



**Vale of Glamorgan
Local Service Board
Unified Needs Assessment**

**Priority Outcome Three –
Sustainability**

December 2013

**Produced by the
Business Intelligence Group**

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Priority Outcome Three

Vale residents and organisations respect the local environment and work together to meet the challenge of climate change

Approach

In order to explore the extent to which residents and organisations are behaving in a sustainable way, and the appropriateness of this outcome as a priority, there is a need to identify suitable indicators upon which to make a judgement. Since no single direct indicator exists to measure this outcome a number of proxy indicators have been identified which can serve to assess the position in the Vale of Glamorgan.

Indicators

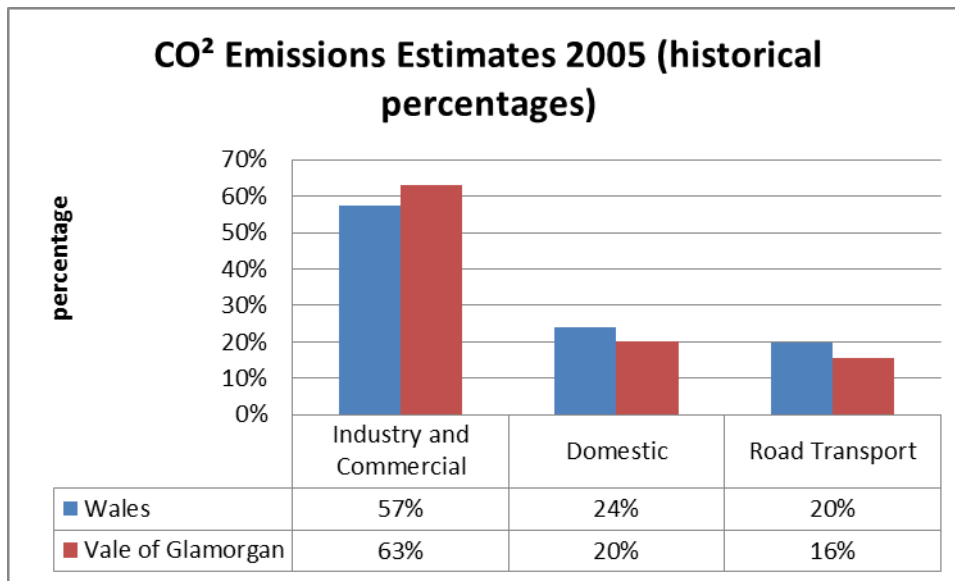
CO2 emissions;
Energy consumption;
The ecological footprint of the Vale of Glamorgan;
Municipal waste / recycling rates;
Fly tipping;
Bathing water quality; and
Flood risk.

Data availability to measure any progress on this outcome is still limited but has improved since the previous unified needs assessment in 2011. The most recent data available has been used but this is not necessarily representative of the current position and at times dates back as far as 2003.

CO2 Emissions

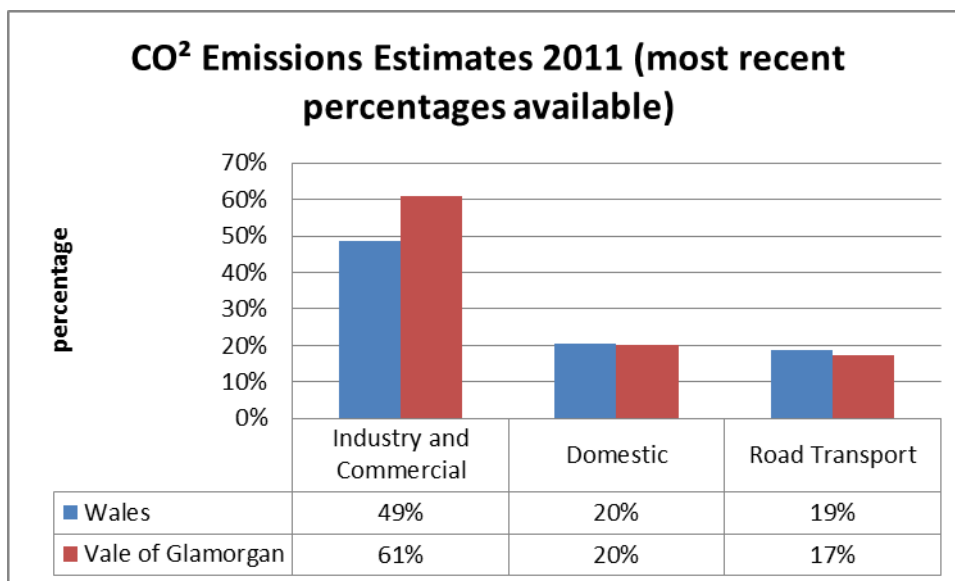
CO² emissions can have a significant impact on the environment and the future of climate change. In terms of sustainability, an increase in CO² emissions can have major implications both locally, nationally and globally and therefore there are directives from central and national government to reduce the amount of CO² produced.

Figure 1: Carbon dioxide estimated emissions, 2005.



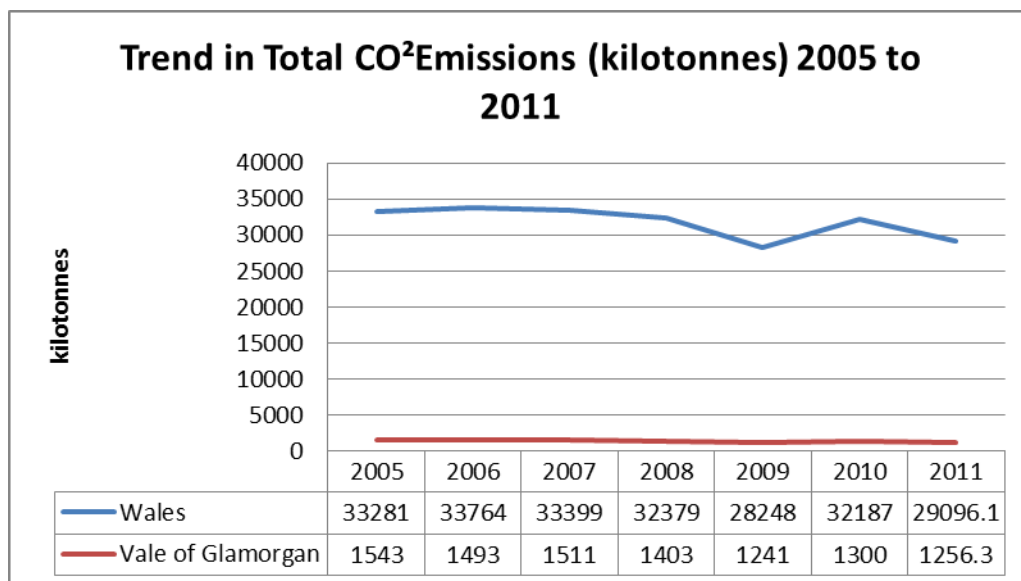
Source: Local Government Data Unit – InfoBase Vale

