



Community and Enterprise
Resources

The State of South Lanarkshire's Environment 2015

Sustainable
South Lanarkshire



Summary

The quality of the environment in which we live is important for our health and wellbeing. South Lanarkshire has a very rich and diverse environment which gives the area its unique character. Such an environment requires careful management in order to maintain and improve the area.

This is the fourth comprehensive biennial State of the Environment Report for South Lanarkshire. The aim of the report is to provide quality data that facilitates evaluation of a range of environmental issues, identifies trends and provides an overall picture of the condition or state of South Lanarkshire's environment.

The state of the environment across South Lanarkshire is in many aspects relatively good. However, there are certain environmental issues where there is potential for improvement. These include those that can affect human health and the natural and built environment.

The health of South Lanarkshire's people is relatively poor and below the Scottish average for several key indicators. This is particularly evident within communities identified as economically, socially and environmentally deprived. However, the difference between South Lanarkshire and the national average is narrowing. There is well documented evidence that environmental deprivation is related to health and health behaviour. Access to good quality greenspace and the wider countryside are important in promoting healthy lifestyles. The provision of greenspace and access to the core path network varies considerably across South Lanarkshire but is generally improving.

Air quality within South Lanarkshire is considered relatively good, however, there are specific 'hotspot' areas closely associated with heavily congested roads where levels are poor. Traffic growth, particularly use of the private car directly contributes to poor air quality and the release of other emissions associated with climate change.

Water quality continues to improve across the water network. The Water Framework Directive illustrates the difficulties in achieving good status by some river networks. The main concerns for the water environment within South Lanarkshire are associated with diffuse pollution from historical industries and agriculture. Changes in river flows associated with higher rainfall have increased the potential for flooding, particularly in vulnerable areas.

The level of waste generated per household in South Lanarkshire is steadily reducing across all sectors. At the same time, the level of waste collected for recycling and composting has continually increased and waste disposed of through landfill has decreased. Street litter and fly-tipping is considered an environmental eyesore, affecting people's views on the condition of their local environment. Street cleanliness has significantly improved and South Lanarkshire is currently ranked third, in terms of the Street Cleanliness Score, in Scotland. The incidences of abandoned vehicles reported to the Council remains low.

Data gaps identified in previous State of the Environment Reports continue to reduce but are still evident particularly within environmental issues relating to soils and biodiversity. Although these data gaps prevent a detailed review in those specific areas, it is hoped this will be rectified in future reports through improved monitoring. This iteration of the Report provides additional data and context relating to housing, home energy efficiency and the ongoing focus of promoting environmental awareness and sustainability in our schools.

The data reported within this report will allow detailed Strategic Environmental Assessments to be conducted, inform future policy areas and, therefore, deliver sustainable policies that drive future environmental benefits.

The list of environmental issues within the summary provides an overview on each of the environmental areas covered. Further information on each of the indicators can be obtained by referring to the relevant chapter in the report.

Environmental issue	Overall status		
	Poor	Fair	Good
Population and human health			
Scotland's health is poor by international standards and the health of South Lanarkshire people is generally below the national average, particularly in deprived communities. Although there is a link between environmentally deprived areas and social-economically deprived areas, further work is required to link wellbeing with environmental exposure.			
Biodiversity, fauna and flora			
Most habitats across South Lanarkshire suffer from historical fragmentation and decline. The priority remains to arrest further decline and reinstate habitat connectivity, in order to sustain levels of biodiversity for the future.			
Historic and cultural heritage			
The number of designated historic and built heritage assets remains constant, offering sustained protection. Development pressures remain the largest threat to historical assets but processes are in place to minimise potential negative impacts.			
Material assets and landscape			
Modernisation and redevelopment have improved local assets. Access to recreational space is promoted through cycle and path networks. Monitoring the use of such facilities will promote further improvements.			
Waste			
There has been a considerable reduction in both the generation of waste in the area and the amount disposed of via landfill. At the same time, household waste which is recycled or composted continues to increase. South Lanarkshire achieved the third highest ranking in the national Street Cleanliness Score in 2014/2015.			
Soils			
Soil quality is generally good, with continual investigation and remediation of historically contaminated sites. However, the lack of robust data reduces the ability to assess the sustainability of soil use across the area.			
Air, noise and light			
Air quality in South Lanarkshire is generally good but there are local 'hotspot' areas closely associated with traffic congestion. Monitoring needs to continue to identify and assess these and other potential hotspots. Noise complaints have significantly reduced and two areas achieved Quiet Area status in 2013.			
Water			
Water quality is generally improving with 51% of surface water bodies classified with an overall status of either high or good WFD status. Changes in river flow patterns potentially increase the flooding risk in some areas. The condition of standing water requires to be monitored.			
Climate change			
Greenhouse gas emissions continue to decrease in South Lanarkshire and are considerably below the national average. Household energy consumption has also decreased but remains above the Scottish average. The area's renewable capacity continues to increase significantly.			
Transport			
The condition of the road network is improving due to long-term maintenance investment and walking and cycling networks continue to be expanded. Continued focus is required to facilitate shifts in transport modes to more sustainable forms.			

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3. Historic and cultural heritage
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Introduction

This is the fourth biennial report on the different aspects of South Lanarkshire's environment. Prepared by South Lanarkshire Council, the report uses the most recent data available from a number of internal and external sources. The data is presented to provide, where possible, time trends to assess the overall condition of the area's environment, with narrative providing a brief description of the main environmental issues. The report extends on the initial baseline developed in 2009, provides information on the current state of South Lanarkshire's environment and the progress being made towards a sustainable South Lanarkshire.

Background

The report provides data across a range of environmental issues, allowing individual indicators to be monitored and reported against. It therefore provides an ideal mechanism for monitoring the implementation of the Council's strategies, policies, plans and programmes, identifying the potential impacts these have on the local environment. The environmental issues covered in the report represent areas considered important for the Strategic Environmental Assessment (SEA) of strategies, policies, plans and programmes as set out in the Environmental Assessment (Scotland) Act 2005 (referred to as the SEA Act), and indicators include those identified within the South Lanarkshire Single Outcome Agreement.

Strategic Environmental Assessment

Scotland implemented the requirements of the European Council SEA Directive (2001/42/EC) through the Environmental Assessment (Scotland) Act 2005. The SEA Act requires the Council to undertake a Strategic Environmental Assessment on a wide range of plans to ensure that all aspects of the environment are considered during the decision-making and plan-making processes.

'SEA is a means to judge the likely impact of a public plan on the environment and to seek ways to minimise that effect, if it is likely to be significant. SEA therefore aims to offer greater protection to the environment by ensuring public bodies and those organisations preparing plans of a 'public character' consider and address the likely significant environmental effects'.
SEA Guidance, The Scottish Government, 2013

The data presented in this report provides the environmental baseline for identifying local issues and provides an overview of environmental conditions. This allows individual policy areas to be appraised against locally identified environmental issues. The use of indicators and the analysis of the trends within, and across the datasets provide a monitoring mechanism which enables the Council to monitor the environmental consequences of individual plans.

Single Outcome Agreement

The 2007 Concordat between CoSLA and the Scottish Government sealed the development of a strategic approach to achieving shared outcomes between national and local governments through a Single Outcome Agreement (SOA).

The Scottish Government's single overarching purpose is 'to focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth'. **National Performance Framework**

The Single Outcome Agreement for South Lanarkshire has been developed locally in the context of the agreed South Lanarkshire Community Plan, 'Stronger Together'. The SOA reaffirms the commitment of a partnership approach in delivering the shared duties under the Local Government in Scotland Act, 2003 in respect of community planning, best value, equalities and sustainable development.

Many of the challenges and opportunities facing South Lanarkshire and its communities can only be delivered through a longer-term approach. The Single Outcome Agreement, therefore, seeks to deliver improvements in those areas of activity seen as presenting the greatest challenges and opportunities. This report can be used to identify appropriate environmental challenges facing South Lanarkshire, reflecting the environmentally-based 'National Indicators'. It, therefore, provides a means of reporting on information covered within part the Single Outcome Agreement. The Council's other reports EASL (Economic Audit of South Lanarkshire) and HASSSL (Health and Social Situation in South Lanarkshire) provide information covering the economic and social indicators.

Structure and purpose of the report

The report is structured around chapters which consider the environmental issues that affect South Lanarkshire. These reflect the environmental factors within the SEA process as well as transport. These cover all the relevant aspects of the environmental baseline that support the monitoring and environmental appraisal of local issues within SEAs and Council plans, policies and strategies. The individual chapters are:

- Chapter 1: Population and human health
- Chapter 2: Biodiversity, fauna and flora
- Chapter 3: Historic and cultural heritage
- Chapter 4: Material assets and landscape
- Chapter 5: Waste
- Chapter 6: Soil
- Chapter 7: Air, noise and light
- Chapter 8: Water
- Chapter 9: Climate change
- Chapter 10: Transport

Data in the report is primarily from information held within the Council. Further information has been accessed from the Scottish Government and other agencies, including the Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH), Historic Environment Scotland (HES) and Scottish Passenger Transport (SPT). The data presented is the most recent available in order to provide a clear baseline assessment of the state of South Lanarkshire's environment for the period covered by this report.

South Lanarkshire area

South Lanarkshire spans through central and southern Scotland, straddling the upper reaches of the River Clyde from the City of Glasgow boundary extending into the Southern Uplands. Covering 1,772 square kilometres, South Lanarkshire is the eleventh largest authority area in Scotland and with an estimated population of 315,360 people is the fifth largest population-based local authority in Scotland.

South Lanarkshire's environment is diverse, ranging from the more urbanised landscape in the north through to a mixture of rolling farmland and river valleys and down to the southern fringes dominated by the Lowther hills. This diverse mix of urban and rural environments covers four main areas:

- Clydesdale
- East Kilbride
- Hamilton
- Cambuslang and Rutherglen.

The major settlements are in the north of the area and include the former county town of Hamilton, the 'new town' of East Kilbride, the Royal Burgh of Rutherglen and the towns of Cambuslang and Blantyre. Historical market towns include Lanark and Strathaven. There are a number of historic villages including Douglas and Biggar and former mining settlements such as Forth and Carluke.

1 Population and human health

SEA objectives that relate to human health

- To protect and sustain human health.
- To minimise any detrimental impact of activity on human health.

Human health depends on a number of environmental factors, including access to services such as health, education, safety, access to good quality outdoor recreational facilities and a high quality environment, with good quality air, soil and water. Adequately heated and ventilated homes also support good health.

‘Equally Well’, along with the ‘Early Years Framework’ and ‘Achieving Our Potential’ set out the Scottish Government’s approach to tackling the major and intractable social problems that affect the people of Scotland. These three social policy frameworks share a commitment to tackling inequality and promoting equality. The Scottish Government identified tackling health inequalities and increasing physical activity as priorities to be included in local Single Outcome Agreements. This reflects the recognition that the health of people in Scotland is not as good as the majority of countries within the European Union and is a key driver for the Ministerial Taskforce on Health Inequalities which was reconvened in 2012.

South Lanarkshire is one of Scotland's most diverse areas. It has a population of about 315,360 and covers 1,772 square kilometres of land. It consists of heavily populated urban areas to the north and an extensive rural area to the south and west. Many parts of the area experience an excellent quality of life with good employment prospects, high standards of health care and low levels of crime. However, some areas of South Lanarkshire bear testimony to the legacy of heavy industrialisation which has impacted on the physical, social and economic environment. There are pockets of serious deprivation within both urban and rural areas where people may experience disadvantage and encounter problems associated with low income, poor health, low educational attainment, lack of access to learning opportunities and employment and low expectations.

The South Lanarkshire Community Planning Partnership agreed a refresh of the South Lanarkshire Community Plan ‘Stronger Together’ in 2013. A key aim of the Partnership is to improve health and tackle inequalities.

‘To improve the quality of life for all in South Lanarkshire by ensuring equal access to opportunities and to services that meet people’s needs’.

South Lanarkshire Community Plan ‘Stronger Together’, Vision (page 11)

Actions to improve health and tackle health inequalities are co-ordinated through a Partnership Improvement Plan (PIP) for health, social care and wellbeing. This PIP informs the South Lanarkshire Single Outcome Agreement and includes priorities to address issues relating to health behaviours, environmental impacts on health and wellbeing and actions to prevent ill health.

Priority areas include:

- Reducing mortality rates for people aged under 75 years.
- Healthy weight for children and adults.
- Promoting physical activity.
- Promoting health and wellbeing in the early years.
- Reducing misuse of alcohol.
- Supporting active ageing.
- Smoking cessation.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

The Current status is shown by the following colours:

G Good	F Fair
P Poor	Limited data

The trend direction is shown with the following arrows:

↑	Improving
↔	No change
↓	Deteriorating

Note: The most recent data available was use in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
General Population	F	↑	Population – The area’s population is growing at a faster rate than the Scottish average, with the proportion of older population showing the greatest increase. However, the population of people aged less than 25 years is declining.
	G	↑	Life Expectancy (male) – Life expectancy for men has increased over recent years but at a slower rate than the Scottish average.
	G	↑	Life Expectancy (female) – Life expectancy for women has increased in recent years, and is just below the Scottish average.
Health	P	↔	Coronary heart disease – Remains a major source of early or premature deaths. The South Lanarkshire mortality ratio remains slightly higher than the Scottish average.
	P	↔	Cancer – Continues to be the main cause of death for those aged less than 75 years. Death rates are slightly higher than the Scottish average.
	P	↔	Stroke – Remains a major cause of death for those aged less than 75 years. The standard mortality ratio in South Lanarkshire has become closer to the Scottish average since the last report.
Alcohol Related Deaths	P	↑	Although relatively high compared to Scotland as a whole, the number of alcohol related deaths has slowly reduced in recent years.
Healthy Lifestyles	F	↑	Lifestyle – There has been a significant increase in the number of residents who report that their health is very or quite good, although this varies widely across communities. No new data is available.
	F	↔	Environmental Deprivation – There is a relationship between those areas suffering from environmental deprivation and low SIMD score. No new data is available.
	F	↔	Environmental Recreation – Although the rate of South Lanarkshire residents undertaking recreation activities is low, there has been marked improvement since the last report. It no longer has the lowest rate of participation.

Baseline situation

Life expectancy is increasing in South Lanarkshire but remains slightly below the Scottish average. Life expectancy for men has declined relative to the Scottish average. South Lanarkshire’s health status is generally below the Scottish average for many key indicators of health. Cancer, coronary heart disease and stroke account for the majority of deaths in South Lanarkshire. The number of deaths from alcoholic liver disease has slightly reduced, mirroring the national picture.

Similar to the national pattern there are significant differences between communities across South Lanarkshire in terms of health outcomes. These health inequalities pose a major challenge for all community planning partners as we look to improve health both at population level and within our more deprived communities. Within these communities, many people are physically disadvantaged with reduced physical activity. The local environment plays a key role in contributing to the overall wellbeing of the population. A well presented environment offers a wide range of activities and potential to improve the overall character and health of the area.

1.1 General population

According to the 2014 mid year estimate, South Lanarkshire is home to about **315,360 people**, a population which has grown over the past 20 years. This has been faster than the Scottish average and is forecast to increase to **320,466** by **2024** and **322,141** by **2034**.¹ This overall growth masks proportionally higher growth rates for those aged over 70 and 80, and a decline in the population aged less than 25.

