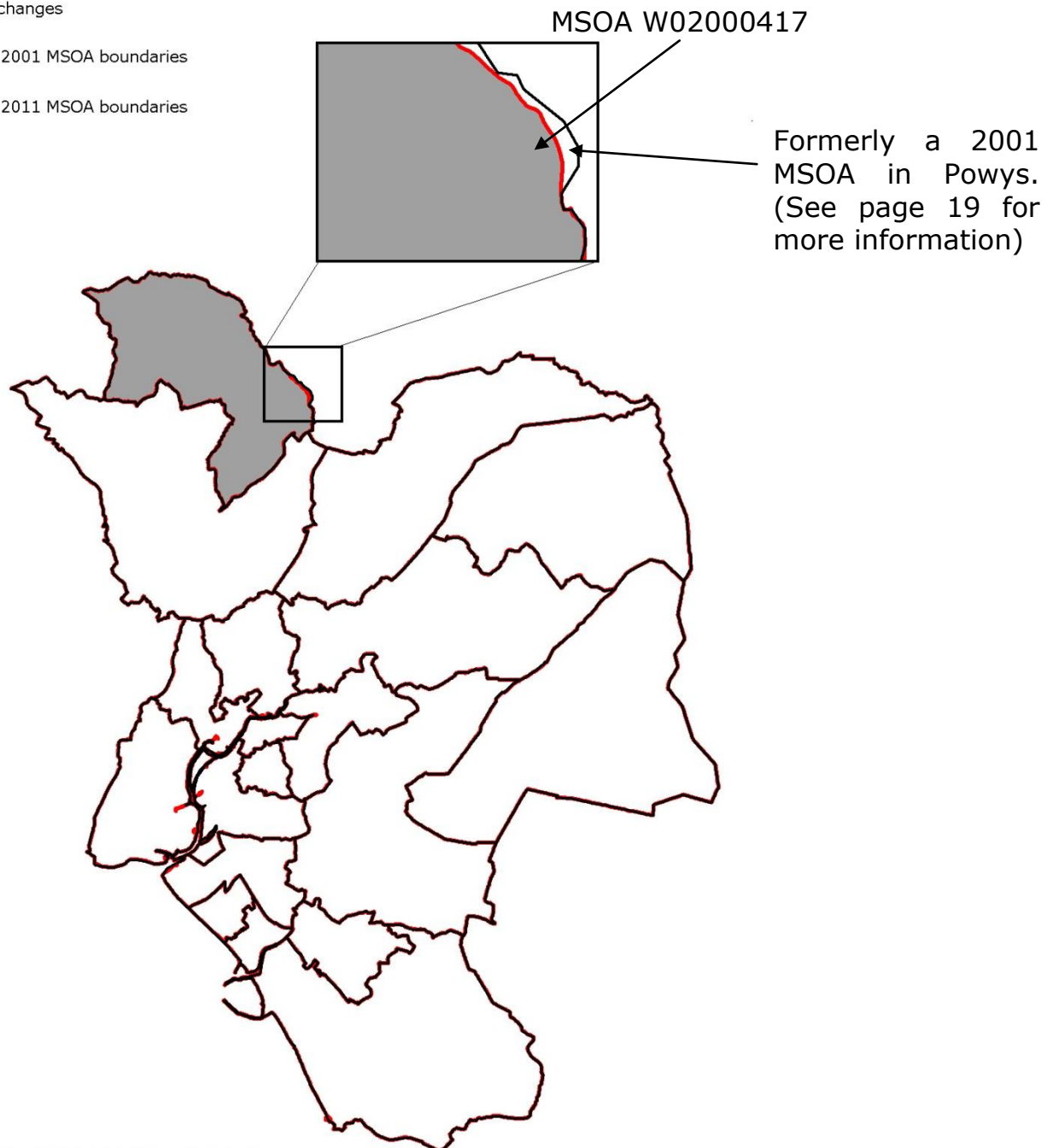
There has been one modification (5.3%) made to MSOA boundaries in Neath Port Talbot. The MSOA boundary coded as 'W02000199' has changed slightly and is now called 'W02000417'. There are 19 MSOA boundaries in Neath Port Talbot in 2011, which remains unchanged since 2001. Further details on changes resulting from local authority boundary shift can be found on page 19.