Figure 2: Carbon dioxide estimated emissions, 2011



Source: Local Government Data Unit – InfoBase Vale

Figure 3: Carbon dioxide total emissions, 2005 to 2011

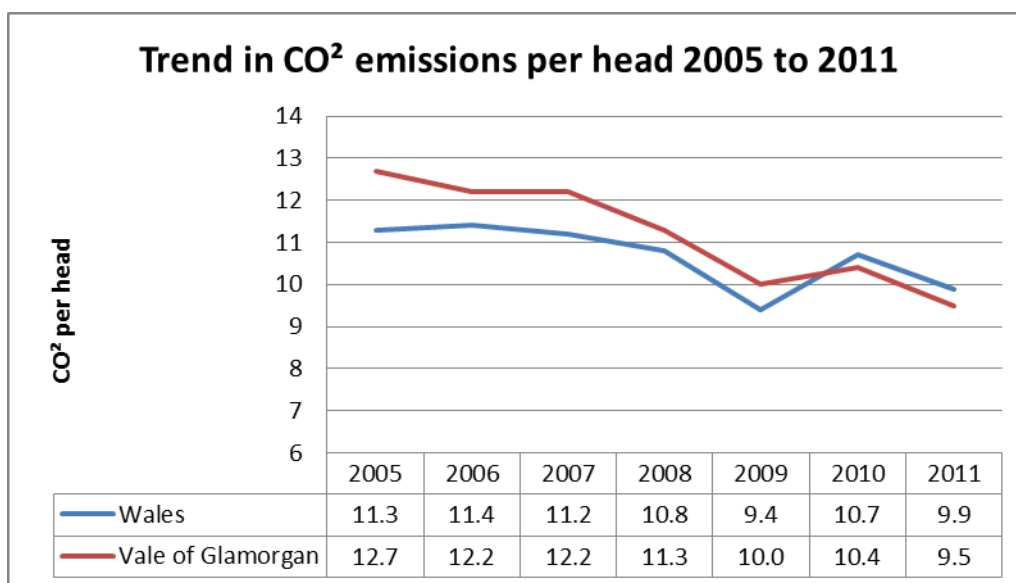


Source: Local Government Data Unit – InfoBase Vale

The selected snapshots of data from 2005 and 2011 in the charts / tables above show that the Vale of Glamorgan has the same level of proportions of CO² emissions in the “Domestic” category from 2005 to 2011. The “Road Transport” sector has increased slightly (16% to 17%) while “Industry and Commercial” has decreased from 63% to 61% of all CO² emissions. Land Use, Land Use Change and Forestry Net Emissions comprise the remaining but small (1-2%) percentage of emissions. However, since the data is two years since recording it may not reflect the current position but is the most up to date data available.

The overall trend from 2005 to 2011 for Wales and the Vale of Glamorgan shows a general decline in CO² emissions. However, following steady progress to 2008, a marked drop occurred in 2009 only to be followed by a rise in 2010 – this was far more significant for the Wales total (almost 14% over the previous year) with the Vale of Glamorgan showing a relatively small increase of 4.75%. This returned to decreases in 2011 (3.6% in the Vale but a much more significant level in Wales overall – 9.6%).

Figure 4: Carbon dioxide emissions per head, 2005 to 2011



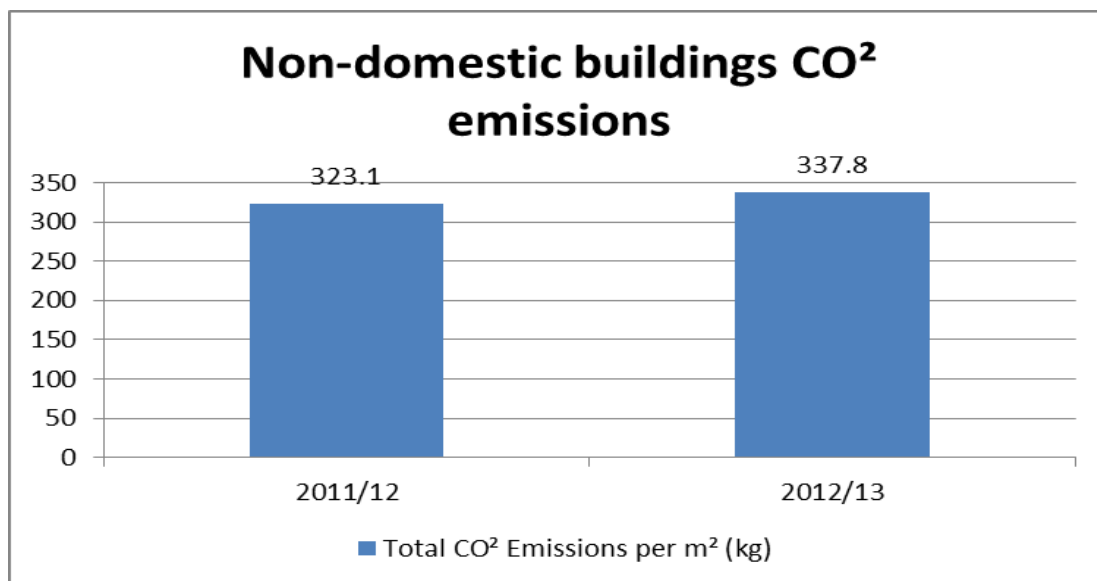
Source: Local Government Data Unit – InfoBase Vale

This overall downward trend is also reflected in CO² emissions per head of population – however the downward gradient for the Vale of Glamorgan figures is steeper than for Wales. In 2005 the Vale of Glamorgan had a higher level of CO² emissions per head than the Welsh average, however by 2011 this had reduced to below the Welsh figure.

It may be noted that both Wales and the Vale of Glamorgan witnessed a rise in emissions per head in 2010 with the former experiencing a much sharper rise over the previous year (13.8% compared to 4%). This rise was halted again in 2011 with the Vale of Glamorgan showing its lowest level emission per head over this time period. Encouragingly, it shows for the figures available that the emissions per head in the Vale of Glamorgan continued below the equivalent for Wales overall following the first instance of this in 2010.

The following chart shows the CO² emissions for non-domestic buildings in the Vale of Glamorgan (only for those premises where floor space data is available and includes Vale of Glamorgan Council, Cardiff and Vale UHB, South Wales Police and South Wales Fire and Rescue Service but does not include Cardiff and Vale College for 2012/2013). These figures are for emissions in all buildings that are used for non-domestic purposes that are owned, leased or rented where the organisations have full responsibility for energy costs and use in those buildings. The chart shows a slight increase in the amount of CO² emissions in recent years for all premises of the organisations listed above but within this the Vale of Glamorgan Council managed a small decrease.

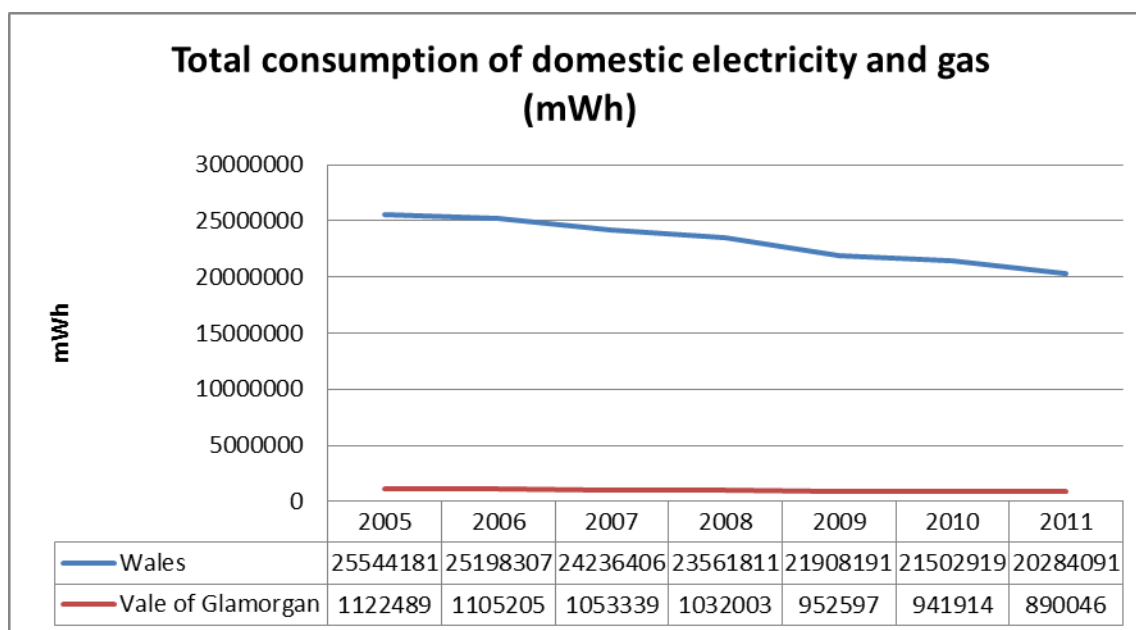
Figure 5: Non-domestic buildings carbon dioxide emissions, 2011-12 and 2012-13