In the period since 2001 - 2003, life expectancy at birth has increased from 74.0 to **76.5 years** for men and from 78.5 to **80.7 years** for women. This compares to Scottish life expectancy of 76.9 (73.5, 2001 - 2003) for men and 81.0 (78.8, 2001 - 2003) for women².

Density of habitation

Overall, South Lanarkshire has a population density of **178** persons per square kilometres. However, this varies considerably across the Council from a high of **2,760** persons per square kilometres in Rutherglen to **18** persons per square kilometres in Clydesdale east³.

Ethnic composition

Of the population of South Lanarkshire on Census Day, (27th March 2011), the 7,205 people from minority ethnic communities accounted for **2.3%** of the total. This compares to 4% in Scotland as a whole. In South Lanarkshire, **91.6%** reported themselves as White Scottish, above the Scottish average of 87.4%. South Lanarkshire has relatively more of its population in the White Scottish and African: Non Scottish/British population that Scotland as a whole and significantly less from the Polish community and the African: Scottish or British and Arab communities. Of South Lanarkshire's minority ethnic community population, 72% were from Asian ethnic backgrounds, compared to only 67% in Scotland as a whole. Those from minority ethnic communities in South Lanarkshire tended to be significantly younger than those from the main white ethnic communities – only 4.2% were aged 65 or over, compared to 17% from the white ethnic communities. Unlike the overall situation, where the female population was greater than the male, for those from minority ethnic communities in South Lanarkshire, there were more men than women.

Economic activity and land use

Employment in South Lanarkshire was dominated by a few sectors in 2012, all in the 'services' industry, with health and social work accounting for just under a fifth of all jobs. Compared to Scotland as a whole, manufacturing, mining and quarrying and utilities, construction and distribution are relatively more important here as sources of employment and business services, education and banking, insurance, financial services are less important. Just under two-thirds of jobs were full time with just over a third being part time and just over 2% being sole traders. Between 2011 and 2012, all employment types fell, full and part time employment by 3.3% and 8.8%, respectively. Sole traders fell by 22.5%. Hotels and restaurants was the only sector where the number of sole traders increased. Part time employment only increased in three service industries and full time employment in agriculture, forestry and fishing, manufacturing, banking, financial services and other services. The latter was the only sector to see both full time and part time employment increase.

The employment forecasts show that the number of jobs in South Lanarkshire is expected to grow over the 2014 to 2025 period by 7,400 to 140,700, an increase of 5.6%, against an increase of 6.1% over the same period in Scotland as a whole. Both full time and part time employment is forecast to grow, with greater increases in full time employment, but self employment is forecast to significantly decline. In relation to gender, the forecasts indicate that, by 2021, for the first time ever, more women will hold jobs in South Lanarkshire than men and that this gap will increase by 2025. Even so, men will predominately hold full time jobs, while a significant proportion of women will be in part time jobs. Although the forecasts for an increase of 7,400 in South Lanarkshire jobs over the 2014 to 2025 period, it is estimated that an additional 53,000 job opportunities will be

¹ National Records of Scotland, Population projections by administrative area, based on 2014 mid year estimates

² National Records of Scotland, Life expectancy for areas in Scotland 2001 - 2003

³ National Records of Scotland, 2013

generated through retirements and people progressing into higher skilled jobs and creating vacancies. This will create significant numbers of job opportunities in relation to managerial, associate professional and technician and selling occupations but a decline in elementary skilled job opportunities. At an industry level, in absolute terms, the largest increase over the 2014 to 2025 period is forecast for health, up by 1,600, followed by increases of 1,500 in residential care and social work, of 1,300 in construction, of 1,100 in business support services and of 800 for financial services and insurance.

The largest absolute falls are forecast for public administration and defence, down by 700, in other manufacturing (which includes Rolls Royce), down by 500, with fall of 200 in metal and metal products, food and drink manufacturing, education, and electricity and gas industries. Over the 2014 to 2025 period, the largest increase in employment in South Lanarkshire is forecast to be in professional occupations, up 4,000, with 3,300 more working in managerial, self employed and senior officer occupations and 3,000 more in associate professional and technical occupations. In percentage terms, the largest rises are 47.6% for professional occupations, 14.5% in managerial, senior officer and self employment occupations and 13.8% for associate professional and technical occupations. A total of 3,300 jobs are expected to be lost in skilled trades occupations in South Lanarkshire over this period, with a decline of 2,400 in the numbers in process, plant and machine operative job and of 500 in administrative, clerical and secretarial occupations. These represent declines of 22.9%, 16.4% and 3.7%, respectively.

In 2012/2013, the number of people who were economically active (the proportion of people of working age who are in, actively seeking or available for work), aged 16 years and over in South Lanarkshire was estimated at 163,300, the highest number ever recorded since 2004/2005. This represented 64.7% of the total 16 years and over population of South Lanarkshire and the second highest rate recorded since 2004/2005, and the highest since 2007/2008. This rate has now risen for three consecutive years. Of those aged 16 years and over who were economically active, 82,700 (50.7%) were men and 80,500 were women (49.3%).

The agricultural workforce has been falling with recent movement away from employing workers full time towards part time and more casual and seasonal workers. Family involvement has become more part time and more hired and over the longer term, the number of full time farmers has declined significantly. The most recent figures show particular growth in casual and seasonal employment and part time hired employment.

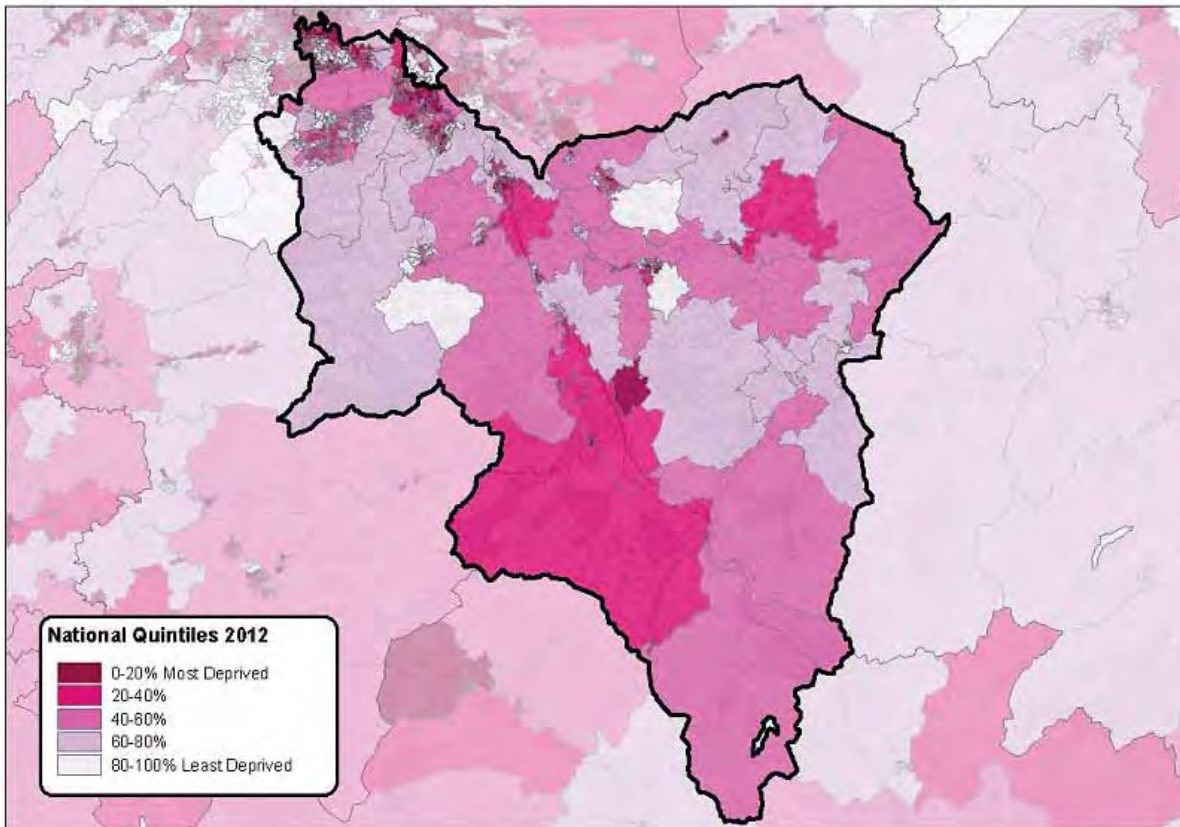
1.2 Deprivation and health

There are clear links between poor health and poverty and deprivation. Life expectancy is lower and people in deprived areas are more likely to die from coronary heart disease, stroke and cancer than those in more affluent areas. Some of this is linked to lifestyle as people in deprived circumstances are more likely to smoke, drink more than the recommended levels of alcohol, have a diet high in fat and low in fruit and vegetables and to take low levels of exercise. However, this alone does not account for the differences in either morbidity or mortality in more deprived areas.

Deprivation is measured nationally using the Scottish Index of Multiple Deprivation (SIMD). The most recent SIMD produced in 2012 (**Figure 1.1**) analyses deprivation using indicators across seven key domains:

- Employment
- Income
- Education, skills and training
- Health and disability
- Housing
- Access to services
- Crime.

Figure 1.1: National ranking on the SIMD of South Lanarkshire data zones, 2012



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Key facts regarding South Lanarkshire:

- 6,505 data zones have been identified in Scotland of which 398 (6.1%) are in South Lanarkshire.
- SIMD 2012 shows that **53** data zones in South Lanarkshire are among the 15% most deprived in Scotland. The majority of these are in the Hamilton area (15), followed by Rutherglen (13), Cambuslang and Larkhall (7 each) followed by Blantyre (6), Lesmahagow (2), Carluke (1), Lanark (1) and Stonehouse (1). This accounts for **5.4%** of the worst 15% data zones in Scotland, a slight fall since 2009 of 0.5%.
- South Lanarkshire has seen a relatively large decrease in its share of datazones in the 15% most deprived areas in Scotland between SIMD 2009 and SIMD 2012.

Although environmental quality is not used as a measure, elements are implicit in a number of these domains, for example, housing, access to services and health.

While it may be possible to demonstrate causal relationships between distinct elements of the environment, for example, air quality and health, there is a growing bank of evidence on the ways in which the wider social, economic and physical environment impacts on health. These in turn are linked to multiple-deprivation as there is a direct correlation to multiple deprivation and poorer health status and health outcomes throughout life. In recent years there has been a more pronounced interest in health inequalities, that is, the difference within and between communities in health and health outcomes. The stresses of everyday life associated with poverty and poor environments have a lasting impact on the body's physiology which can result in poorer health and earlier death than those living in more affluent circumstances. This relationship between environment and health is recognised by the national Healthy Environment Network set up to examine ways in which health protection, environmental concerns and health improvement can work together to bring about improvements in health outcomes for individuals in our communities.

This has led to the development of what is being termed 'ecological public health'. This term has been used to characterise an era underpinned by the paradigm that, 'when it comes to health and wellbeing, everything matters'.⁴

Work initiated by the Chief Medical Officer and the Glasgow Centre for Public Health examined the relationship between socio-economic status on health over the life course. The evidence was clear that poorer health is more common in disadvantaged members of the community and this is consistent on an international basis. Part of this can be associated with lifestyle choices such as unhealthy diet, lack of exercise, tobacco and drug use and has become strongly associated with social disadvantage. However, this does not explain all of the differences in health outcomes.

'Today's issues (around place) are less about toxic or infectious threats but rather the capacity of ugly, scarred, threatening environments to foster hopelessness and stress, discourage active healthy lives and healthy behaviours' **Sir Harry Burns, former Chief Medical Officer for Scotland**

Social inequality itself is consistently associated with higher levels of mortality regardless of the measure of social position used and even after controlling for other risk factors. Moreover, it also appeared that the risk of mortality builds up over the years and that exposure to risk factors may even occur many years before the development of the outcome. Studies note the importance of childhood as a predictor for health outcomes in adulthood⁵. The Glasgow study built on this research but focussed on the ways in which the body changed as a result of stresses inherent in the wider environments in which people lived, particularly those that resulted in higher risk factors for specific conditions and earlier death.

The study further reinforces the evidence that people in poorer communities have poorer health than people who live in more affluent areas. It shows that the impact of early life circumstances and low socio-economic status in childhood on the accumulation and development of risk factors for poor health outcomes as an adult. This was seen in terms of mortality from coronary heart disease and a number of tests for cognitive development. A main conclusion of the report is the need to recognise the conditions in which people are born, grow, live, work and age are fundamental to understanding the causes of health inequalities and how we can address them.

1.3 Health

Death rates

In Scotland, coronary heart disease, cancer and stroke continue to affect and shorten the lives of many people. South Lanarkshire's profile echoes the national picture. The most recent figures indicate that hospital admissions for heart disease continue to be higher than the national average. Within South Lanarkshire there are also differences in death rates between different areas. In terms of death rates for those under 75 years, South Lanarkshire is slightly above the national average per 10,000 for coronary heart disease, stroke, cancers and deaths from all causes. This is shown in **Figure 1.2**.

In 2013, the proportion of all deaths in South Lanarkshire caused by coronary heart disease or stroke mirrored that nationally at 16% and 8%, respectively. However, the proportion of all deaths in South Lanarkshire caused by cancer was lower at 28% compared to Scotland overall (30%).

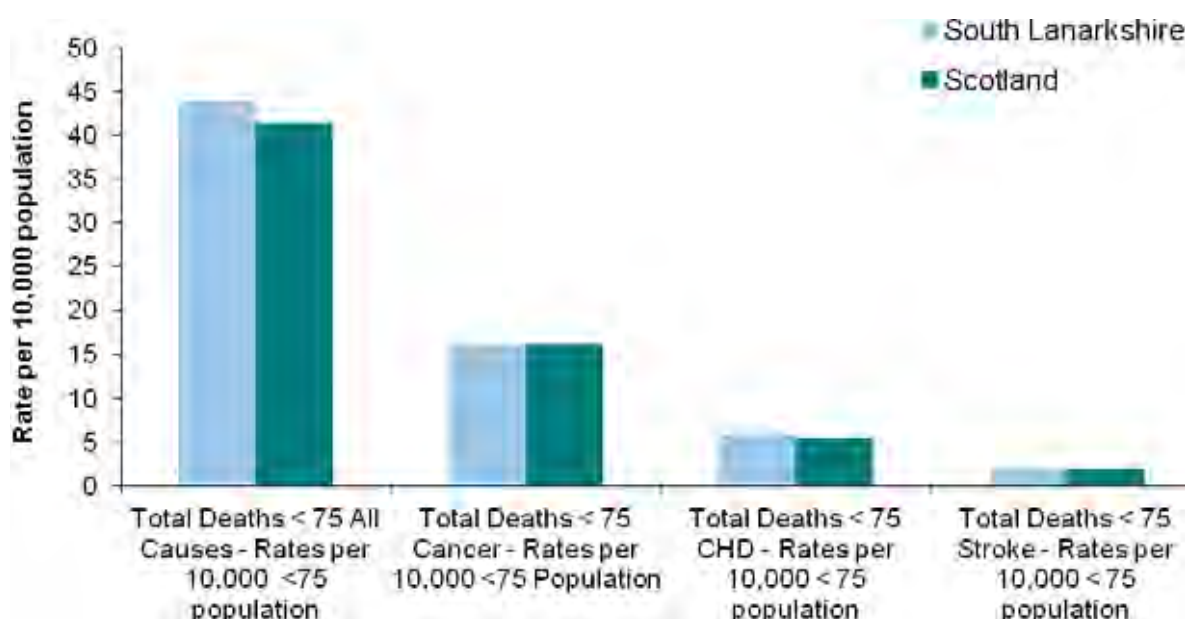
When used as a proxy measure for poor health, death rates for those less than 75 years of age are taken rather than those for all ages. This is because death for people aged less than 75 is taken to

⁴ Morris, G.M., "Ecological public health and climate change policy", Perspectives in Public Health, Vol. 130, No. 1, 34-40 (2010)

⁵ Glasgow Centre for Population Health,
http://www.gcph.co.uk/assets/0000/0406/GCPH_BP_8_concepts_web.pdf

be early or premature death and a sign of poorer health during life. Despite improvements in health over recent years, Scotland continues to have higher than average death rates compared with the rest of the UK and Europe.