#### Changes to MSOA boundaries between 2001 and 2011 in Neath Port Talbot

■ Other changes

□ 2001 MSOA boundaries

□ 2011 MSOA boundaries

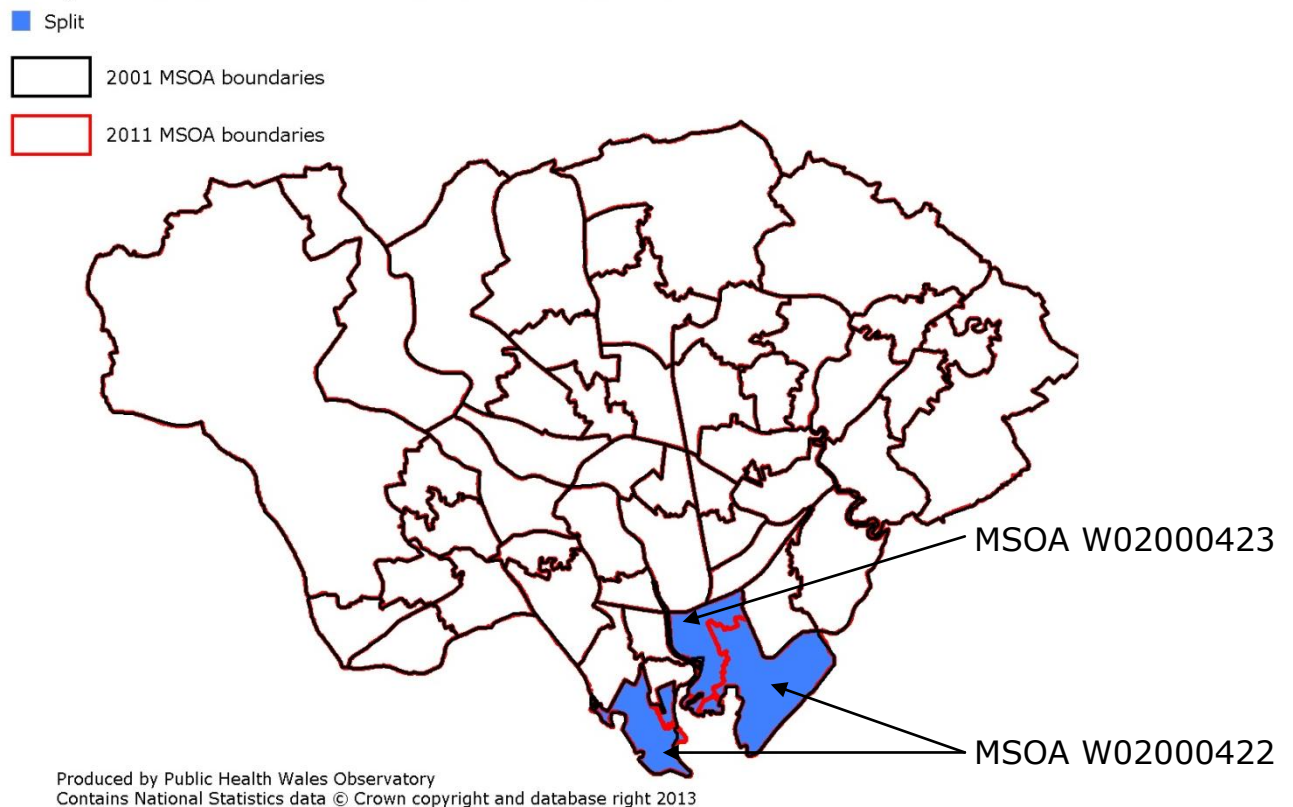


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### 4.3.7 Cardiff

One modification (2.1%) has taken place to MSOAs in Cardiff. The MSOA coded 'W02000413' has been split into two separate MSOAs 'W02000423' and 'W02000422'. The splits are illustrated by the dark blue colour on the map. There are now 48 MSOAs in Cardiff compared to 47 in 2001.

**Changes to MSOA boundaries between 2001 and 2011 in Cardiff**



### 4.3.8 Merthyr Tydfil

There has been one modification (14.3%) to MSOA boundaries in Merthyr Tydfil. The 2001 MSOA coded 'W02000283' and 'W02000112' (formally in Powys) has changed slightly and is now called 'W02000415'. Further details on changes resulting from local authority boundary shift can be found on page 25.