Source: Collected from partners by the Vale of Glamorgan Council

Energy Consumption

Figure 6: Consumption of domestic electricity and gas, 2005 to 2011



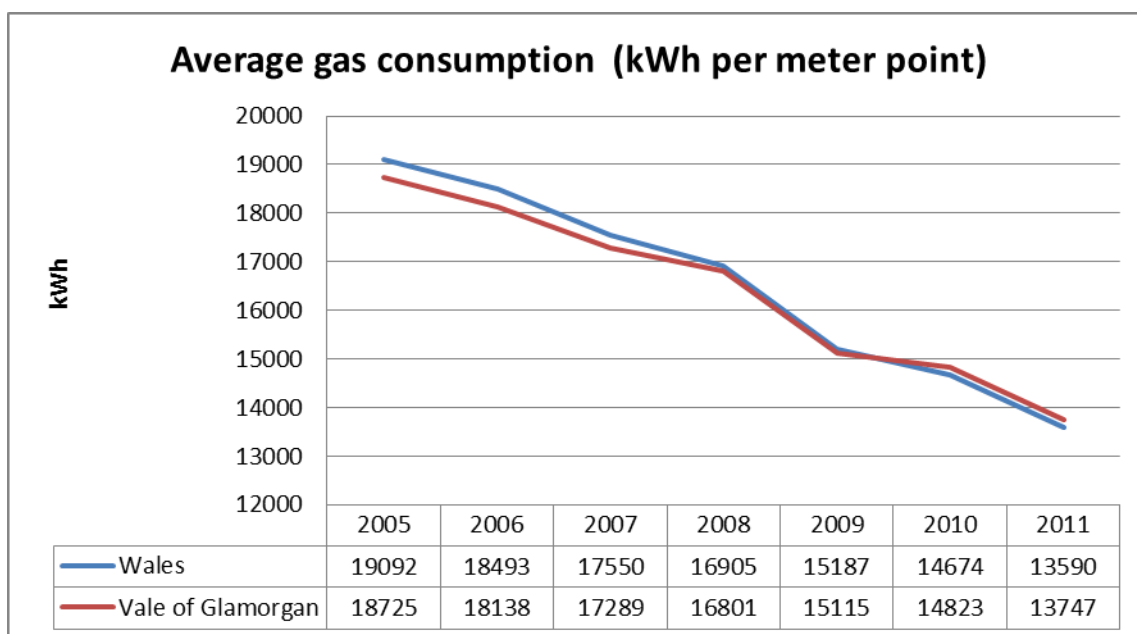
Source: Local Government Data Unit – InfoBase Vale

Energy consumption trends, overall, have shown decreasing levels since 2005 both at a national and local authority level – Wales total energy consumption (gas and electric) has decreased 20.6% from over 25 million mWh to just over 20 million mWh while the Vale of Glamorgan has more than matched this on a percentage basis from over 1.12 million mWh to 0.89 million mWh – a reduction of 20.7%.

Data for average gas consumption only (kWh) shows a reduction in consumption of 28.8% for Wales and this is closely run by a 26.6% reduction in the Vale of Glamorgan.

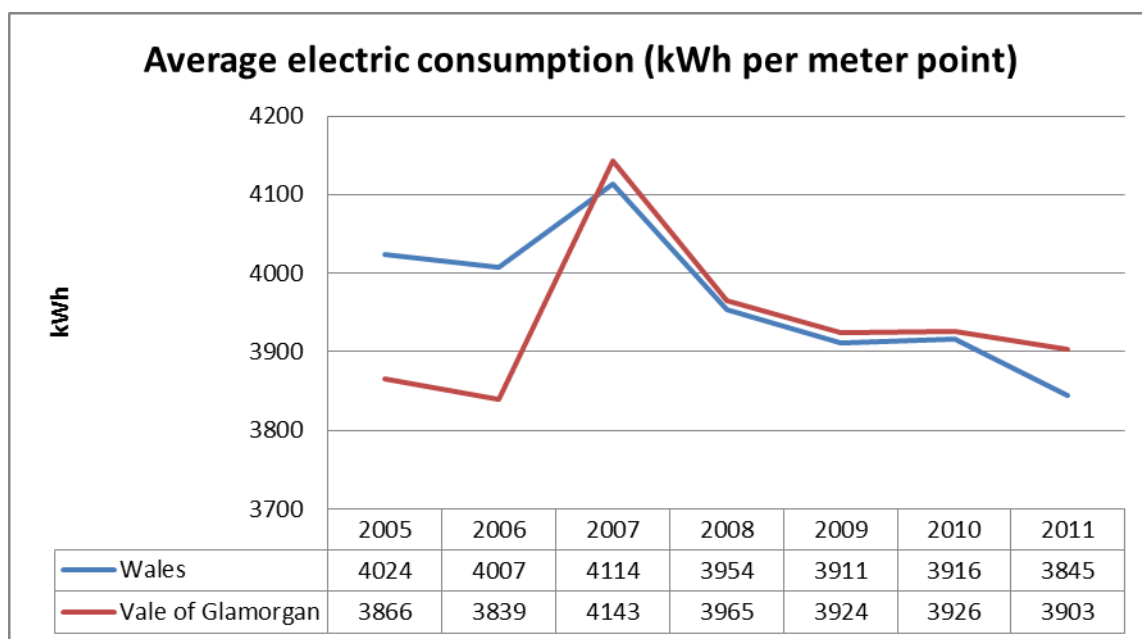
Average electric consumption has seen a smaller decrease of 4.5% for Wales overall from 4024 kWh per meter to 3845 kWh per meter. In the Vale of Glamorgan there was a small increase from 3866 average kWh per meter to 3903 average kWh per meter (an almost 1% increase) – however following a sharp rise in consumption in 2007, the year on year trend has been for less electricity energy consumption per meter.

Figure 7: Average gas consumption per meter point, 2005 to 2011



Source: Local Government Data Unit – InfoBase Vale

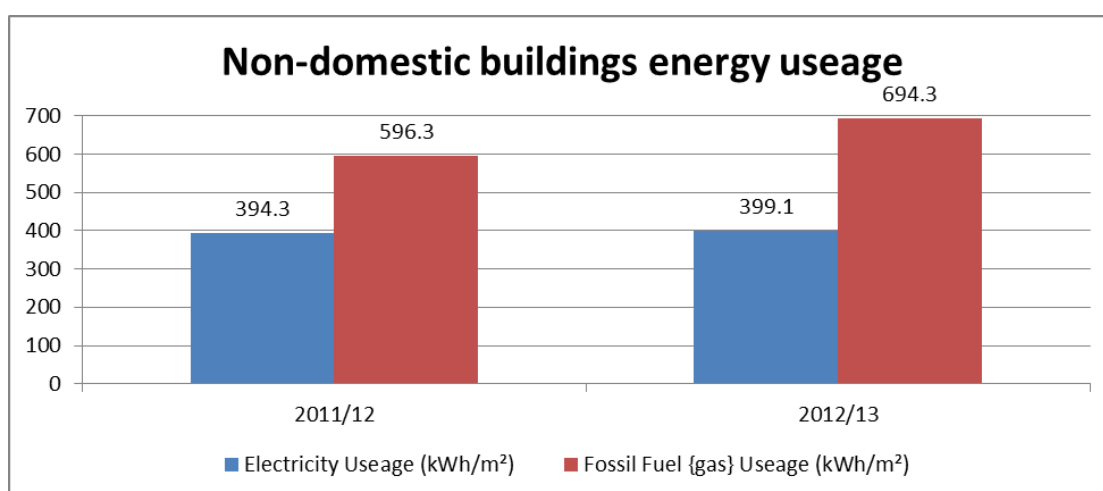
Figure 8: Average electric consumption per meter point, 2005 to 2011



Source: Local Government Data Unit – InfoBase Vale

Energy consumption figures per square metre (kWh/m² fossil fuel {gas} and electricity) available for non-domestic buildings show that there has been an overall increase in recent years – albeit electricity has shown a small increase from 394.3 kWh/m² to 399.1 kWh/m² between 2011/12 and 2012/13 while gas consumption has increased quite significantly (from 596.3 kWh/m² to 694.3 kWh/m²) in the same period. These figures represent premises where Vale of Glamorgan Council, Cardiff and Vale UHB, South Wales Police and South Wales Fire and Rescue Service are responsible for energy costs and use in those buildings. Hidden within this there is evidence of decreases with some organisations but off-set by increases in others e.g. Vale of Glamorgan Council and South Wales Police experienced a small decrease in electricity use. Changes in energy use can be due to the expansion or disposal of premises and further exploration of usage per square metre will be undertaken.

Figure 9: Non-domestic buildings energy usage, 2011-12 and 2012-13.