Figure 1.2: Death rates for less than 75 years of age per 10,000 population (2013)



Source: National Records for Scotland

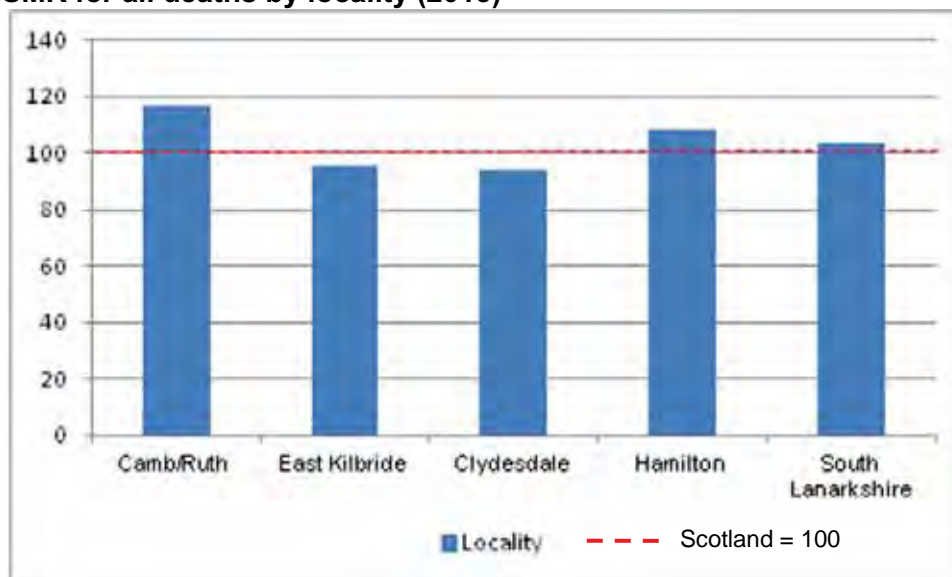
Inequalities across South Lanarkshire

Within South Lanarkshire differences in mortality rates are also evident. These differences are generally associated with deprivation and poverty. The Standardised Mortality Ratio (SMR) for the four Community Health Partnership localities in South Lanarkshire is shown in **Table 1.1** and **Figure 1.3**. The SMR for both Cambuslang/Rutherglen and Hamilton localities is significantly higher than both the South Lanarkshire and Scottish ratios. However, the SMR for both East Kilbride and Clydesdale areas is significantly lower than both the local authority and national ratios.

Table 1.1: Standardised Mortality Ratio by locality (2013)

	Cambuslang/ Rutherglen	East Kilbride	Clydesdale	Hamilton	South Lanarkshire
Population (est)	58,934	88,437	61,566	105,913	314,850
Deaths (All causes)	671	894	643	1,121	3,329
SMR	116.9	95.4	94.5	108.5	103.2
SMR Scotland = 100					

Figure 1.3: SMR for all deaths by locality (2013)



Source: NHS Lanarkshire

Alcohol related deaths

The number of alcohol related deaths in South Lanarkshire has slowly reduced since 2005 and has remained fairly static in the five years between 2009 – 2013. This is reflected in **Table 1.2** which highlights that the proportion of such deaths in South Lanarkshire relative to the national total also remains fairly consistent.

Table 1.2: Alcohol related deaths in South Lanarkshire

Year	South Lanarkshire	Scotland	% Scotland
2004	100	1,478	6.8
2005	102	1,513	6.7
2006	88	1,546	5.7
2007	71	1,399	5.1
2008	83	1,411	5.9
2009	75	1,282	5.9
2010	72	1,318	5.5
2011	77	1,247	6.2
2012	78	1,080	7.2
2013	67	1,100	6.1

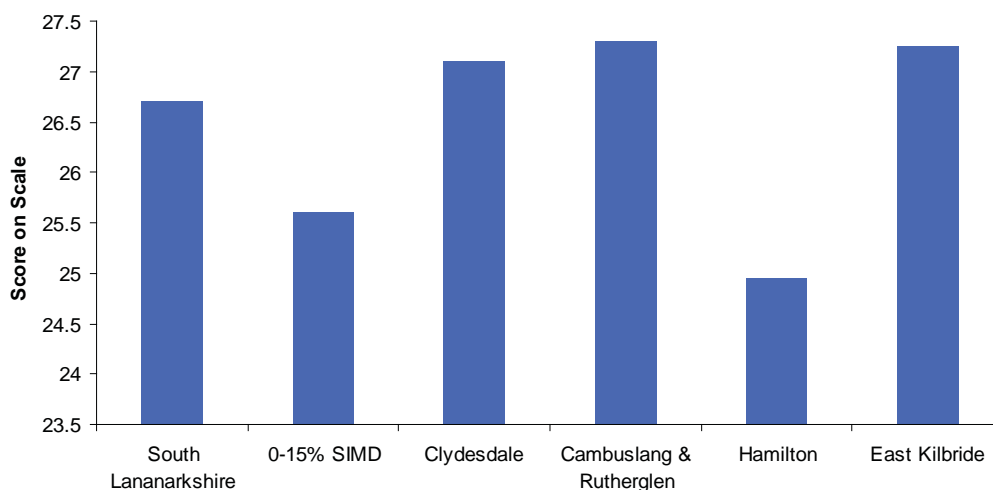
Source: National Records of Scotland

Mental health

Mental health is relatively difficult to assess at a population level. Surveys which include mental health questions generally use General Health Questionnaire 12 to assess whether someone suffers from mental illness but it is recognised that mental illness and mental health are not the same thing. A measure (WEMWEBS scale), developed by the Universities of Edinburgh and Warwick, working with Health Scotland focuses on wellbeing rather than mental illness and is the first of its kind to do this. It was included in the Scottish Health Survey from 2009 and local areas were given the opportunity to boost their samples to enable them to collect more detailed data for areas smaller than health boards.

The shorter WEMWEBS scale was used in the 2010 South Lanarkshire Residents' survey (**Figure 1.4**). It was not possible to get comparable Scottish data against which to measure the South Lanarkshire data, however, it provides a valuable baseline and enables an internal comparison for wellbeing across our communities.

Figure 1.4: Mental and emotional wellbeing (WEMWEBS Scale), 2008



In the meantime, prescribing levels for anti-depressant drugs is generally taken as a proxy measure for good mental health. Data is generally at health board level and NHS Lanarkshire has historically had higher than average prescribing rates for these drugs. The NHS has a target to reduce the level of prescribing these treatments, focusing instead on alternative methods to support people with mental health problems into recovery.

The South Lanarkshire Partnership Improvement Plan (PIP) for health, social care and wellbeing identifies the following information:

- In South Lanarkshire, **1,081** people with a learning disability were in receipt of multi agency support in 2013. This was a reduction from 1,219 in 2011 and 1,260 in 2012. This reflects a fluctuating demand for these services.
- There has been an increase in the number of prescriptions for drugs to deal with anxiety and depression in South Lanarkshire. Indeed, this is currently at its highest recorded level. It is also increasing faster than Scotland as a whole. In 1999/2000, a total of 341,145 items were prescribed, compared with 440,967 in 2005/2006 and **562,297** in 2012/2013.
- The latest local data available from the Residents Survey indicate that **10%** of males and **5%** of females in the South Lanarkshire area continue to drink alcohol above the recommended levels.
- In 2011/2012, **2,080** inpatients were discharged with an alcohol related diagnosis compared to 1,010 in 2000/2001, highlighting a deteriorating trend.
- In 2011, there was an increase in the number of alcohol related deaths by **6.9%** over the 2010 figures, while the national position witnessed a 5.4% fall in the same period.
- Drug related discharges have been falling faster in South Lanarkshire than in Scotland. However, they did reach their highest recorded level in 2010/2011, with **200** people discharged with a drug misuse issue.
- In 2011, there were **34** drug misuse deaths in South Lanarkshire, an increase from 26 deaths in 2010.

1.4 Healthy lifestyles

Lifestyle issues such as physical activity, smoking and alcohol consumption are more difficult to assess in a reliable way. Our main sources of data come from a range of surveys such as the South Lanarkshire Residents' Survey, the Scottish Health Survey and the Scottish Household Survey. Self reported behaviours in such surveys tend to exaggerate positive behaviour and under-report behaviour which we know is not good for us. For example, recent work by the Scottish Public Health Observatory estimated that alcohol consumption tends to be underestimated by at least 50%. This is partially due to increases in the alcohol content in drinks and larger measures in pubs and restaurants but is also due to a natural tendency to downplay unhealthy activities.

National surveys also tend to provide results at Council level only which means we cannot determine differences in behaviour between small areas within the Council.

The most recent Residents' Survey (2010) provides data for South Lanarkshire as a whole, the four community areas and the most deprived data zones. **Table 1.3** summarises the headline findings for the main health areas covered in the survey.

Table 1.3: Headline findings from the Residents Survey, 2010

	South Lanarkshire	0-15% SIMD	Clydesdale	Cambuslang/Rutherglen	Hamilton	East Kilbride
Health in last 12 months (very and quite good)	79%	67%	79%	74%	80%	84%
Long-standing health problem, illness or disability (anyone in household)	34%	43%	34%	43%	31%	27%
Smoking (smoking every day)	26%	41%	28%	29%	26%	20%
Physical activity (at recommended level 6 months plus)	62%	57%	77%	58%	44%	67%
Fruit and vegetable consumption (recommended level or above)	37%	31%	39%	31%	34%	44%
Alcohol consumption (above recommended limits)*	10% m 5% f	17% m 5% f	9% m 4% f	13% m 6% f	4% m 1% f	13% m 6% f
Caring responsibilities – new measure % stating yes	14%	11%	16%	14%	10%	17%

*Based on alcohol consumption over the previous week

Source: South Lanarkshire Council

In terms of their health in the last twelve months, there has been a significant increase in the proportion of people completing the survey who advise that their health was very good or quite good since the previous survey. In South Lanarkshire overall this rose from 53% to 79%, with the greatest increases being in Clydesdale (+29%) and East Kilbride (+28%).

The survey also provides information for a number of smaller areas, some of which deal with relatively small samples sizes. However, it gives an indication of the variation in health related behaviours across the Council area. The lowest and highest scores are summarised in **Table 1.4**.

Table 1.4: Residents Survey – smaller areas

	Best scoring small area	Worst scoring small area
Health in last 12 months (very and quite good)	Whitehill 59%	Burnhill, 30%
Long-standing health problem, illness or disability (anyone in household)	Whitlawburn, 24%	Burnhill and Cairns, 55%
Smoking (smoking every day)	Whitehill, 27%	Fernhill, 42%
Physical activity (at recommended level 6 months plus)	Strutherhill, 83%	Whitehill 14%
Fruit and vegetable consumption (at recommended level or above)	Strutherhill and Cathkin, 39%	Rural Cluster, 20%
Alcohol consumption (above recommended limits) (based on alcohol consumption over the previous week)	Strutherhill, 6% m Whitlawburn, 0% f	Burnhill, 26% m Priestfield 9% f

Source: South Lanarkshire Council

1.5 Environmental deprivation

The evidence linking environmental improvements to improved health outcomes is mixed. For example, there is limited evidence to demonstrate a causal relationship between improvements to quality housing and illness such as asthma. However, other evidence is more robust. The Healthy Environment Network noted clear evidence between exposure to elements such as pollutants from industrial or transport sources, tobacco smoke, allergenic agents and the level of household warmth to coronary heart disease, stroke and some cancers. Work on mental health and wellbeing also demonstrates the relationship between the natural environment and positive mental health.

Public Attitudes and Environmental Justice in Scotland (2005), found 'a relationship between environmental incivilities and health behaviour' especially smoking habits.

The following environmental issues may have an impact on human health:

- Environmental Incivilities, such as noise, litter and rubbish, and dog fouling, leading to environmental injustice.
- Noise, dust and nuisance elements relating to development or improvement work.
- Availability of fuel as a result of fuel poverty or rural isolation which can increase the risk of heart attack and stroke especially among older people.
- Fear of crime and wider community safety issues, including home safety.
- Access to greenspace and the quality of that greenspace, safe areas to play, walking and cycling paths for commuting and leisure and the need to feel safe while enjoying, for example, country areas, urban parks and woodlands.
- The volume of traffic and associated noise and pollutants.
- Access to services, including public transport, medical centres, shops, an issue for rural areas and new urban/sub-urban developments.

In 2010, South Lanarkshire Partnership commissioned work to investigate possible links between environmental deprivation, health and socio-economic deprivation in South Lanarkshire. This was based on robust, regularly updated data sources and dealt with issues considered to have an impact at the population level. This resulted in the South Lanarkshire Index of Multiple Environmental Deprivation (SLIMED) based on a single domain using four indicators:

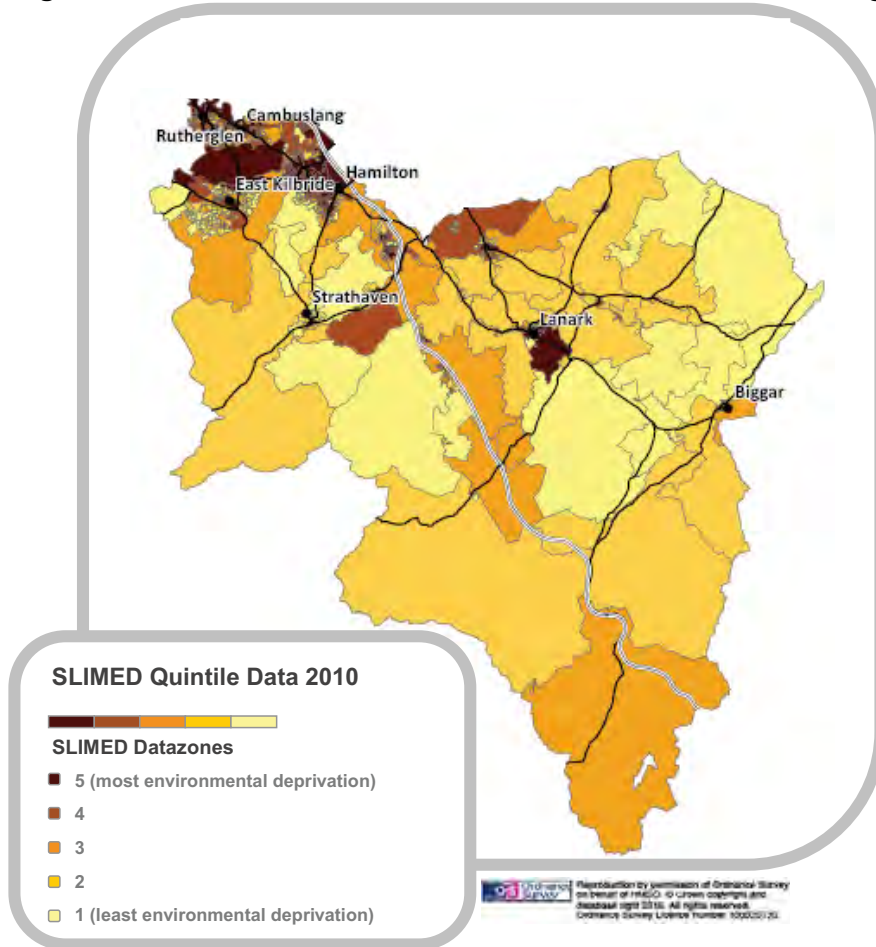
- PM₁₀ (air quality measure)
- Noise (within 100m of a major road or rail network)
- Undesirable land uses (100m zone. Included contaminated land, mining activities, industrial facilities, derelict land)
- Crime rates.