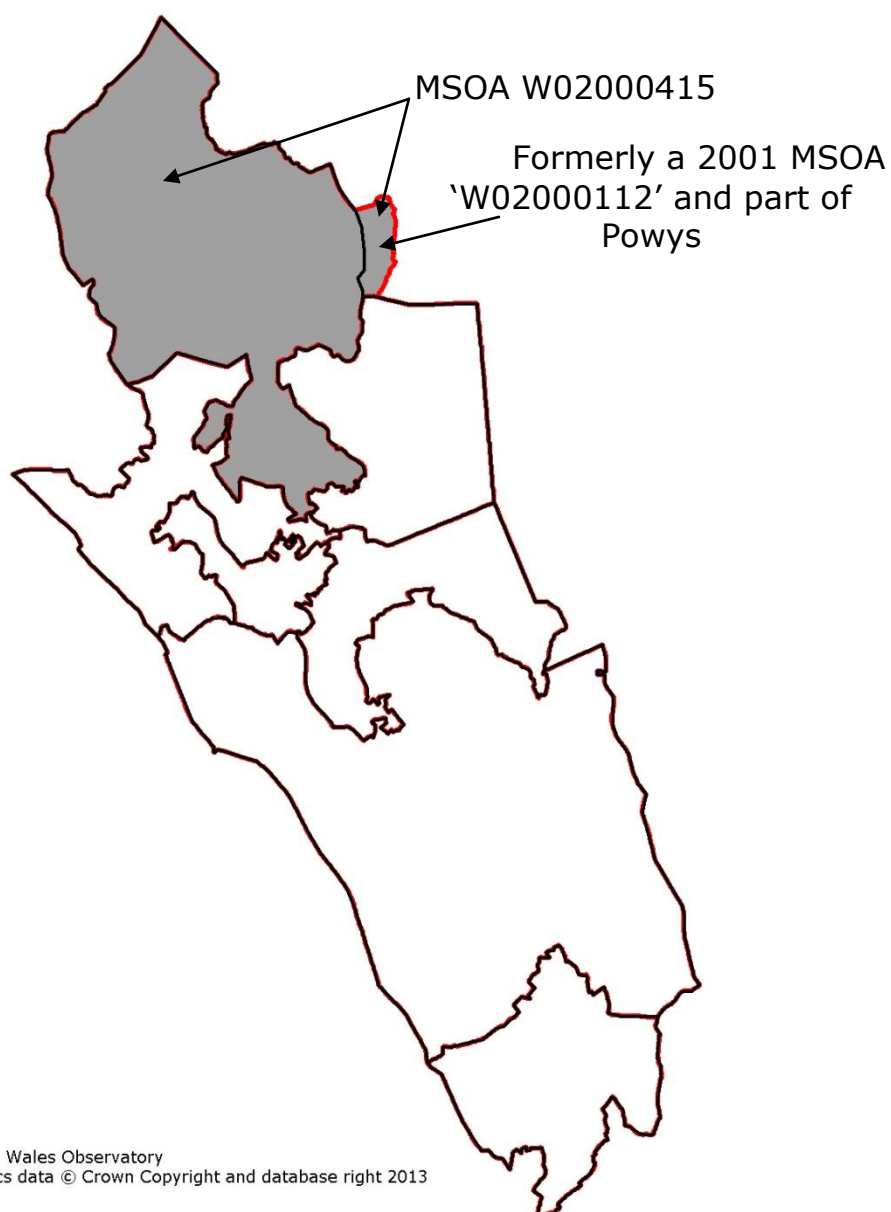
There are 7 MSOAs in Merthyr Tydfil in 2011, which remains unchanged since 2001.

#### Changes to MSOA boundaries between 2001 and 2011 in Merthyr Tydfil

■ other changes

□ 2001 MSOA boundaries

□ 2011 MSOA boundaries



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## 5 References

Office for National Statistics. *An overview of best-fitting: building 2011 Census estimates from output areas*. 2012 v1. [Online]. Available at: <http://www.ons.gov.uk/ons/guide-method/geography/products/census/index.html> (Accessed 28<sup>th</sup> Nov 2012)

Office for National Statistics. *Changes to output areas and super output areas, 2001 to 2011*. (Excel file). [Online]. Available at: <http://www.ons.gov.uk/ons/guide-method/geography/products/census/index.html> (Accessed 28<sup>th</sup> Nov 2012)

Office for National Statistics. *Changes to output areas and super output areas, 2001 to 2011*. (PDF report November 2012). [Online]. Available at: <http://www.ons.gov.uk/ons/guide-method/geography/products/census/index.html> (Accessed 28<sup>th</sup> Nov 2012)

Office for National Statistics. *2001-2011 output area lookup files*. (Excel file). [Online]. Available at: <http://www.ons.gov.uk/ons/guide-method/geography/products/census/lookup/2001-2011/index.html>. (Accessed 28<sup>th</sup> Nov 2012)