Source: Collected from LSB partners by the Vale of Glamorgan Council

Ecological Footprint

The ecological footprint is an indicator of the total environmental burden that we place on the planet. It represents the area of land needed to provide raw materials, energy and food, as well as absorb pollution and waste created, in this case by the Welsh population. It is measured in global hectares and is usually expressed as a per person measure. The most recent study available on ecological footprint is based on 2003 data and was published in 2008. The 2003 ecological footprint (Global Ha per Capita) was 5.1 for the Vale of Glamorgan. This was the same as Cardiff, Neath Port Talbot and Wrexham. The footprint for the Spatial Plan Area of South East Wales was 5.08 gha/capita.

The footprint of housing measures the impact of fuel emissions from direct household energy use for heat, hot water, lighting and electrical appliances as well as the impact from household maintenance and from household construction. For the Vale of Glamorgan, the housing footprint was the lowest in Wales at 1.09-1.15 gha/capita.

The footprint of transport measures the impact of fuel emissions from personal travel in public and private vehicles as well as the impact from maintaining vehicles, buying new vehicles and building the transport infrastructure. The footprint for transport for the Vale of Glamorgan was the same as that for the

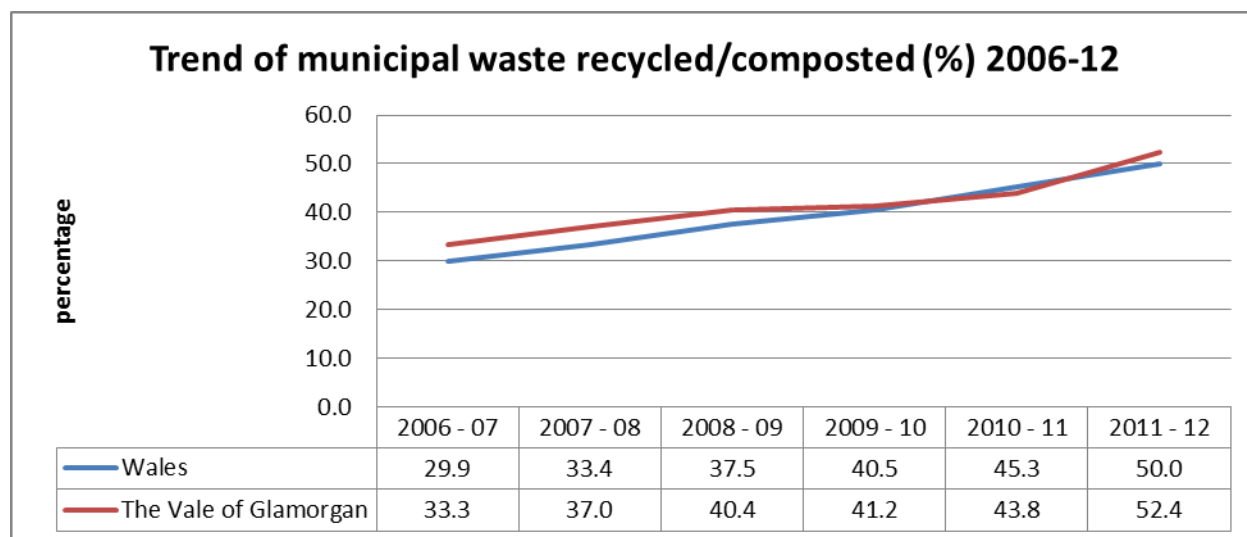
majority of authorities in Wales at 0.93-0.97. Powys, Ceredigion and Monmouthshire were the highest in Wales.

The footprint of food measures the impact of all food and drink consumed by households and at restaurants and takeaways. The food footprint for the Vale of Glamorgan was amongst the highest in Wales along with Conwy, Denbighshire, Ceredigion and Monmouthshire.

Recycling

The Vale of Glamorgan has shown a continuous increase in the amount of municipal waste that it recycles. This trend has continued in 2012 following a slowing of improvement from 2009 to 2011.

Figure 10: Percentage of municipal waste recycled or composted, 2006 to 2012.



Source: Local Government Data Unit – InfoBase Vale

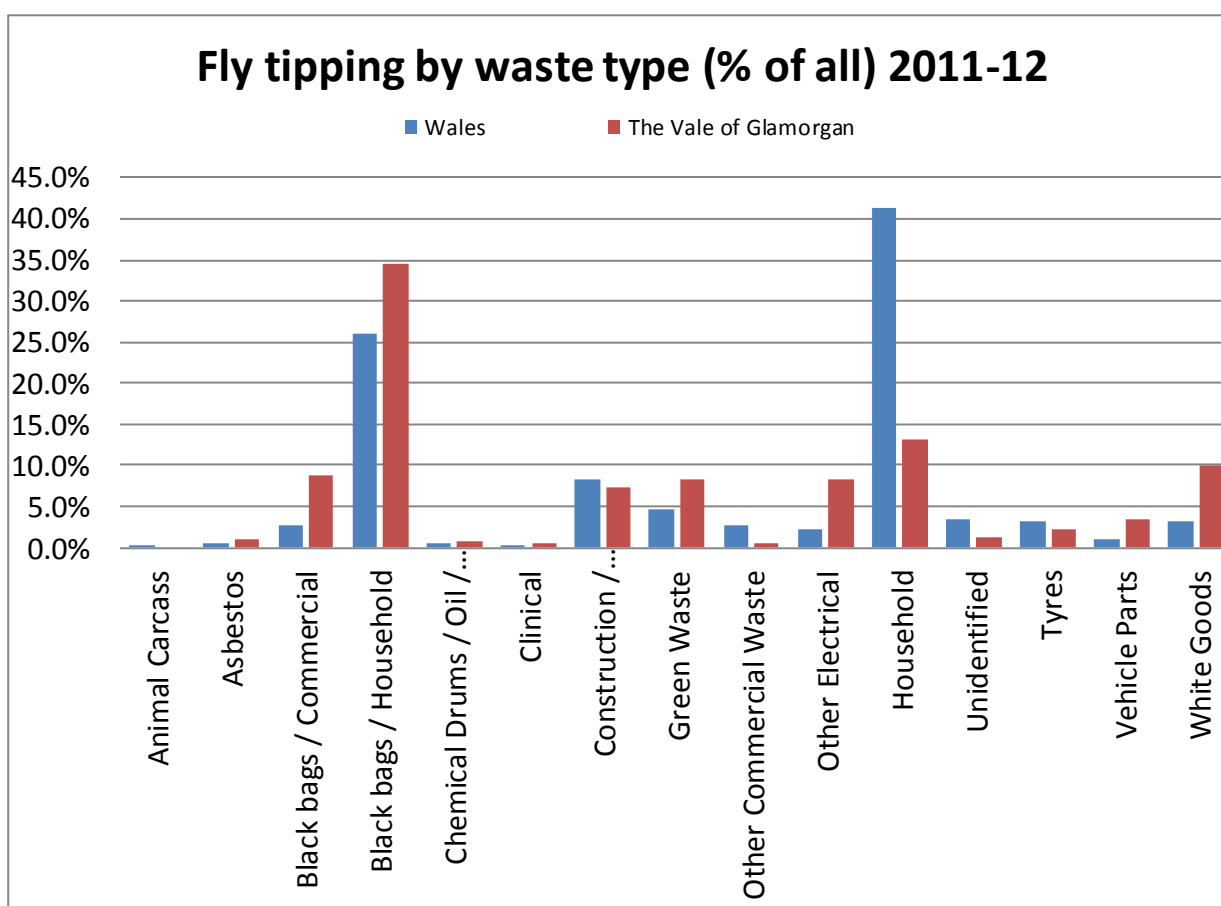
The Wales level has recovered to reach an all-time high of 52.4%. Data shows that re-cycling/composting levels in the Vale of Glamorgan have improved from a third of all waste in 2006-07 to significantly over a half of all waste in 2011-2012.

Fly tipping

Reports of fly tipping have significantly decreased since 2006-07 (see trend chart overleaf) but the snapshot table and chart of the 2011-12 reports shows the diversity of types of objects and materials that are dumped in non-registered areas. The vast majority of reports in Wales (67.3% total) and the Vale of Glamorgan (47.6%) involved household or black bag tipping. Efforts should be made to discourage this behaviour possibly through providing more information about collections and access to civic amenity sites.