SLIMED was created using the datazone geography used for the SIMD, the main index of socio-economic deprivation widely used to inform regeneration activity (**Figure 1.5**). Once SLIMED was complete, the relationship between environmental deprivation and health outcomes was examined using a number of health related indicators.

The findings indicated a strong relationship between environmental and socio-economic deprivation. The work also highlighted the difficulty of developing indices which adequately cover both rural and urban areas. Many indicators, particularly those relating to protective factors, have an urban bias and are not suitable for rural areas. This raises more general issues about the way policy is developed to tackle issues such as the promotion of physical activity and how best to tackle obesity. Further questions are raised as to whether the policies developed should support different approaches tailored towards rural communities and their needs.

There appeared to be some links between environmental deprivation and health although these links were weak and should be treated with caution. However, the work helped to inform a local debate about the interrelationship between the spaces in which we live and the impact these have on the people who live there, particularly in terms of their health and wellbeing. This work has not since been repeated.

Figure 1.5: South Lanarkshire datazones local SLIMED ranking



Source: South Lanarkshire Council

1.6 Environmental recreation

Recreation has many health benefits, with recreational therapy taking advantage of this through care of the elderly, the disabled, or people with chronic diseases. Physical activity through recreational activities is important to reduce obesity and other health risks. Recreation is an essential part of human life and finds many different forms which are shaped naturally by individual interests but also by the environment we live in. Therefore public space such as parks and the correct level of access to the wider countryside are essential for many recreational activities.

Recreation is considered as an activity of leisure, which is a form of discretionary time for individuals and therefore the ‘need to do something for recreation’ is an essential element of human biology and psychology, and is often pursued for enjoyment, amusement, or pleasure.

Scottish Natural Heritage measures the levels of participation in walking and other outdoor recreational activities through the Scottish Recreation Survey, now known as the Scotland's People and Nature Survey (SPANS). The survey was last undertaken in 2013 and will be repeated every three years until 2022. Unfortunately, data is not available to local authority level.

The Survey found that 82% of the Scottish adult population had visited the outdoors for recreation in the twelve months prior to being interviewed. This was an increase from the proportion reported in the 2012 Scottish Recreation Survey.

The estimated volume of visits to the outdoors taken by adults in Scotland between March 2013 and February 2014 was 395.8 million, the highest annual figure recorded since 2006. Reasons

given for visiting the outdoors included health and exercise (43%), exercising a dog (42%), to relax or unwind (27%) and to enjoy the fresh air (25%). The main reasons cited for not visiting the outdoors were the lack of time (36%) and poor health (23%).

The Scottish Household Survey indicates that in 2013, in South Lanarkshire, **40%** of respondents said they had visited the outdoors for recreation at least once a week in the previous twelve months. Although this participation rate is lower than the Scottish average (**46%**), it reflects an improvement from previous years when South Lanarkshire had the lowest participation level of all 32 Scottish local authorities. At 2013, the increase in participation levels meant that South Lanarkshire improved its position to joint **25th**, nationally.

2 Biodiversity, fauna and flora

SEA objectives that relate to biodiversity

- To enhance the local biodiversity.
- To protect and promote the favourable conditions of designated and locally important habitats.

Biodiversity plays a key role in the functioning of ecosystems and supports our lives through the provision of crucial resources like fresh air, clean water and food. 'Biological diversity' encompasses all the species of plants, animals, and micro-organisms within an ecosystem, whilst biodiversity is generally used to measure the health of the ecosystem. The individual components that contribute to the diversity of an ecosystem can be subject to a number of pressures and threats, globally and locally, including pollution, fragmentation, land use and changes in climate.

The distribution and diversity of the ecological resource within South Lanarkshire is influenced by the variety in the geography and topography of the area. There are a series of distinct landscape character areas, each with varied and valuable biodiversity assets. Some of these biodiversity assets are internationally important, with others of national or local significance.

The natural environment is an asset which can contribute to the economic growth of South Lanarkshire if it is managed and used in a sustainable manner. Its continuing health and improvement is vital to sustainable economic growth. Many of Scotland's growth sectors, such as tourism and food and drink, depend on the provision of ecosystem services from a high quality natural environment. There are many other less tangible ways in which nature sustains us, contributing to our health, wellbeing, enjoyment, sense of place and our cultural identity.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

G Good

F Fair

↑ Improving

↔ No change

P Poor

□ Limited data

↓ Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Designated areas	F	↔	Not many sites have been surveyed since the previous report. Although there has been some isolated improvement, in general the condition of the designated features remains similar to previous reports.
Local Nature Reserves	G	↑	The Council's Nature Reserve at Langlands Moss is in good condition. Considerable improvement was made to the Reserve in partnership with the Friends of Langlands Moss.
Native woodland	F	↑	Although total native woodland cover is increasing, further work is required to improve connectivity of habitats, expanding native broadleaf woodland cover.
Ancient woodland	F	↔	There is no change with ancient semi natural woodland cover. There is limited data on the overall condition of this habitat.
Peatland	□	□	There is insufficient data on the overall condition of raised and blanket bogs across the area, with only a small number of designated sites recorded as unfavourable.

Baseline situation

South Lanarkshire has a wide range of landscapes and habitats. Although the area is mainly agricultural land, there are pockets of natural and semi natural habitats, including ancient

woodland, peatland and upland moorland. The lack of detailed information on the range of habitats, their condition and the level of fragmentation between such habitats is of concern in determining the overall status of biodiversity within South Lanarkshire. Although fragmentation is detrimental to the connectivity of habitat systems, the main environmental pressures having an adverse affect on biodiversity within the area include the invasion of non-native species and the inappropriate location of urban development or development that is insensitive to the local natural environment. Arguably, the greatest potential pressure on ecosystem function is climate change, with habitat fragmentation restricting the movement of species in response to this. Colonisation by non-native, invasive species is placing further pressure on remaining natural habitats.

The South Lanarkshire Biodiversity Strategy and the Council's Biodiversity Duty Implementation Plan set out targets and actions for a wide range of biodiversity related issues, including biodiversity assets, ecosystems, habitats, species and community engagement.

2.1 Designations

There are many different designations for preserving ecologically important habitats and species across South Lanarkshire (**Figure 2.1**), ranging from international to local designated sites. Internationally important wetlands are designated under the Ramsar Convention. The European Wild Birds and the Habitats Directives designate sites of importance for birds, designated as Special Protection Areas (SPAs) or sites of importance for other species or habitats, designated as Special Areas of Conservation (SACs) under the EC Habitats Directive. Sites of Special Scientific Interest (SSSIs) are the main nature conservation designation in Great Britain, whilst locally important sites are designated as Sites of Importance for Nature Conservation (SINC) or Local Nature Reserves (LNR).

Ramsar Sites

Ramsar sites are designated under the terms of the Convention on Wetlands of International Importance (the Ramsar Convention), ratified by the UK Government in 1971. Under this convention, a wetland is considered internationally important if it either regularly holds 1% of the individuals within a bio-geographical population of one species of waterfowl or regularly holds a total of 20,000 waterfowl. There are no designated or proposed Ramsar sites in South Lanarkshire.

Special Protection Areas (SPAs)

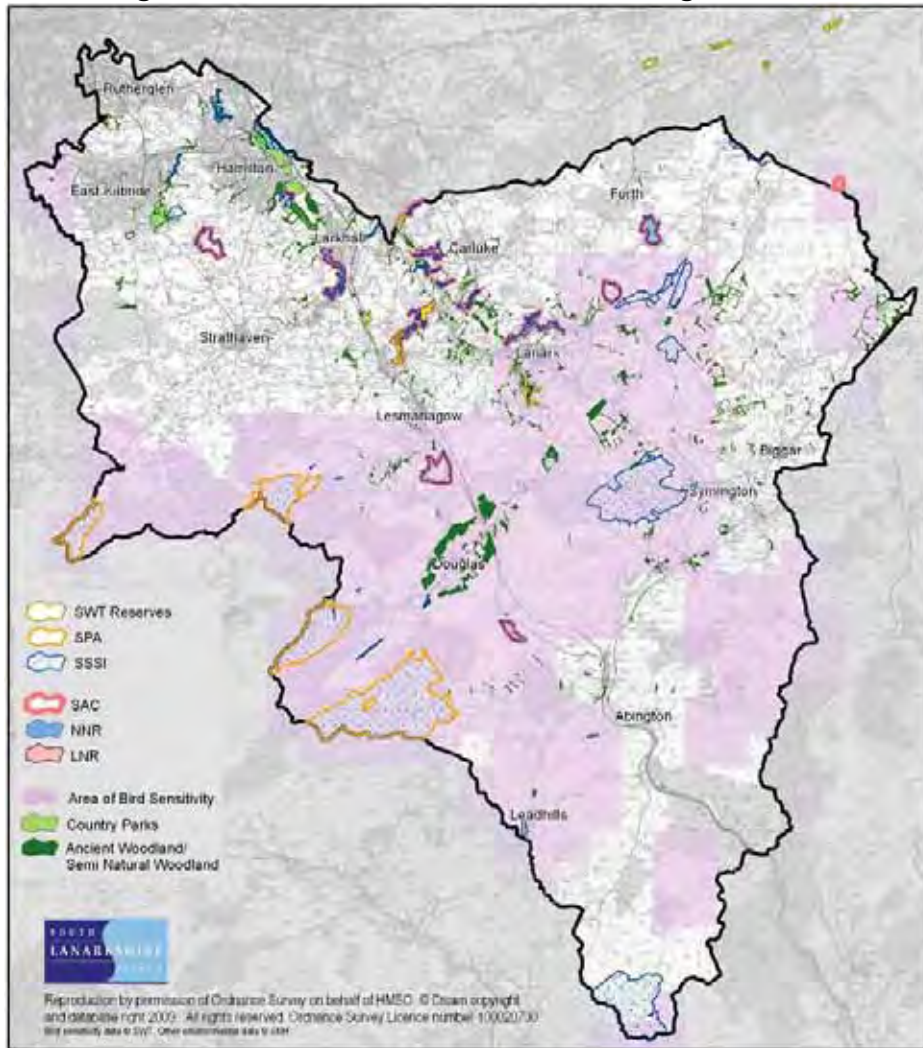
Special Protection Areas are areas classified under Article 4 of the European Directive on the Conservation of Wild Birds, 1979 (Wild Birds Directive). In Great Britain, the designation is underpinned by the SSSI mechanism for terrestrial sites. SPAs are created to safeguard the habitats of migratory and certain particularly threatened species of birds. Along with SACs, they constitute the 'Natura 2000' network of protected areas.

Muirkirk and North Lowther Uplands (26,330 ha)

The SPA is an extensive area of moorland extending south from near Darvel in South Ayrshire to near Kirkconnel in Dumfries and Galloway. Four areas of the SPA lie within South Lanarkshire – south of Glentaggart, west of Glespin, around Logan Reservoir and west of Glengavel Reservoir. It is of outstanding interest for its variety of upland habitats and breeding birds. There are large tracts of blanket bog, wet and dry heaths and upland grasslands which support a rich variety of moorland breeding birds. The SPA has been designated with international importance for its breeding short eared owl, hen harrier, merlin, peregrine and golden plover and its wintering population of hen harriers. The SPA takes in the Muirkirk Uplands Site of Special Scientific Interest (SSSI) and North Lowther Uplands SSSI together with Blood Moss and Slot Burn SSSI, Garpel Water SSSI and Ree Burn and Glenbuck Loch SSSI.

Site Condition: Golden plover (*Pluvialis apricaria*): Favourable Maintained (June 2004)
Hen harrier (*Circus cyaneus*), breeding: Unfavourable Declining (July 2008)
Hen harrier (*Circus cyaneus*, non-breeding): Unfavourable Declining (December 2004)
Merlin (*Falco columbarius*): Unfavourable No change (July 2009)
Peregrine (*Falco peregrinus*): Unfavourable No change (August 2004)
Short-eared owl (*Asio flammeus*): Favourable Maintained (July 1998)

Figure 2.1: Designated nature conservation sites throughout South Lanarkshire



Source: South Lanarkshire Council

Special Areas of Conservation (SACs)

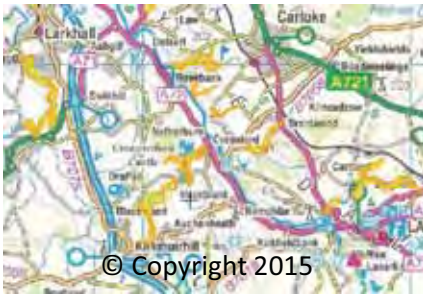
Special Areas of Conservation are areas designated under the European Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (1992), known as the Habitats Directive, set out to protect all forms of wildlife and their habitats. These sites, together with SPAs, are called Natura sites and are internationally important for threatened habitats and species. There are 7 SACs spread out across South Lanarkshire.



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Braehead Moss (122.6ha). This site is designated for supporting extensive areas of Active Raised Bog and areas of degraded bog that has potential for regeneration. The peat bog has arisen from peat developing in two separate basins which have fused. The upper and lower bogs are dominated by hummocks largely formed of Sphagnum spp., including *S. fuscum* and *S. imbricatum*, and are rich in heather *Calluna vulgaris* and cottongrasses *Eriophorum* spp. Soft *S. cuspidatum* hollows also occur.

**Site Condition: Active Raised Bog: Unfavourable Recovering (September 2003)
 Degraded Raised Bog: Favourable Recovered (November 2012)**



Clyde Valley Woods (434.66ha) This SAC is designated as it supports the Annex 1 habitat: Tilio-Acerion forests of slopes, screes and ravines. The site represents the most extensive complex of woodland gorges with Tilio-Acerion forests in Scotland. Although, like all Scottish sites, Clyde Valley Woods is beyond the northern distribution limit of lime Tilia spp. it possesses otherwise characteristic features of the Tilio-Acerion. Ground flora typical of the Tilio-Acerion is found in these woods, with some southern species such as Herb Paris *quadrifolia* and pendulous sedge *Carex pendula* also present.

Site Condition: Broadleaved woodland: Favourable Maintained (September 2002)



Coalburn Moss (224.35ha). This site supports extensive areas of the Annex 1 habitat, active raised bog and areas of degraded bog that has potential for regeneration. It retains an extensive primary dome confined by two abandoned railway lines. It has one of the larger tracts of vigorous bog-moss-dominated vegetation in central Scotland, with distinctive wet Sphagnum hollows. Typical bog-mosses include Sphagnum papillosum and S. magellanicum. Hare's-tail cottongrass Eriophorum vaginatum, cranberry Vaccinium oxycoccos and reindeer-moss lichen Cladonia spp. are also common. The hollows, rich in S. cuspidatum, are occasionally fringed by great sundew Drosera anglica. Some of the margins of the site support wetland communities.