Table 1: Fly-tipping by waste type, 2011-12

Waste - fly tipping by waste type (% of all) 2011-2012															
	Animal Carcass	Asbestos	Black bags- Commercial	Black bags- Household	Chemical Drums- Oil-Fuel	Clinical	Construction- Demolition- Excavation	Green Waste	Other Commercial Waste	Other Electrical	Household	Unidentified	Tyres	Vehicle Parts	White Goods
Wales	0.3%	0.5%	2.6%	26.0%	0.4%	0.2%	8.2%	4.8%	2.7%	2.3%	41.3%	3.3%	3.2%	0.9%	3.2%
The Vale of Glamorgan	0.0%	1.0%	8.8%	34.5%	0.7%	0.6%	7.4%	8.4%	0.5%	8.3%	13.1%	1.2%	2.1%	3.4%	10.0%



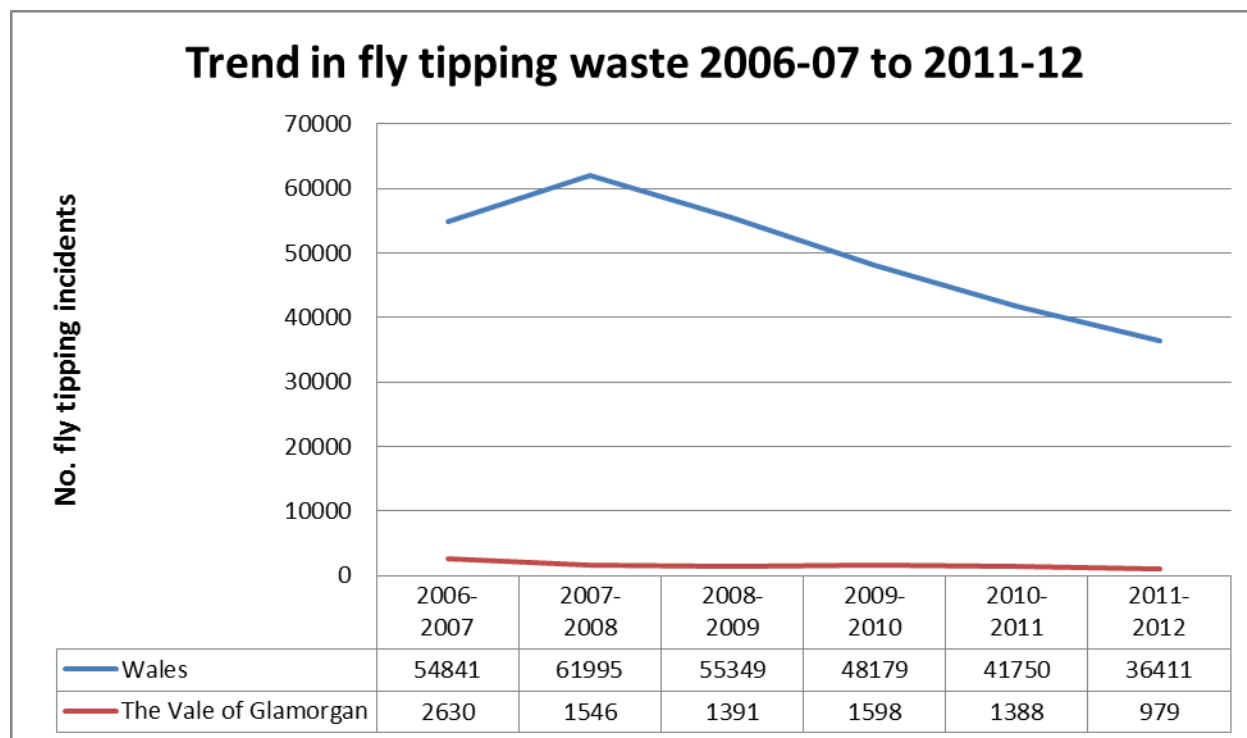
Source: Local Government Data Unit – InfoBase Vale

The number of reports for dumping of “white goods” and “other electrical” items was significantly higher in the Vale of Glamorgan than Wales overall – 10.0% and 8.3% compared to 3.2% and 2.3% respectively. Awareness of collection services should be heightened to reduce these instances.

Dramatic decreases in fly tipping reports have taken place since 2006 especially in the Vale of Glamorgan from 2,630 to 979 in 2011-12 which represents a 62.8% change. This can be compared with Wales which decreased by a third (33.6%) from 54,841 reports at the start of the period to 36,411 observations at the most recent recording – this was after a sharp rise to 61,995 reports in 2007.

It may be noted that the number of fly tipping reports in the Vale of Glamorgan has also reduced as a proportion of all Wales reports from 2,630 out of 54,841 (which represents 4.80% in 2006-07) to 979 out of 36,411 (which represents 2.68% in 2011-12).

Figure 11: Number of fly-tipping incidents, 2006-07 to 2011-12



Source: Local Government Data Unit – InfoBase Vale

Bathing Water Quality

Bathing waters in Wales are monitored according to European Union law to protect public health and the environment. In Wales during the 2012 bathing season 100 designated bathing waters were tested. 97 (97%) passed the mandatory European standard (“IMPERATIVE”) while 75 (75%) passed the tougher European guideline standard (“GUIDELINE”). Bathing water quality has been measured at various coastal locations in the Vale of Glamorgan since 1988 – Jackson’s Bay, Barry; Whitmore Bay, Barry; Cold Knap, Barry and further west at Southerndown. All four sites “failed” the tests in 1988 but all met the guideline level in 2011 but Jacksons Bay dipped back to “imperative” in 2012 – this is most likely due to the well above average rainfall. This affects water quality by washing pollution from urban and agricultural areas into rivers and the sea and by causing sewage systems to spill into rivers and the sea by design to prevent them becoming overwhelmed and flooding homes and businesses. Lower than average levels of sunshine in the 2012 bathing season also contributed as the ultra-violet light from the sun normally kills bacteria in the water.

Until 2014 there is a transition period between two pieces of European Union legislation – the revised Bathing Water Directive (rBWD) uses standards approximately twice as strict as the current Bathing Water Directive (cBWD) but classifies waters based on four years of data instead of one. 2012 was the first year of sampling for the rBWD so the first classifications will be available in 2015.

In Wales, some beaches that do not come under the European Union bathing water law are also monitored, largely to promote tourism and gain beach awards. There have been seven of these since first records were taken in 1998 – however, not all of these sites are monitored each year:

Penarth Yacht Club (1998-2008)
 Watch Tower Bay, Barry (1998-2011)
 Fontygary Bay, Rhoose (1998-2012)
 Limpert Bay, Aberthaw (1998-2008)
 Llantwit Major (1998-2012)
 Ogmores Central (2001-2012)
 Ogmores West (2009 -2012)

Five sites were monitored in 2011 and all passed (4 guideline and 1 imperative) but this performance fell back in 2012 with only Fontygary retaining the guideline level and Ogmores West failed.

Figure 12: European Union bathing water compliance, 2003 to 2012

EUROPEAN UNION BATHING WATER COMPLIANCE - RECENT YEARS RECORDS										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Jacksons Bay Barry	Imperative	Guideline	Imperative	Imperative	Imperative	Imperative	Guideline	Imperative	Guideline	Imperative
Whitmore Bay Barry	Imperative	Imperative	Guideline	Guideline	Guideline	Guideline	Guideline	Guideline	Guideline	Guideline
Cold Knap Barry	Guideline	Guideline	Guideline	Guideline	Imperative	Guideline	Guideline	Guideline	Guideline	Guideline
Southerndown	Guideline	Guideline	Guideline	Imperative	Guideline	Imperative	Imperative	Guideline	Guideline	Guideline
NON-EUROPEAN UNION BATHING WATER COMPLIANCE - RECENT YEARS RECORDS										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Penarth Yacht Club	Imperative	Fail	Imperative	Imperative	Imperative	Fail				
Watch Tower Bay, Barry	Imperative	Imperative	Imperative	Imperative	Imperative	Imperative	Imperative	Fail	Guideline	
Fontygary Bay, Rhoose	Guideline	Guideline	Imperative	Guideline	Guideline	Fail	Guideline	Guideline	Guideline	Guideline
Limpert Bay, Aberthaw	Guideline	Imperative	Imperative	Imperative	Guideline	Imperative				
Llantwit Major	Guideline	Imperative	Fail	Imperative	Guideline	Fail	Imperative	Imperative	Guideline	Imperative
Ogmores Central	Imperative	Imperative	Imperative	Imperative	Imperative	Fail	Imperative	Imperative	Guideline	Imperative
Ogmores West							Fail	Fail	Imperative	Fail
Overall assessment of the water quality at 100 beaches around Wales										
Based on 20 water samples taken by Environment Agency Wales during the Bathing Season										
Assessed against Microbiological standards										
	Fail	= does not meet the minimum standards in the EC Bathing Waters Directive								
	Imperative	= meets the minimum standards in the EC Bathing Waters Directive								
	Guideline	= meets the strictest standards in the EC Bathing Waters Directive								

Source: Natural Resources Wales

Bathing water awards are awarded on the previous season’s bathing water results, although there are many criteria other than water quality taken into account. In 2012, the Vale of Glamorgan had one Blue Flag beach (Whitmore Bay, Barry) an international award which is only available to designated bathing waters (Southerndown had previously achieved this 2004-2006). However in 2013, Whitmore Bay lost its Blue Flag award – this was attributable to the introduction of stricter criteria rather than any reduction in the quality of the beach itself.

The Seaside Award scheme was introduced in 1992. There are two categories of award – resort and rural – which have different land-based criteria depending on whether the beach is part of a managed tourist resort or is a smaller beach with limited facilities. A beach can switch between resort and rural awards each season depending on the facilities provided that year, such as lifeguards.

Water quality for both resort and rural Seaside Awards is again judged on the results of the analyses of samples taken during the previous bathing season. In

order to be eligible for a Seaside Award, the water quality must meet at least the mandatory standard for faecal and total coli form bacteria.

In 2012, Vale of Glamorgan beaches at Jacksons Bay, Whitmore Bay and Southerndown all qualified as resorts under the Seaside Award scheme.

Flood Risk

The National Flood Risk Assessment (NaFRA) together with the National Property Dataset (NPD), are used to determine the numbers of properties (residential and non-residential) at risk of flooding from rivers and the sea.

The percentages reported are the proportion of properties in the entire spatial unit, i.e. all properties and not just in the floodplain and is rounded to the nearest single decimal place.

The chance of flooding is set out in three risk categories (or bands):

Significant Risk

Moderate Risk

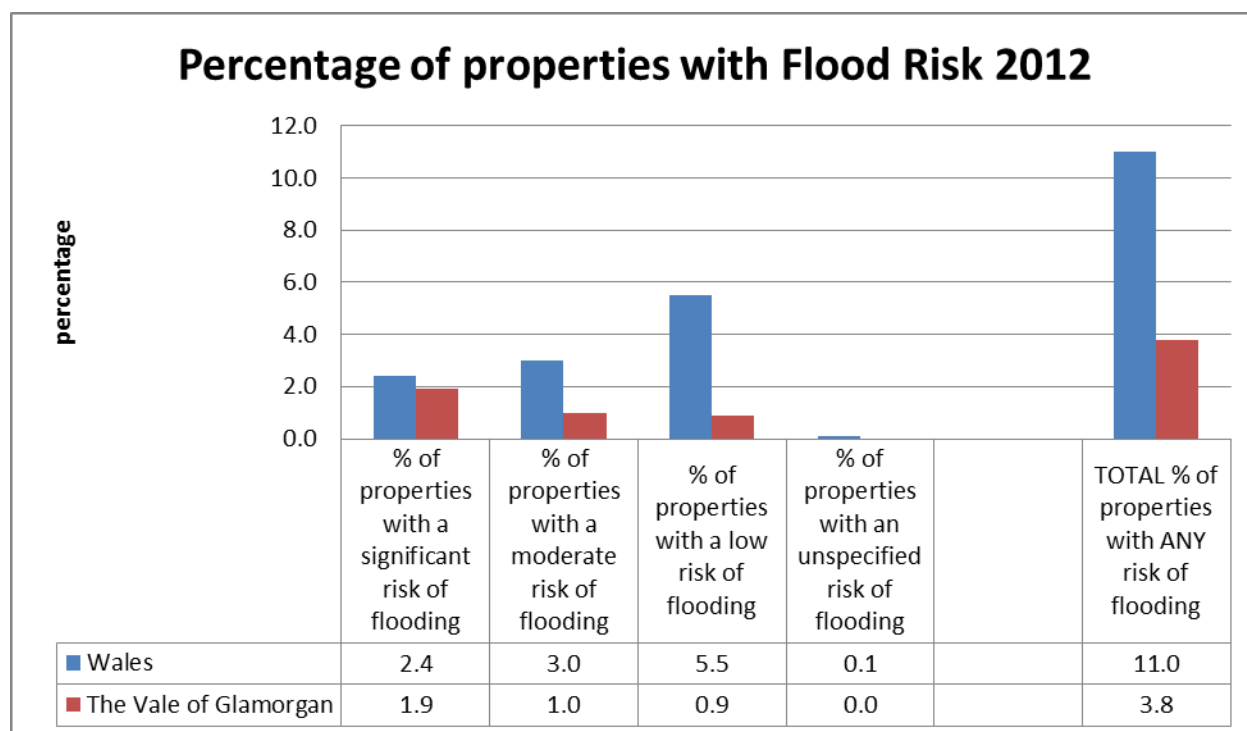
Low Risk

The NaFRA includes flooding from all rivers with a catchment size greater than 3 square kilometres, and all flooding from the sea (both along the open coast and tidal estuaries). Smaller rivers are included in the assessment where they fall within the area that could be affected by an extreme flood (0.1% chance in any year).

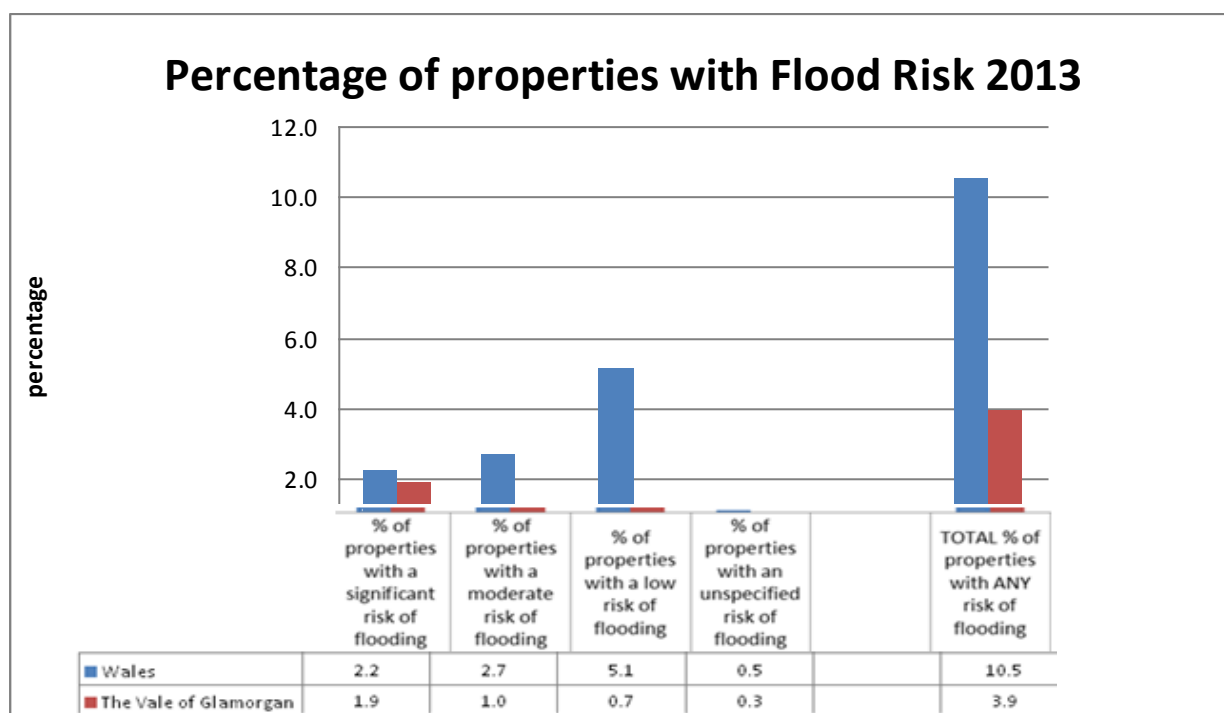
The assessment takes into account the type, location and condition of flood defences, and the chance of these defences being overtopped or breached during major floods. The likelihood of flooding and the consequent costs (economic damages) are assessed for each 50m square impact zone.

It does not include other forms of flooding such as from highway drains, sewers, overland flow or rising groundwater.