Site Condition: Active Raised Bog: Favourable Maintained (August 2012)
Degraded Raised Bog: Unfavourable Recovering (August 2012)



Craigengar (37.31ha). The majority of this site is situated in West Lothian with only small sections encroaching into South Lanarkshire. It maintains habitats present as a qualifying feature but the primary reason for site selection is that it has the largest population of marsh saxifrage Saxifraga hirculus in Scotland. It is the largest single colony outside the North Pennines, supporting in 1999, an estimated 9,666 plants in base-rich flushes in an area of upland heather moorland.

Site Condition: Dwarf Shrub Heath: Unfavourable No Change (May 2013)
Vascular Plants: Unfavourable No Change (October 2007)
Calcareous Grassland: Unfavourable Declining (May 2013)



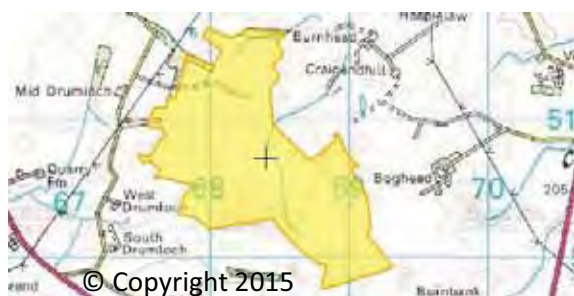
Cranley Moss (101.27ha). This site supports extensive areas of the Annex 1 habitat, active raised bog, as well as areas of degraded bog that has potential for regeneration. Situated in the central belt of Scotland it is important because it is a 'classic' raised bog, with a distinct and clearly defined active dome rising from a flat floodplain long since converted to agricultural use. Much of the bog margin is intact but although marshy ground surrounds parts of the site, most of the original lagg fen transition is thought to have been re-claimed. The bog has extensive Sphagnum carpets, which show vigorous growth throughout. Sphagnum imbricatum is found here.

Site Condition: Active Raised Bog: Favourable Maintained (October 2002)
Degraded Raised Bog: Unfavourable Recovering (October 2002)



Red Moss (75.86ha). Red Moss is a small site in Clydesdale comprising three areas of active raised bog together with associated lagg fen communities. The slightly domed areas of mire support typical raised bog vegetation with a good cover of Sphagnum including frequent S. imbricatum hummocks and occasional S. fuscum. Cranberry Vaccinium oxycoccos also occurs.

Site Condition: Active Raised Bog: Unfavourable Recovering (September 2009)



Waukenwae Moss (155.49ha). The site has extensive areas of active raised bog. It displays some of the best Sphagnum-hollow patterning found in bogs in this part of Scotland and also has several hummocks of *Sphagnum imbricatum*. The bulk of the site is relatively intact, having suffered little from marginal domestic peat-cutting.

Site Condition: Active Raised Bog: Favourable Recovered (February 2011)
Degraded Raised Bog: Unfavourable Recovering (February 2011)

National Nature Reserves

Under the provisions of Section 35 of the Wildlife and Countryside Act 1981 (WCA 1981), SNH may designate as National Nature Reserves (NNRs), known sites of national importance already managed as a reserve. This designation confers additional protection for an area as specific byelaws can be created to protect the site. There is **1** NNR in South Lanarkshire at **Clyde Valley Woodlands** (318.42ha).

Sites of Special Scientific Interest

Site of Special Scientific Interest (SSSI) is the main nature conservation designation in Great Britain. These sites are special for their plants or animals or habitats, their rocks or landforms or a combination of these. SSSIs are notified under the provisions of Section 28 of the Wildlife and Countryside Act 1981 (as amended).

SSSIs are chosen by virtue of the special interest of any of their flora, fauna, or geological or physiological features, to represent the best national and regional examples of natural habitat, physical landscape features or sites of importance for rare or protected species. There are **45** SSSIs in South Lanarkshire and bordering with other local authorities (**Table 2.1**).

Table 2.1 Sites of Special Scientific Interest within South Lanarkshire

Site Name	Area (ha)	Designated Features	Site Condition
Avondale	105.59	Woodland	Unfavourable No change
Birk Knowes	4.00	Palaeontology Stratigraphy	Favourable Maintained Favourable Maintained
Birkenhead Burn	3.73	Palaeontology	Favourable Maintained
Blantyre Muir	51.18	Raised bog	Unfavourable No change
Blood Moss and Slot Burn*	162.35	Blanket bog Palaeontology	Unfavourable No change Favourable Recovered
Bothwell Castle Grounds	71.38	Invertebrates Broadleaved woodland	Favourable Declining Unfavourable No change
Braehead Moss	122.6	Intermediate bog (raised)	Unfavourable No change
Calder Glen	10.24	Stratigraphy	Favourable Maintained
Cander Moss	29.58	Raised bog	Unfavourable Declining
Carnwath Moss	145.46	Raised bog	Unfavourable No change
Carstairs Kames	162.46	Geological	Favourable Maintained
Cartland Craigs	16.67	Broadleaved woodland	Unfavourable No change
Cleghorn Glen	70.72	Invertebrates Broadleaved woodland	Favourable Maintained Unfavourable No change
Coalburn Moss	224.35	Raised bog	Unfavourable Recovering
Cobbinshaw Moss*	490.66	Intermediate bog (blanket)	Unfavourable No change
Cobbinshaw Reservoir*	61.87	Fen, marsh and swamp (wetland)	Unfavourable Declining
Craigengar*	303.5	Bogs (Upland) blanket bog Vascular plants Fen, marsh and swamp (Upland) Dwarf shrub heath (Upland)	Unfavourable No change Unfavourable No change Unfavourable Declining Unfavourable No change

Site Name	Area (ha)	Designated Features	Site Condition
Craighead Hill Quarry	4.27	Geological	Favourable Maintained
Cranley Moss	101.27	Raised bog	Unfavourable No change
Dunside	1.19	Palaeontology	Favourable Maintained
Falls of Clyde	18.07	Broadleaved woodland Geological	Unfavourable Recovering Favourable Maintained
Fiddler Gill	29.85	Invertebrates Broadleaved woodland	Favourable Maintained Unfavourable No change
Garrion Gill*	39.75	Broadleaved woodland	Favourable Maintained
Gills Burn and Mare Gill	8.73	Broadleaved woodland	Favourable Maintained
Hamilton High Parks	30.77	Invertebrates Broadleaved woodland (upland) Broadleaved woodland (parkland)	Favourable Maintained Unfavourable No change Favourable Maintained
Hamilton Low Parks	105.9	Breeding birds (Grey Heron)	Favourable Maintained
Jock's Gill Wood	55.07	Broadleaved woodland	Unfavourable No change
Kennox Water	16.8	Stratigraphy	Favourable Maintained
Leadhills – Wanlockhead*	48.77	Mineralogy	Favourable Maintained
Millburn	14.01	Broadleaved woodland	Unfavourable Recovering
Miller's Wood	12.75	Broadleaved woodland	Unfavourable Declining
Milton-Lockhart Wood	11.89	Invertebrates	Favourable Maintained
Muirkirk Uplands*	18,660.29	Blanket bog Breeding bird assemblage Palaeontology Hen Harrier (breeding) Hen Harrier (non-breeding) Short-eared owl Upland assemblage	Unfavourable No change Favourable Maintained Favourable Maintained Favourable Maintained Unfavourable Declining Favourable Maintained Favourable Maintained
Nethan Gorge	39.8	Invertebrates Broadleaved woodland	Favourable Maintained Favourable Maintained
North Lowther Uplands*	7,833.3	Breeding bird assemblage Hen harrier (breeding) Upland assemblage Mineralogy	Unfavourable Declining Unfavourable No change Unfavourable Declining Favourable Maintained
Raven Gill	6.52	Stratigraphy	Favourable Maintained
Red Moss	75.86	Raised bog	Unfavourable Recovering
Ree Burn and Glenbuck Loch*	8.25	Stratigraphy	Favourable Maintained
River Clyde Meanders	140.91	Geomorphological	Unfavourable No change
Shiel Burn	2.41	Palaeontology	Favourable Maintained
Shiel Dod*	1,187.78	Upland assemblage	Favourable Maintained
Tinto Hills	1,479.96	Geological Sub-alpine dry heath Upland assemblage	Unfavourable Declining Unfavourable No change Favourable Maintained
Townhead Burn	11.07	Broadleaved woodland	Favourable Maintained
Upper Nethan Valley Woods	76.82	Broadleaved woodland (upland) Broadleaved woodland (wet)	Favourable Maintained Favourable Maintained
Waukenwae Moss	155.49	Raised bog	Unfavourable Recovering

*Sites that cross between other local authority borders

Source: SNH

All the SSSI sites detailed in **Table 2.2** are either within or adjacent to land owned by South Lanarkshire Council. Where the site is in its complete ownership the site condition is exclusively the responsibility of the Council.

Table 2.2: Condition status of SSSI partially or exclusively owned by SLC

SSSI	Notified Feature	Note
Avondale	Upland mixed Ash woodland (Avon Gorge)	Partially owned by SLC and part managed by Clyde Valley Woodland. Unfavourable condition does not imply the woodland is not of continuing importance.
Blantyre Muir (Calderglen Country Park)	Lowland raised bog	The site has areas of actively growing vegetation demonstrating regeneration on natural bog plan communities. The site is outwith the Country Park boundary.
Calder Glen (Calderglen Country Park)	Geology (Stratigraphy)	The site is located within the Country Park and benefits from an active management programme associated with the Park.
Hamilton High Parks (Chatelherault Country Park)	Beetle assemblage and wood pasture and parkland (Cadzow Oaks) Upland mixed Ash woodland (Avon Gorge)	Unfavourable condition does not imply that the woodland is not of continuing importance. Partially owned by SLC and managed within the Country Park. Avon Gorge is part managed by Clyde Valley Woodland.
Hamilton Low Parks (Chatelherault Country Park)	Heronry Breeding bird assemblage; <ul style="list-style-type: none"> ▪ Grassland ▪ Wetland ▪ Woodland 	Scotland's largest mainland Heronry. Unfavourable condition does not imply that the variety of breeding birds is not of continuing importance. The active management in the area focuses on monitoring the area and bird assemblages.
Jock's Gill Wood	Upland Oak Woodland	Unfavourable condition does not imply the woodland is not of continuing importance. Only partially owned by SLC, managed as part of the Clyde Valley Woodland.

Source: South Lanarkshire Council

National Scenic Areas

National Scenic Areas (NSA) are nationally important areas of outstanding natural beauty, comprising some of the best examples of Scotland's finest landscapes. They were first identified by the Countryside Commission for Scotland (a predecessor body to SNH) in their report on 'Scotland's Scenic Heritage' in 1978 and confirmed by the UK Government through the issue of Circular 20/1980. There are no designated or proposed NSAs in South Lanarkshire.

Regionally Important Sites

Although no statutory designation applies to regionally important sites, features such as Important Bird Areas (IBAs) identified by the Royal Society for the Protection of Birds (RSPB) are considered to be of regional importance. The IBA Programme of Bird Life International is a worldwide initiative aimed at identifying and protecting a network of sites critical for the conservation of the world's birds. There are no IBAs in South Lanarkshire.

Wet grassland and breeding waders

Some of the river valleys in South Lanarkshire hold regionally and, in some cases, nationally important numbers of breeding wading birds, including lapwings, redshanks and curlews. This suite of species has suffered dramatic declines across the UK, largely due to changes in agriculture. The maintenance of low intensity farming and open, unforested landscapes in key wader areas is critical to ensuring that populations of these birds still remain viable. RSPB Scotland, with assistance from SAC Consulting is working with farmers in the area to try and safeguard these key habitats.

2.2 Local Authority designated sites

There are two levels of local designations for sites of nature conservation interest, as either a nature reserve or as recorded sites of known nature conservation interest. The latter of these is the lowest level of site designation commonly found in Scotland.

Local Nature Reserves

Local Nature Reserves (LNRs) are designated by a local planning authority but Wildlife Trusts and other nature conservation bodies such as the RSPB may also own and manage them. There is 1 LNR in South Lanarkshire, at Langlands Moss, which comprises 20ha of peatland and grassland habitat. Morgan Glen, in Larkhall, which comprises 40ha of ancient, semi-natural woodland Avondale, awaits formal designation as a LNR. Improvements have been made to both sites in partnership with local community management groups.

Sites of Importance for Nature Conservation/Sites of Wildlife Importance

Such sites are identified by the local authority and/or Scottish Wildlife Trust and are afforded special consideration in relation to the local planning process. There is limited data on the number and condition of these sites in South Lanarkshire. The Council is developing a new system of 'Biodiversity Assets' for prioritising Local Nature Conservation Sites, based upon maintain the health and function of key natural habitats. Many local sites contain habitats or features that cannot be recreated, however, and it is important to ensure they are not lost and continue to be managed for their wildlife interest.

Biodiversity Assets

Many of South Lanarkshire's most valuable biodiversity assets fall outwith designated sites and rely upon the planning system to conserve and protect them. The South Lanarkshire Biodiversity Partnership prepared guidance to ensure development proposals take cognisance of non designated sites and habitats in the area and this has been incorporated within the Local Development Plan.

2.3 Woodland

Woodlands and forests provide the most biologically diverse habitat in South Lanarkshire, mostly associated with the complex ecological communities in woodland soils. Woodland cover across southern Scotland has been greatly diminished over the last thousand years through the clearance of land for agriculture and other land use changes. The remaining ancient and semi-natural woodlands in South Lanarkshire are an irreplaceable resource but are fragmented and have suffered from mismanagement. Further clearance of tree-lined hedgerows and increased development has intensified the fragmentation of woodland habitats. Large areas of new woodland have been created over the past century, mostly in the form of upland conifer plantations but these, while economically important, do not support high levels of biodiversity.

Much of the remaining ancient, semi natural woodland woodland is found in the steep slopes and ravines of the River Clyde and its tributaries and is a nationally significant biodiversity resource. Some areas of this ancient woodland were felled and replanted with conifers in the mid 20th century and are listed as Plantation on Ancient Woodland Sites (PAWS). The restoration of these sites to native tree cover is a priority for both local and national biodiversity action plans.

The National Forest Inventory 2014 shows South Lanarkshire as having a total of **38,281ha** of woodland. The percentage cover of commercial conifers has reduced to **54%**, due to the felling of some 8,257ha, mostly as part of wind farm developments. This has been compensated for to an extent by 4,846ha of new planting (**Table 2.3: Figure 2.2**).

Table 2.3: Woodland types in South Lanarkshire

Woodland Type	Area (ha)	% Total
Broadleaved and mixed woodland	4,814	12.3
Coniferous and other plantation woodland	21,112	54.1
Recently felled	8,257	21.2
New Woodland (including permissions)	4,846	12.4
Total woodland cover (before felling)	39,029	
Woodland cover (less felled areas)	35,618	

Source: South Lanarkshire Council and the Forestry Commission

Changes in the areas of conifer plantation and native woodland since the last iteration of this report reflect new data taken from the Scottish Native Woodlands Survey and the national Forest Inventory, 2014. The Scottish Native Woodlands Survey (2014) indicates a total of **4,765ha** of native woodland in South Lanarkshire, which represents 99% of the total broadleaved woodland cover.