Figure 13: Percentage of properties with flood risk, 2012 and 2013



Source: Local Government Data Unit – InfoBase Vale



Source: Local Government Data Unit – InfoBase Vale

From figures identified for recent years (2012 and 2013) it would appear that the risk of flooding has barely changed overall – 3.8% compared to 3.9% - this appears to be flagged up and mainly attributable to the identification of properties with an “unspecified risk of flooding” which had not been the case in

2012. A small decrease in the proportion of properties with a “low” risk of flooding was also recorded to marginally offset the increase in total overall.

Environmental Deprivation

Data is available at the Lower Super Output Area (LSOA) level for this indicator – air quality, air emissions, flood risk and proximity to waste disposal and industrial sites are included as the sub-divisions of this indicator. Explanations of how the sub-indicators are derived accompany the tables below. A guideline for studying the maps is that the darker the shade of fill per LSOA the greater the “environmental deprivation”.

The tables and maps reveal that LSOAs in wards to the east of Barry feature highly. Parts of Cadoc and Castleland appear in the ten worst affected LSOAs for all four sub-indicators – this is closely followed by parts of Court and Buttrills but only by virtue of a lower flooding risk. St Augustines and Sully LSOAs are the only other sub-areas that recorded values in the top ten environmentally deprived.

Table 2: LSOAs ranked by air quality, WIMD 2011

LSOA's sorted by AIR QUALITY	air quality	air emissions	flood risk	proximity to poor sites
W01001126 - St. Augustine's 4	88	65	81	60
W01001067 - Cadoc 1	83	96	81	100
W01001068 - Cadoc 2	83	95	87	100
W01001079 - Court 1	82	98	0	98
W01001065 - Buttrills 3	80	97	0	93
W01001069 - Cadoc 3	80	98	0	99
W01001070 - Cadoc 4	80	97	0	100
W01001074 - Castleland 2	80	97	0	96
W01001080 - Court 2	80	97	0	95
W01001081 - Court 3	80	96	0	89
W01001124 - St. Augustine's 2	80	62	0	0

This is a WIMD 2011 indicator. Air pollution concentrations are low-resolution data estimated using models. They are estimated averages over an area. Data was mapped for each pollutant, together with Air Quality Management Area data. The data was then normalised, using air quality standards, and exponentially transformed to create the indicator.

Table 3: LSOAs ranked by air emissions, WIMD 2011

LSOAs sorted by AIR EMISSIONS	air quality	air emissions	flood risk	proximity to poor sites
W01001079 - Court 1	82	98	0	98
W01001069 - Cadoc 3	80	98	0	99
W01001065 - Buttrills 3	80	97	0	93
W01001070 - Cadoc 4	80	97	0	100
W01001074 - Castleland 2	80	97	0	96
W01001080 - Court 2	80	97	0	95
W01001067 - Cadoc 1	83	96	81	100
W01001081 - Court 3	80	96	0	89
W01001071 - Cadoc 5	79	96	93	100
W01001063 - Buttrills 1	78	96	0	79

This is a WIMD 2008 indicator. Energy, different gases and materials are produced which disperse into the atmosphere: these are known as air emissions.

Table 4: LSOAs ranked by flood risk, WIMD 2011

LSOAs sorted by FLOOD RISK	air quality	air emissions	flood risk	proximity to poor sites
W01001087 - Dinas Powys 2	66	40	96	0
W01001089 - Dinas Powys 4	67	24	96	62
W01001071 - Cadoc 5	79	96	93	100
W01001086 - Dinas Powys 1	64	28	89	55
W01001068 - Cadoc 2	83	95	87	100
W01001067 - Cadoc 1	83	96	81	100
W01001126 - St. Augustine's 4	88	65	81	60
W01001105 - Llandow/Ewenny	46	5	77	74
W01001073 - Castleland 1	75	81	74	96
W01001106 - Llantwit Major 1	36	59	73	0

This is a WIMD 2008 indicator. The proportion of households in a LSOA area weighted by a risk factor which is based on the frequency of flooding, not severity of damage. The factors include coastal flooding but not marine erosion.

Table 5: LSOAs ranked by flood risk, WIMD 2011

LSOAs sorted by PROXIMITY	air quality	air emissions	flood risk	proximity to poor sites
W01001071 - Cadoc 5	79	96	93	100
W01001068 - Cadoc 2	83	95	87	100
W01001067 - Cadoc 1	83	96	81	100
W01001070 - Cadoc 4	80	97	0	100
W01001133 - Sully 2	61	42	0	100
W01001069 - Cadoc 3	80	98	0	99
W01001132 - Sully 1	65	54	0	99
W01001079 - Court 1	82	98	0	98
W01001073 - Castleland 1	75	81	74	96
W01001074 - Castleland 2	80	97	0	96

This is a WIMD 2008 indicator. Population averaged emissions for each LSOA combines annual emissions of Arsenic, Benzo (a) Pyrene, Butadiene, Cadmium, Chromium, Dioxins, Mercury, Ammonia, Nickel, Nitrogen Oxides, Lead, Vanadium and Volatile Organic Chlorides. These are measured against best available standards and given different weightings depending on level compared with the standard. These were taken into account when all were combined into a single score of between 0 and 100. 0 represents the cleanest area in Wales for these substances and 100 represents the dirtiest area in Wales for these substances and may suggest proximity to activities such as traffic and industrial sites

The maps overleaf show the areas in the Vale most affected by pollution or are at risk of flooding as well as those closest to waste disposal and industrial sites.