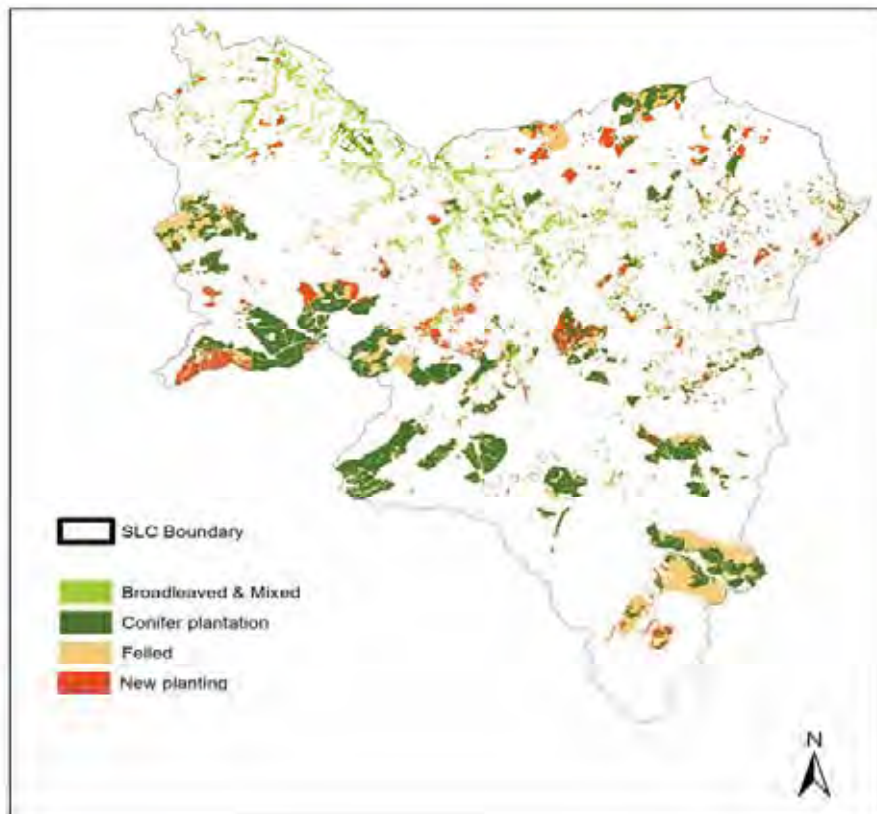
In South Lanarkshire, **1,528ha** of woodland is on the Ancient Woodland Inventory. Ancient, semi natural-woodland makes up **32%** of all native woodlands but less than 4% of the area's total woodland cover. There are 283ha of Plantation on Ancient Woodland Sites in South Lanarkshire and a reduction in this figure through conversion back to native tree cover would be a positive indicator.

About 730ha of woodland, particularly within the urban areas or country parks are owned by the Council. Of this holding, 575ha (79%) is of predominately native, broadleaved woodland and 490ha (67%) is ancient woodland. This means that the Council owns more than 11% of the total area of native woodland in South Lanarkshire and 32% of the remaining ancient woodland. Of the Council owned woodland, 99ha is listed as PAWS, representing 35% of the South Lanarkshire total. Data on the Council's woodland holding will continue to be refined through the Greenspace Audit and the implementation of the Local Biodiversity Action Plan (LBAP).

Ancient woodland contains a wide range of species and complex ecological processes developed over thousands of years. These cannot be replicated effectively. The current extent of ancient woodland in South Lanarkshire is the result of a long period of fragmentation, with the few remaining patches on the steeper slopes of the Clyde Valley and its tributaries (**Figure 2.3**).

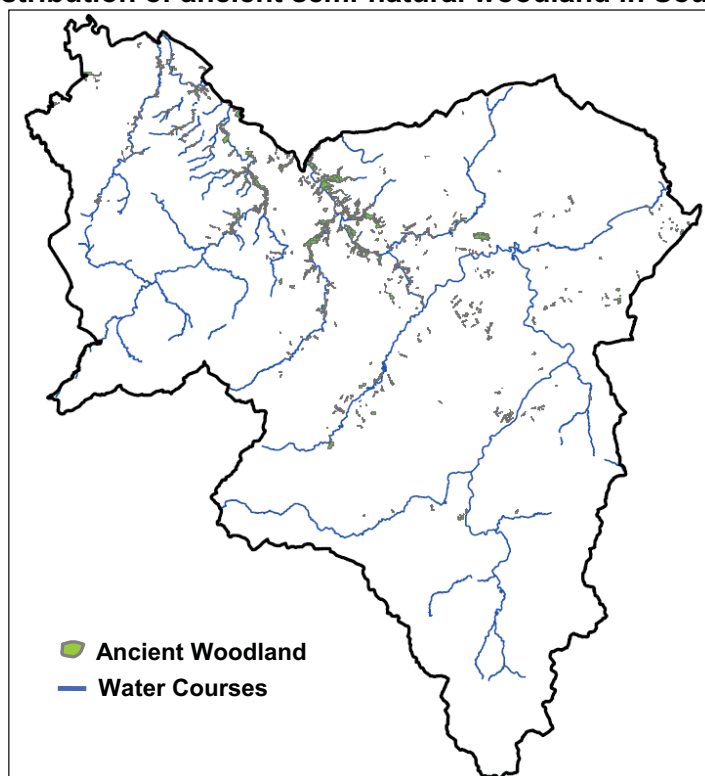
Ancient, native woodlands are by far the most diverse terrestrial habitats in Scotland, and hold many thousands of species. The complex associations of species in ancient woodland soils are the source of all of our agricultural soils and it is essential these irreplaceable resources are maintained for future generations.

Figure 2.2: Distribution of woodland types in South Lanarkshire



Source: South Lanarkshire Council

Figure 2.3: Distribution of ancient semi-natural woodland in South Lanarkshire



Source: South Lanarkshire Council

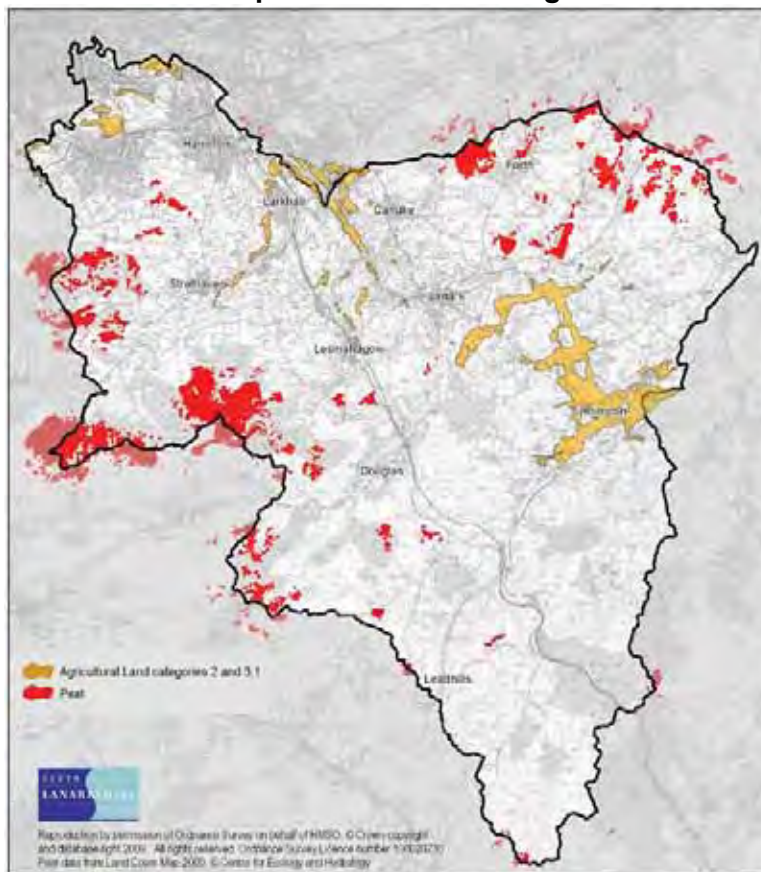
2.4 Peatland

Peatlands are a group of habitats such as bogs and fens which develop peat soils. They form important carbon stores and deliver key ecosystem services such as clean water and flood control. They are often important for biodiversity, supporting distinctive plant and animal communities. There are extensive areas of peatlands in South Lanarkshire (**Figure 2.4**), with some of the best quality areas protected under international and national legislation, (see section 2.1).

The condition of peatland is influenced by land management and affects its ability to function. In South Lanarkshire, many of the peatland areas are in less than favourable condition. A number of restoration projects are currently underway to improve peatland condition across South Lanarkshire. Safeguarding peatlands continues to be a high priority for the Council. Protective policies are included in the Council's Biodiversity Strategy, the Local Development Plan, the Minerals Local Development Plan and the Sustainable Development Strategy.

SNH has undertaken a programme of mapping the location, condition and potential threats to lowland raised bog across Scotland. This information is held within the Raised Bog Inventory. The precise value of each of these features is dependent upon the status and condition of these individual sites.

Figure 2.4: Distribution of peatland areas throughout South Lanarkshire



Source: South Lanarkshire Council

There are **69** sites listed on the Lowland Raised Bog Inventory in South Lanarkshire (**Table 2.4**).

Table 2.4: Lowland raised bog sites identified within South Lanarkshire

Site name	Grid reference	Site name	Grid reference
Carnwath Moss	NS967482	Drumbuie (north)	NS647510
Torfoot	NS637377	Drumbuie (south)	NS653506
Avonside	NS633368	Brackenridge	NS777388
East Dykenook	NS658377	Cleughhead	NS770372
High Drumclog	NS660487	Blood Moss (west)	NS760399
Mid Drumclog	NS636397	Blood Moss (east)	NS760399
Rench (north)	NS632388	Cander Moss	NS781460
Rench (south)	NS633385	By Red Moss	NS870267
Drumclog	NS626387	Red Moss A	NS871263
Roughdiamond	NS623380	Red Moss B	NS874260
Fieldhead	NS660435	Red Moss C	NS882260
Cladance Moss NE	NS670488	Crawick Moss	NS837204
Cladance Moss SW	NS660487	Mountherrick (south)	NS853216
Cladance Moss N	NS660494	Mountherrick (north)	NS855223
Scobieside	NS627400	Auchren	NS830382
Westlinbank	NS672400	Hollandbush	NS805362
Meadowhead (west)	NS643483	Coalburn Moss	NS827365
Meadowhead (north)	NS649488	Threepwood Moss	NS803474
Meadowhead (central)	NS649485	Kingshaw Moss	NS865518
Meadowhead (south)	NS649484	Gair Farm	NS873529
Rigfoot Moss	NS675471	Crawford	NS960218
Maidenburn (north)	NS680462	No data	NS948472

Site name	Grid reference	Site name	Grid reference
Maidenhead (south)	NS680458	Carnwath Moss	NS978480
Stewartfield (NW)	NS668542	Shodhill Moss	NS938488
Crutherland (east)	NS668514	Cranley Moss	NS935475
Crutherland (west)	NS660513	No data	NS958465
Drumloch	NS683514	Burnfoot	NS988553
Drumloch	NS678518	Forth	NS940541
Waukenwae (west)	NS680508	Braehead Moss	NS959515
Waukenwae (east)	NS688504	Cableburn south	NT038458
Whitefield	NS693498	Cableburn	NT040463
Stewartfield	NS662537	Cableburn north	NT040466
Westwood	NS613536	Borland Moss west	NT060470
Shields Moss	NS623518	Borland Moss	NT065472
Langlands Moss	NS635512		

Source: Scottish Natural Heritage

3 Historic and cultural heritage

SEA objectives that relate to historic and cultural heritage

- To protect and enhance the historic and cultural heritage of the area.
- To maintain and conserve the historic setting of settlements and landscape form, particularly where such are locally distinctive.

South Lanarkshire encompasses a broad range of landscapes which have influenced the way man has used the land and dictated the growth of villages and towns. Within the broad, low-lying areas adjacent to the River Clyde the settlements are large while the rolling farmland beyond has a number of smaller settlements that grew either as market towns or as a result of a particular activity such as fruit growing. The upland hills are characterised by scattered farms and villages, with some settlements being there for simply one reason, such as the lead mining at Leadhills.

The valley of the River Clyde, particularly in the south of the area has formed a transport route for centuries demonstrated by the large number of pre-historic and Roman remains that survive, reflecting its importance as a corridor from Carlisle through to the Highlands. The Clyde has also provided the power for industrial processes, such as the mills at New Lanark which were developed in association with philanthropic thinking on the provision of housing for mill workers. The importance of New Lanark is reflected in its World Heritage Site status.

Throughout South Lanarkshire the sheer variety of historic buildings and towns provide a rich sense of cultural identity across a diverse landscape. These are important in enhancing the quality of life and sense of identity of all South Lanarkshire's residents. Such a diverse range of historic and cultural assets is also a vital contributor to the area's economy through the attraction of visitors to South Lanarkshire.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

The Current status is shown by the following colours:

G Good	F Fair
P Poor	Limited data

The trend direction is shown with the following arrows:

↑	Improving
↔	No change
↓	Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Built heritage	F	↑	The number of Scheduled Ancient Monuments and, conservation areas remains the same as the 2013 Report. The number of listed buildings has decreased. The buildings on the 'Buildings at Risk' register have slightly increased.
Gardens and Designed Landscapes	G	↔	The number and condition of Gardens and Designed Landscapes areas within South Lanarkshire has remained the same since the last report.
Archaeological sites	F	↑	The number of archaeological sites recorded across South Lanarkshire continues to increase year on year.
Battlefields	G	↔	There are two registered battlefields on the Inventory of Historic Battlefields. No further sites in the area are currently being considered for inclusion to the Inventory. There is limited information on the condition of battlefield sites.
Historical heritage	G	↔	The area has a wealth of historical and tourist attractions, including the New Lanark World Heritage Site. These continue to attract large numbers of visitors to South Lanarkshire.

Baseline situation

The historic and built heritage of South Lanarkshire is complex and varied, from medieval burghs such as Hamilton and Biggar through to planned villages such as New Lanark. There are numerous listed buildings ranging in size from castles to small agricultural cottages, with the greatest concentration of listed buildings being within the medieval burghs. In addition to those sites situated above ground, there are numerous buried or ruinous archaeological assets which may not be fully recorded.

Pressures on historic assets come from an increasing number of sources which may result in damage to, or the complete loss of, the building or site of cultural significance. However, incremental damage is far more common especially to individual buildings where adaptations or extensions have occurred without the full knowledge of its historic importance or by the use of inappropriate building styles or materials.

3.1 Built heritage

South Lanarkshire's cultural heritage is protected and conserved through designation status set by national legislation, regional and local policy. There are four types of designation status for cultural sites or individual properties. The types and locations of these in South Lanarkshire are shown in **Table 3.1** and **Figure 3.1**.

Table 3.1: Designated sites and monuments in South Lanarkshire (2015)

Designation	Total
Scheduled Ancient Monuments	179
Historic Gardens and Designed Landscapes	7
Conservation Areas	30
Listed Buildings	1,080
▪ Category A	93
▪ Category B	536
▪ Category C	451
Total designated sites	1,296

Source: Historic Environment Scotland:

Listed Buildings

Historic Environment Scotland is responsible for the designation of listed buildings and the Council is responsible for maintaining the Statutory List, or public record of them. The term building is a generalisation as listing can, for example, include groups of buildings, bridges, fountains, statues or even telephone boxes. Listing covers both the interior and exterior of a building regardless of category. There are three categories of listing:

- Category A: buildings of national or international importance
- Category B: buildings of regional importance
- Category C: buildings of local importance.

At April 2015, there are **1,080** listed buildings across South Lanarkshire, a reduction of 14 from 2012. **Table 3.1** shows the breakdown of the listed buildings by category. GIS data reveal that there are 1,420 listed building records or 'entities' across South Lanarkshire. These are set out by category in **Table 3.2**. Of these records, **56.4%** are in Clydesdale, **24.7%** in Hamilton, **14.2%** in East Kilbride and **4.7%** in Cambuslang and Rutherglen.

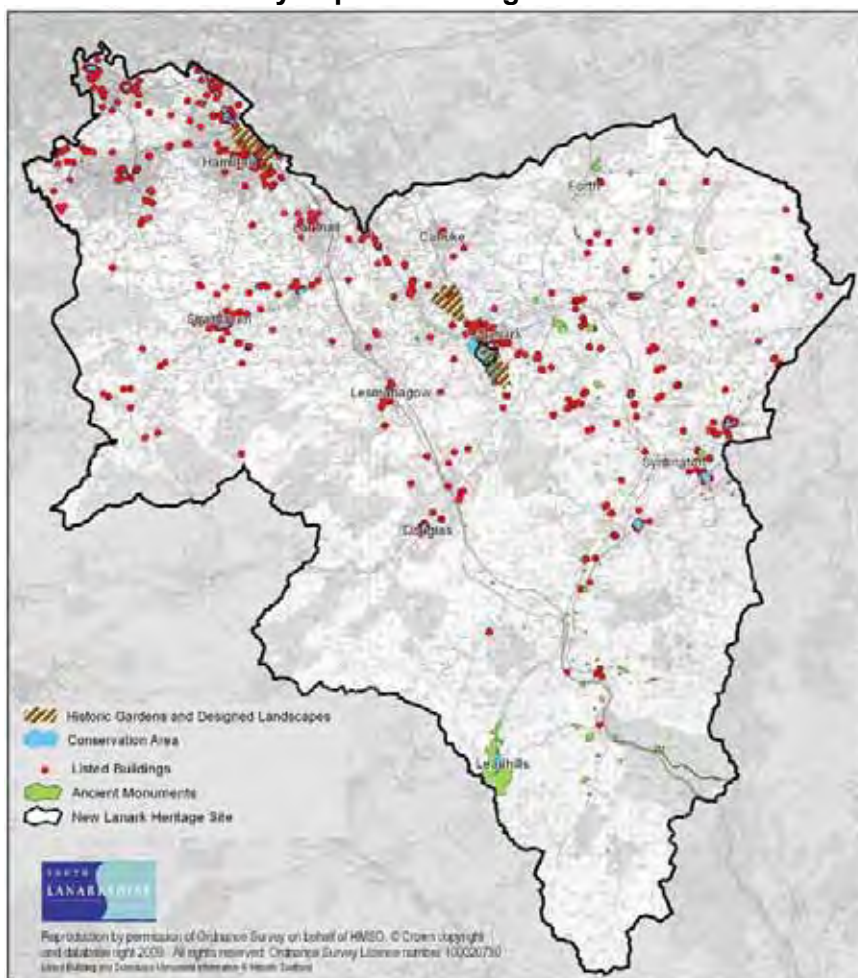
Table 3.2: Listed Building records by category, April 2015

Category	A	B	C	Total
Cambuslang/Rutherglen	4	44	19	67
Clydesdale	110	381	310	801
East Kilbride	10	95	96	201
Hamilton	26	181	144	351
Total	150	701	569	1,420

Ancient Monuments

A scheduled monument is an archaeological site or monument of national importance to which Scottish Ministers have given legal protection under the Ancient Monuments and Archaeological Areas Act 1979. As such statutory 'Scheduled Ancient Monument' consent is required from Historic Environment Scotland prior to any works being carried out. Some sites and monuments are visible, such as prehistoric burial mounds, ruined castles or 20th century military remains but others are less obvious because they have no obvious trace on the surface and are sealed beneath peat or marshes. Buried archaeology may survive beneath the turf or plough-soil, and is likely to extend beyond any visible remains.

Figure 3.1: Distribution of culturally important designated sites and individual properties



Source: South Lanarkshire Council

Historic Environment Scotland assesses monuments against published criteria and guidance set out by Scottish Ministers. In doing so, they take account of artistic, archaeological, architectural, historic, traditional, aesthetic, scientific and social factors. More detailed information can be found in Scottish Historic Environment Policy (SHEP), available at www.historic-scotland.gov.uk.

In April 2010, there were 179 scheduled ancient monuments in South Lanarkshire. This increased to **183** in April 2012. Historic Scotland records indicate that, at April 2015, there were **179** scheduled monuments in South Lanarkshire (**Table 3.3**).

Table 3.3: Ancient Monuments in South Lanarkshire by category, April 2015

Category	No.	%
Prehistoric ritual and funerary	46	25.7
Prehistoric domestic and defensive	71	39.7
Roman	13	7.3
Crosses and carved stones	2	1.1

Category	No.	%
Ecclesiastical	3	1.7
Secular	34	19.0
Industrial	9	5.0
20 th century military and related	1	0.6
Total	179	100%

Conservation areas

Conservation areas are areas of special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance. This character may be created by individual buildings, by the use of a particular building style, or a specific building material. The designation of a conservation area covers not just the actual buildings but also their relationship with the street pattern and public and private spaces. Trees within a conservation area are also given extra protection.

There are **30** conservation areas within South Lanarkshire ranging in size from the large Hamilton town centre to the small rural village of Lamington.

Buildings at Risk

The Buildings at Risk Register, established in 1990, is maintained by Historic Environment Scotland. It highlights properties of architectural or historic merit throughout Scotland considered to be at risk or under threat and maintains records of their condition. It has proved to be a useful tool in the marketing of a property to potential restorers.

At March 2015, **106** buildings across South Lanarkshire were listed on the Buildings at Risk Register. Of these 68 (64.2%) are listed buildings or structures (**Table 3.4**). Of the buildings at risk in South Lanarkshire, 44% are in urban locations, 26% are in rural locations, 13% within small town locations and 17% are in rural settlements.

Table 3.4: Buildings at Risk in South Lanarkshire

Listed Status	March 2011	March 2013	March 2015
A	19	18	19
B	38	36	37
C	13	12	12
Unlisted	42	39	38
Total	112	105	106

Source: www.buildingsatrisk.org.uk

The Register defines the level of risk faced by each building based on its structural condition and the threats to its long term existence. In South Lanarkshire, **9** buildings (8.5%) are within the 'critical' category which means they are threatened with demolition and/or there may be structural concerns and there is a real or perceived conservation deficit which makes rescue unlikely. There are **24** buildings (22.7%) in South Lanarkshire, classed as being at 'high' risk because there is no immediate danger of collapse but remedial action is necessary to prevent further serious deterioration. Of the remaining buildings on the Register, **21** (19.8%) are classed as 'moderate' risk, **50** (47.2%) as 'low' risk and the remaining **2** (1.9%) buildings are considered to be at 'minimal' risk.

In South Lanarkshire, **34.9%** of buildings on the Buildings at Risk Register are classed as being in fair condition and **0.9%** in good condition. **43.4%** are classed as being in poor condition, **7.5%** in very poor condition and the remaining **13.2%** as ruinous.

3.2 Gardens and Designed Landscapes

At April 2015, there are **7** Inventory gardens and designed landscapes in South Lanarkshire (**Table 3.5**). These sites are formally recognised as being important in their own right and are identified in the 'Inventory of Gardens and Designed Landscapes' maintained by Historic Environment

Scotland. The gardens generally include ornamental designs which have been laid out in a planned manner, usually as part of the policies or estate accompanying a family home or institution. The key consideration in selection are the historical, horticultural and arboriculture value of the garden in association with nature conservation interests, scenic interests, and the quality or innovation of design of the garden and other ornamental features.

As an important feature in the historic environment, gardens and designed landscapes are sensitive to change either within their boundaries or to their landscape setting. A range of impacts from modern life can damage their intrinsic value and potential and as such the sites require protection to ensure their interest survives for future appreciation.

Table 3.5: Historic Gardens and Designed Landscapes within South Lanarkshire (2015)

Site	Area (Ha)	Site Description
Hamilton Palace	420	Formerly one of Scotland's finest designed landscapes and part of Chatelherault, today the park forms an impressive setting for several listed buildings including the Hamilton Mausoleum. The park hosts some important heritage trees and provides a valuable wildlife resource.
Chatelherault	708	Formerly one of Scotland's grandest designed landscapes and closely associated with Hamilton Palace, Chatelherault has remnants of some formal gardens and impressive parkland designed for scenic effect, ancient trees and some outstanding architecture. The High Parks and Avon Gorge are valuable wildlife habitats.
Lee Castle	366	The woodland, parkland and gardens make an impressive setting for the category A listed Lee Castle. The natural broad Lee valley is of outstanding nature conservation value.
The Falls of Clyde	399	The Falls of Clyde are one of the most significant examples of the picturesque movement of the late 18th century in Scotland and is now of national importance. It incorporates New Lanark, and the estates of Corehouse, Bonnington, Braxfield and Castlebank Park. It is of outstanding importance for historical, architectural, scenic and nature conservation reasons.
Scot's Mining Company House	2	An outstanding example of a virtually unaltered, small, 18th-century garden layout connected with James Stirling, the development of the profitable Leadhills mining enterprise in the vicinity, and possibly William Adam.
Little Sparta (Stony Path)	3.5	A contemporary modern garden. It is an outstanding example of its type and contains works of art by the sculptor and poet Ian Hamilton Finlay.
Barncluith	4	Formerly an outstanding work of art, the early terraces and gardens are still of special historical significance, and the designed landscape forms an impressive setting for a category A listed building.
Total Area	1,902.5	

Source: Historic Environment Scotland

3.3 Archaeological sites (statutory and non-statutory)

According to the West of Scotland Archaeology Service (WoSAS) Historic Environment Record, there are **4,622** archaeological sites across South Lanarkshire of various features such as burial cairns and archaeological finds through to the remains of buildings. Some archaeological sites may lack statutory protection but they are still valuable in maintaining the overall historic record of South Lanarkshire's heritage. As pressures from development proposals continue, there is potential for more archaeological sites to be discovered. It is important such sites are recorded and ideally maintained in situ. However, it is likely that many will simply be recorded prior to their loss through excavation. To prevent such sites being irrevocably lost, it is important that WOSAS is consulted at the outset of development proposals and for instigation and mitigation measures to be established to prevent damage or loss.

In South Lanarkshire between 2009 and 2012, WoSAS were consulted on 419 planning applications. During that period, 101 applications were approved with archaeological conditions, representing about a quarter (24.1%) of applications. **Table 3.6** illustrates these annual consultations.

Buried archaeological assets

The number of archaeological buried sites across South Lanarkshire is unknown. However, there are numerous crop-mark sites, (sites when soil conditions enable subsurface features to be visible), enabling the layout of sites and monuments to be periodically visible. In the absence of invasive excavation, the location and knowledge of the existence of such sites is extremely variable with the actual recorded location of such sites limited to about 1%.

Table 3.6: Consultations with WoSAS

	No. consultations with WoSAS	No. approved*	No. with archaeological conditions	% of those approved with archaeological conditions
2009	85	70	19	27.1
2010	56	44	14	31.8
2011	85	65	28	43.0
2012	69	37	11	29.7
2013	72	55	15	27.2
2014	52	40	14	35.0

*Excludes those withdrawn, refused or not determined.

Source: South Lanarkshire Council

3.4 Battlefields

In March 2011, Historic Scotland on behalf of the Scottish Government launched the Inventory of Historic Battlefields which identifies battlefields considered to be of national importance for the contribution they make to the archaeology and history of Scotland. As battlefields are a fragile and finite resource very susceptible to damage from a range of activities or developments the Inventory provides information to aid their protection, interpretation and promotion for future generations.

There are **2** registered battlefields in South Lanarkshire (**Table 3.7**). The Battle of Bothwell Bridge (1679) was added to the Inventory in March 2011 and the Battle of Drumclog (1679) was added in November 2011. No further sites within South Lanarkshire are currently being considered for inclusion to the Inventory.

Table 3.7: Battlefield sites in South Lanarkshire

Battlefield	Battle information
Battle of Drumclog 1 June 1679 (UKFOC 276)	Due to religious persecution by Charles II, Scottish Presbyterians or Covenanters were forced to worship in secret, often gathering in remote areas in the hills. Having heard that such a gathering was taking place, John Graham of Claverhouse, a government officer and later Viscount of Dundee, found an armed force of Covenanters assembled on high ground to the north-west of Drumclog. After several skirmishes and using the advantage offered by the drier ground the Covenanter force charged down across the marsh to engage the government troops who were overwhelmed and fled. The Covenanter victory at Drumclog buoyed the hopes of even moderate non-conformists and their ranks swelled with volunteers from all over south western Scotland.
Battle of Bothwell Bridge 22 June 1679 (UKFOC 275)	Following the Battle of Drumclog a force of Covenanters marched on Glasgow but failed to take the city. A stunned government quickly sent a larger force from Edinburgh, led by the Duke of Monmouth to intercept the Covenanters who were positioned on the south side of the bridge at Bothwell over the River Clyde. Despite a valiant effort to defend the bridge, the Covenanters were eventually overwhelmed with Monmouth giving orders for quarter for the Covenanters but John Graham of Claverhouse seems to have taken revenge for his defeat at Drumclog and 400 men were killed in the rout. About 1,200 were taken prisoner, marched to Edinburgh and held at Greyfriars Kirk.

Source: Battlefields Trust; Historic Scotland

3.5 Historical heritage

South Lanarkshire's rich historical heritage is represented with **8** museums, **4** historical attractions and **1** World Heritage Site at New Lanark. These assets offer a rich and diverse insight into the

historical heritage of South Lanarkshire and the impact the environment has played in shaping local communities.

Museums and historical attractions

Tourism is an important sector in South Lanarkshire with the high quality historical heritage and diverse local environment drawing visitors from both home and abroad. There is a need to manage visitor numbers in a way that lessens the impact on the environment and does not spoil the very thing the visitors have come to see. **Table 3.8** illustrates the visitor attractions and visitor numbers.