Figure 14: Air quality by LSOA, 2009

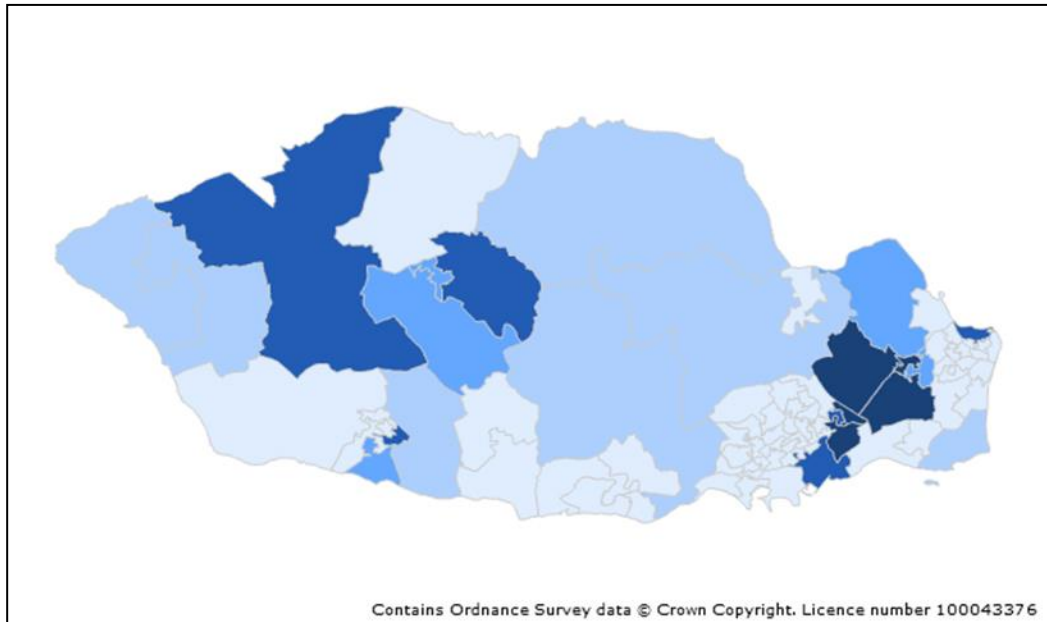


Figure 15: Air emissions, 2008

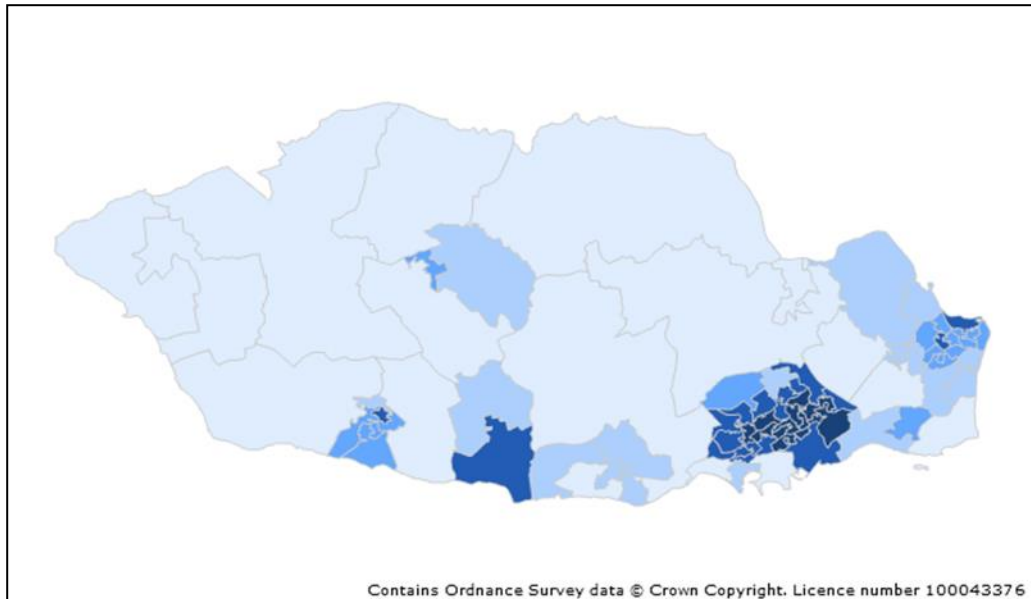


Figure 16: Flood risk, 2009

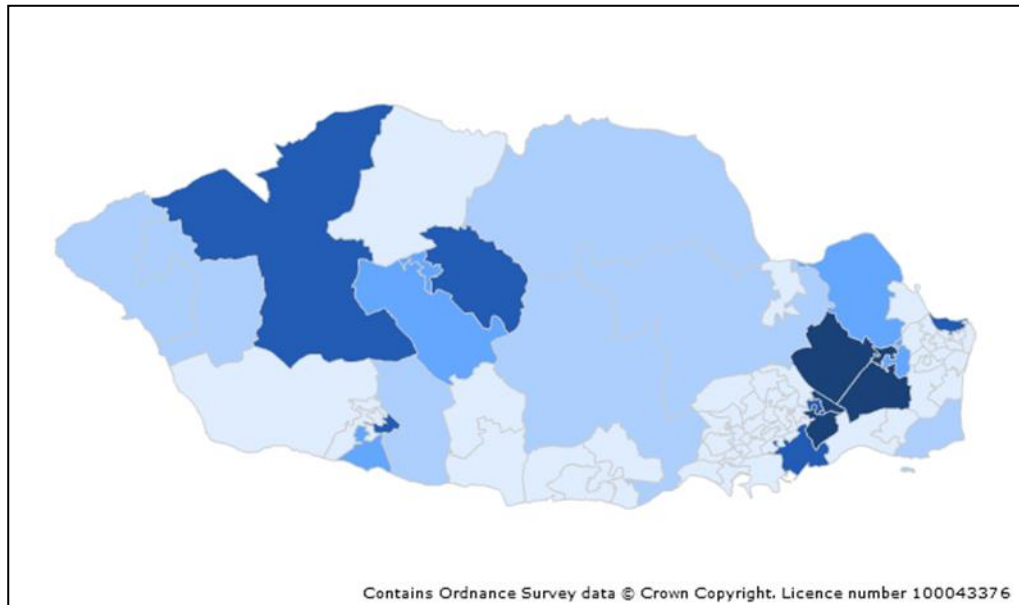
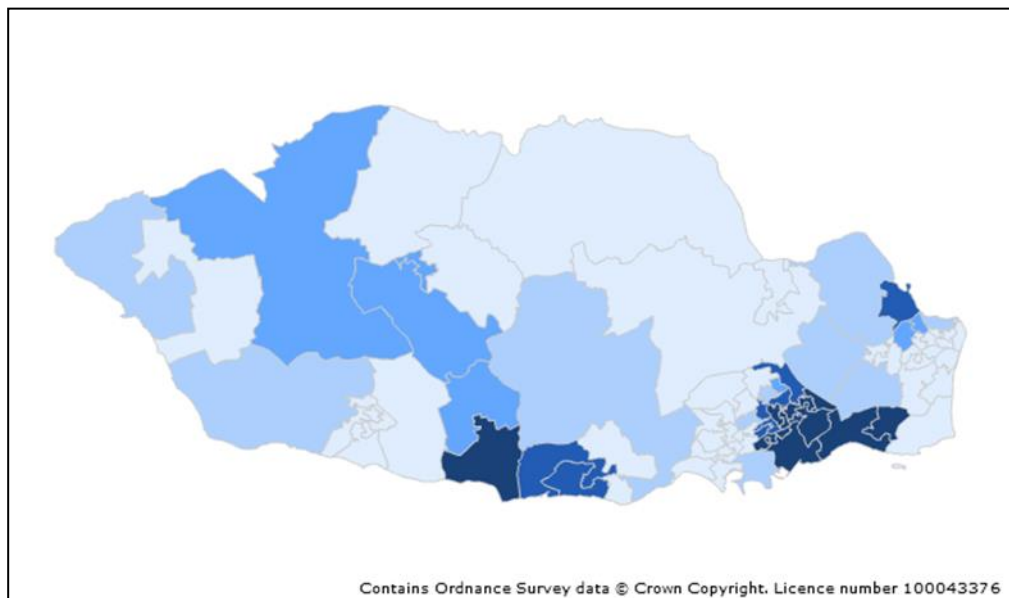


Figure 17: Proximity to Waste disposal and Industrial sites, 2010



Source: Local Government Data Unit – InfoBase Vale

Conclusions

Data availability upon which to assess progress on this outcome is still limited but has improved since the previous unified needs assessment published in 2011. It is difficult to obtain data at a local authority and sub-local authority level and, there is often a significant time lag with data but it does enable us to identify trends over time.

Recorded figures show that CO₂ emissions have shown an overall downward trend between 2005 and 2011 although there were small increases in 2007 and 2010. Recent recordings (2011/12 – 2012/13) for non-domestic buildings (Vale of Glamorgan Council, Cardiff and Vale UHB, South Wales Police and South Wales Fire and Rescue) show a small increase (4.5%) in CO₂ emissions per m²(Kg).

Average gas consumption (kWh per meter point) in the Vale of Glamorgan shows a reduction of 26.6% between 2005 and 2011 – this is a trend that must be encouraged to continue. Average electricity consumption, however, has witnessed a small increase of 1% over the same period but within that, since a sharp rise in 2007, there has been a steady downward trend. The availability of energy saving information (leaflets or internet) and concerns over rising energy costs should enable this trend to be maintained as overall energy consumption reduction in this period amounted to just over twenty per cent (20.7%)

Latest data shows that the Ecological Footprint (Global Hectares per Capita) is 5.1 for the Vale of Glamorgan (the same as the previous unified needs assessment published in 2011).

It would seem that with the support of the Council the residents of the County have embraced recycling/composting, with rates amongst the highest in Wales. It will be necessary to increase levels further to meet national targets, and so it will be important to continue to monitor progress, particularly given the recent slowdown in the rate of improvement. Re-cycling/composting levels in the Vale have improved from a third of all waste in 2006-07 to significantly over a half of all waste in 2011-2012.

Fly-tipping observations between 2006/7 and 2011/12 have shown a reduction of 62% - this represents a figure of over 1500 tipping incidents. However some concern arises from further more detailed analysis when considering white goods and other electrical goods fly tipped in the Vale compared to Wales levels – this could be an area of further investigation regarding reporting procedures for example.

There is room for improvement in Bathing Water Quality following the introduction of stricter criteria for measuring this environmental indicator. The majority of beaches in the Vale still reached the mandatory European Standard or above but efforts should be made to avoid failure to meet standards or loss of Blue Flag Awards.

Flood Risk measures have indicated little significant change. Continued monitoring should be undertaken to be able to identify areas most at risk to be able to introduce flood prevention measures

The Environmental Deprivation measures give rise to a concentration of poor environment in wards to the east of Barry. Parts of Cadoc and Castleland appear in the ten worst affected LSOAs for all four sub indicators – this is closely followed by parts of Court and Buttrills, also in east-central Barry. Efforts should be focused on improving the environment in these Barry sub-ward areas.

Although the Vale of Glamorgan's current position with regard to this outcome cannot be evaluated accurately due to the availability of timely and comparable data, certain encouraging trends may be identified.