Table 3.8: Visitors to museum and historic attractions in South Lanarkshire

Attraction Site	Description	Visitor Nos.
Museums		
Biggar Museum Trust	The Biggar Museum Trust incorporates seven museums including; Moat Park Heritage Centre; Greenhill Covenanters' House; Gladstone Court; Biggar Gasworks; Holy Trinity Chapel; Brownsbank Cottage – formerly the home of the poet Hugh MacDiarmid and Albion Motors Archive.	Not known
Crawfordjohn Heritage Venture	Located in the former 18 th Century Church, the Venture illustrates the nature of life in the Southern Uplands with farming displays (hill and sheep farming) and rural community life.	Not known
David Livingstone Centre	Illustrating Livingstone's life from his childhood in the Blantyre Mills to his explorations in the heart of Africa.	19,937 (2010)
Douglas Heritage Museum	Located in the old Dower House of Douglas Castle the museum exhibits local village life, the Douglas family and the Cameronian Regiment.	Not known
Lanark Museum	Provides an illustrative collection of historical interest on various aspects of the Royal Burgh of Lanark's history.	Not known
Leadhills Miners Library	The Leadhills Reading Society is the oldest subscription library in the UK, founded in 1741	Not known
Low Parks Museum	Features permanent displays on the history of South Lanarkshire, particularly within the Clyde Valley area, as well as a programme of temporary displays. Showcases the history of the local regiment, the Cameronians (Scottish Rifles) which disbanded in 1968 after a 300 year history.	2011 – 28,521 2012 – 33,636 2013 – 30,887 2014 – 36,602
National Museum of Rural Life	Provides an insight into past farming life and how that shaped the countryside we know today.	72,326 (2011/ 2012)
Historical attractions		
Bothwell Castle	Scotland's largest and finest 13th century castle. Part of the original circular keep survives.	Not known
Chatelherault Hunting Lodge	Built in the middle of the 18th century designed by the architect William Adam. The restored hunting lodge is set within the 500 acre Country Park, includes a Visitor Centre and illustrates country life within Lanarkshire.	Visitor Centre: 2008 - 119,487 2009 – 131,934 2010 – 126,149 2011 – 151,640 2012 – 162,225 2013 – 206,152 2014 – 141,550
Craignethan Castle	Dating back to 1532, the Castle was an important artillery fortification, with defences including a caponier (a stone vaulted artillery chamber). The oldest part is the tower house built by Sir James Hamilton of Finnart.	Not known
Hamilton Mausoleum	The Hamilton Palace Mausoleum is a Roman-style domed structure standing at 37m in height, occupying a site close to the original Hamilton Palace. It was built for the 10 th Duke of Hamilton in 1858 and is famous for having the longest echo in the world at 15 seconds.	2011 - 1,423 2014 – 1,476

Source: South Lanarkshire Council; Museum of Rural Life

Museums Association definition 'Museums enable people to explore collections for inspiration, learning and enjoyment. They are institutions that collect, safeguard and make accessible artefacts and specimens which they hold in trust for society.'

World Heritage Site

Inscribed as a World Heritage Site in 2001, New Lanark is a restored 18th century cotton mill village located south of Lanark close to the Falls of Clyde. New Lanark Conservation Trust, formed in 1974, is an independent registered charity dedicated to its restoration and development.

Country Parks

Country Parks are designated and managed by South Lanarkshire Leisure and Culture Trust. They provide opportunities for people to enjoy open-air recreation facilities within a managed countryside setting. There are **3** designated Country Parks in South Lanarkshire (**Table 3.9**).

Table 3.9: Visitors to Country Parks in South Lanarkshire, 2008 - 2014

Country Parks	Description	Visitor numbers
Calderglen	Set within the former country estates of Torrance and Calderwood, the park offers a range of trails along the Rotten Calder Gorge. The wooded glen which extends for about 5km along the Rotten Calder river forms part of a SSSI site. Calderglen children's zoo is located in the grounds, along with a tropical conservatory and several play areas.	2008 – 407,170 2009 – 696,110 2010 – 906,999 2011 – 798,099 2012 – 874,074 2013 – 941,432 2014 – 909,799
Chatelherault	The Country Park is set around the main Chatelherault hunting lodge, and includes the ancient woodland Avon Gorge home to a huge variety of wildlife, including roe deer, otters, badgers and a wide range of woodland birds. The ten mile of trails through the Gorge includes High Park SSSI, the famous Cadzow Oaks, some of the oldest trees in the UK thought to date back some 600 years, and the ancient ruin of Cadzow Castle which dates back to the 16th century.	2008 – 618,930 2009 – 674,876 2010 - 669,744 2011 – 612,769 2012 – 659,261 2013 – 644,163 2014 – 602,138
Hamilton Low Park	Forming part of Strathclyde Country Park, Hamilton Low Park is situated on the edge of Hamilton, and offers a network of footpaths many across flat grassland which includes three ponds, which play host to wildfowl most of the year, and along the River Avon which is the haunt of kingfishers and otters. The footpaths on North Haugh offer views into the low lying wet grassland which is the home of pheasant and roe deer. The Haugh is an extremely important breeding area for many species of migrant warblers, whilst the nearby Island Pond and Barmichael Plantation form part of the Nature Reserve. The soils within the area are rich, supporting a summer wildflower meadow populated with several species of butterflies and other attractive insects.	Not known*

*Visitor numbers are difficult to obtain due to the Park being fully open with multiple entry points

Source: South Lanarkshire Council

4 Material assets and landscape

SEA objectives that relate to material assets and landscape

- To conserve natural and man-made resources.
- To promote access to recreational activities.
- To encourage sustainable use of material assets.
- To encourage the protection and enhancement of landscape character.

Material assets can be described as the infrastructure of the Council and the resource of the area. Landscape relates directly to land use and the area's characteristics. This can include land reserved for development and the extent the public has access to facilities and services. These issues are closely related with particular overlap in some areas including land use and public access. It is logical, therefore, that both material assets and landscape are considered in this chapter and that the environmental issues are jointly considered. The Council provides a range of services through managed facilities. It is important these facilities match the needs of the population and also conserve the character of the area.

South Lanarkshire has a diverse landscape rich in scenic value and characterised by its diverse range of land uses. The area is dominated by features such as the Lowther Hills and the Clyde Valley. The diversity of the landscape across the area is a key feature of South Lanarkshire and it is important it is preserved and promoted for wider public use through a range of opportunities.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

G Good

F Fair

↑ Improving

↔ No change

P Poor

□ Limited data

↓ Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Vacant and derelict land	G	↑	The area of vacant and derelict land has decreased by 25% in the last decade again through re-development. The number of vacant and derelict sites has also decreased.
Recreational land	F	↑	Although redevelopment has increased specific recreational provision further greenspace improvements are required, particularly through linkage with other issues including biodiversity and habitat connectivity, health and social and environmental deprivation.
Countryside access	F	↑	Although the extensive path network is deemed to meet the area's needs, there remain concerns about the condition and standards of paths and infrastructure.
Built facilities	G	↑	The majority of schools have been renewed or modernised, however, their use as community hubs should be monitored. There are a wide range of sport, leisure and cultural facilities in South Lanarkshire.
Landscape	G	↔	Some developments can affect the visual amenity of the local landscape. The Landscape Character Assessment, 2010 identifies areas where development is considered to be detrimental to the overall landscape characteristics of South Lanarkshire and areas where there is limited capacity for development.
Minerals	F	↔	Minerals remain an economically important resource across South Lanarkshire. Sites that have now closed will be restored in a manner that will help to enhance the environment.

Baseline situation

South Lanarkshire offers a wide variety of recreational activities, with many areas well serviced by both recreational greenspace and built facilities. Public access to the wider environment is promoted through the Country Parks and the Core Paths Network.

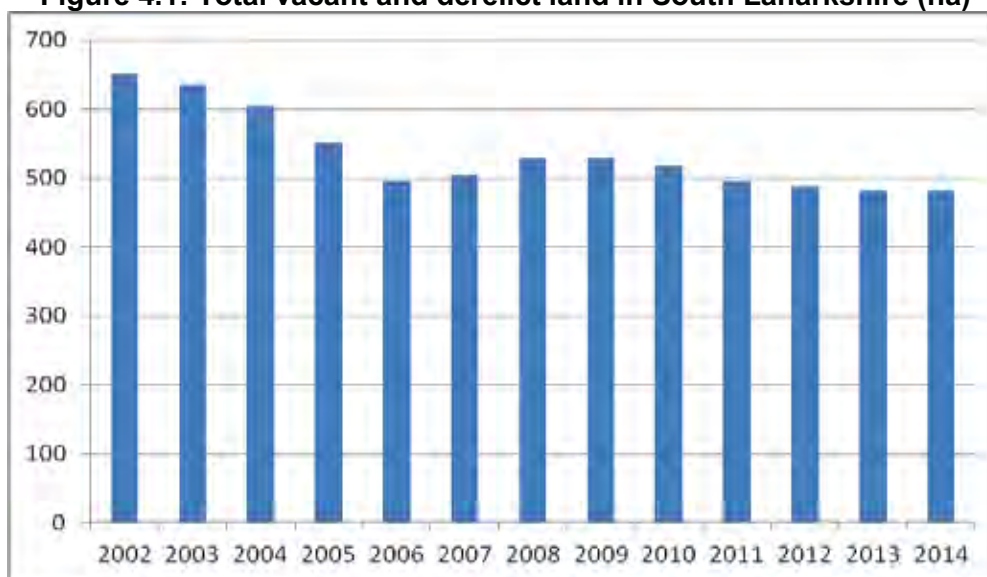
South Lanarkshire has areas of dense population, where development poses a risk to the very landscape that provides the area with its local characteristics. It is important that the green belt, local recreational and greenspace networks are maintained and appropriate vacant and derelict land developed.

4.1 Vacant and derelict land

There is a blighting effect associated with vacant and derelict land on the local environment. One of the main environmental issues of South Lanarkshire Council's Local Development Plan is to address local vacant and derelict land, through reclamation and redevelopment in order to revitalise and regenerate the local environment. However, some sites can also provide localised pockets of wildlife, providing their own beneficial effects on the local environment.

Between 2002 and 2014, vacant and derelict land decreased by 1.6% in Scotland and decreased by **25%** in South Lanarkshire (**Figure 4.1**). In 2002, there were **270 sites**, totalling **651 ha** in South Lanarkshire. In 2014, this decreased to **256 sites** and a total of **481 ha**, representing a decrease in both site numbers and total area of vacant land during that period.

Figure 4.1: Total vacant and derelict land in South Lanarkshire (ha)



Source: South Lanarkshire Council: The Scottish Government

More than half (**57%**) of vacant and derelict land in South Lanarkshire is in urban areas (**Table 4.1**). There remains, however, a legacy of large rural derelict sites associated with the area's mining and industrial past, particularly in Clydesdale.

Table 4.1: Vacant and derelict land (ha) in South Lanarkshire, 2014

	Urban	Rural	Total	% Total Area
Clydesdale	43.98	164.30	208.28	42.6
East Kilbride	44.49	0	44.49	9.1
Hamilton	81.39	41.16	122.55	25.1
Cambuslang/Rutherglen	109.66	4.06	113.72	23.3
South Lanarkshire	279.52	209.52	489.04	100%

Source: South Lanarkshire Council

The remediation and redevelopment of vacant and derelict land is a priority for the Council. Such action is critical to the process of area renewal and regeneration, providing opportunities for

economic development, new housing, recreation provision and enhancement of the environment. Between 2006 and 2014, **240.61 ha** of previously vacant and derelict land have been taken forward for development or greening in South Lanarkshire. The 2014 take up figure includes a 14.2 ha site at Cuningar Loop which has been transformed into an urban woodland park, as part of the 2014 Commonwealth Games Legacy.

4.2 Recreational land

Allotments

Allotments provide a range of benefits, from healthier lifestyle to greater diversity in the local environment. An allotment offers regular healthy outdoor physical activity as well as the added benefit of improving mental wellbeing. In addition, allotments themselves provide a habitat network for wildlife and plant species. Growing your own fruit and vegetables offers people an opportunity to reduce their carbon or ecological footprint by providing locally produced food. There are **2** allotment sites owned and managed by South Lanarkshire Council.

- Allers Allotments, East Kilbride – There are **90** plots, covering an area of **17,500 m²**.
- Richmond Place, Rutherglen - Space for **17** plots, covering an area of **4,059 m²**.

Recreational open space and greenspace

Good quality greenspace can improve urban neighbourhoods and offer many benefits to the people who live there. The converse is also true and the problems associated with poorly designed or neglected open spaces can have a significant, negative effect on people's quality of life, their perceptions of safety and the way they view their community and the local environment.

A greenspace audit has been undertaken across all of South Lanarkshire's larger settlements, using a classification and methodology recommended in Planning Advice Note (PAN) 65, Planning for Open Space. An early output from the audit was the compilation of 'settlement profiles' and the data from these are set out in the following tables. It should be recognised that the audit has only been conducted on open spaces within the boundaries of each settlement. Many of South Lanarkshire's settlements are bordered by quite extensive areas of woodland and other accessible, semi-natural areas and these require to be built into future quality models if an accurate picture of public access to open space is to be maintained.

The total area and types of greenspace within South Lanarkshire's main settlements and its breakdown among the four core greenspace components are shown in **Table 4.2**. East Kilbride has the highest area of greenspace (**823 ha**), reflecting its development as a 'new town' for which greenspace was a key component to the planning provisions.

Table 4.2: Classification of greenspace per settlement area (2008)

Settlement	Greenspace Type and Area (ha)				
	Total area	Semi Natural	Parks/ Gardens	Amenity	Sports
East Kilbride	823	272	33	379	58
Cambuslang/Rutherglen	408	143	12	135	69
Hamilton	379	121	34	140	49
Blantyre	122	31	13	51	4
Larkhall	115	14	3	47	39
Carluke	75	14	9	26	16
Uddingston	75	26	0	24	25
Lanark	69	7	9	48	1
Strathaven	69	14	12	17	14
Bothwell	51	1	0	18	31
Stonehouse	39	6	12	17	3
South Lanarkshire	2,225	649	137	902	309

Source: South Lanarkshire Council

There is variation in the area of greenspace components per 1,000 population across settlements (**Table 4.3**). Interestingly although East Kilbride has the greatest greenspace area, Uddingston has the highest concentration of greenspace per 1,000 population (**13.4 ha/1000 population**), thus suggesting more greenspace within the settlement boundary per head of population.

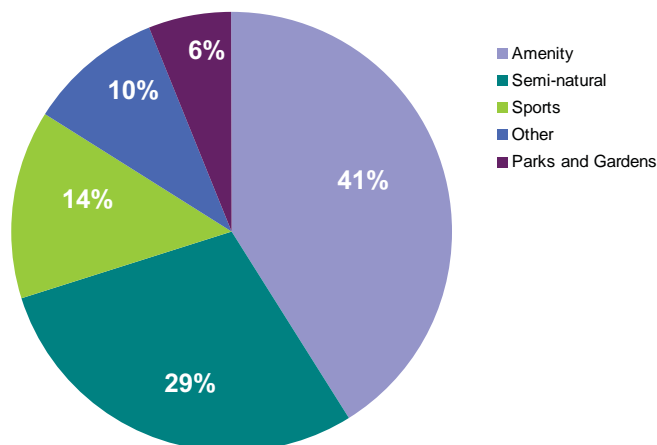
Table 4.3: Provision of greenspace ha/1,000 population within settlements (2008)

Settlement	Greenspace Area (ha/1000 population)		
	Overall provision	Amenity greenspace	Semi-natural greenspace
East Kilbride	11.0	5.1	3.5
Cambuslang/Rutherglen	7.5	2.4	2.6
Hamilton	8.0	3.0	2.5
Blantyre	7.0	2.8	1.8
Larkhall	7.5	3.1	0.9
Carluke	5.6	2.0	1.1
Uddingston	13.4	4.3	4.6
Lanark	8.3	5.8	0.8
Strathaven	8.3	5.8	1.8
Bothwell	7.9	2.8	0.2
Stonehouse	7.7	3.3	1.2

Source: South Lanarkshire Council

Figure 4.2 shows the total areas of each component within South Lanarkshire as a whole, expressed as a percentage. There is a high level of amenity greenspace (**41%**), with semi-natural greenspace equating to **29%** of the total greenspace area. These greenspace areas provide the greatest opportunity to improve the local environment and provide some facilities for wildlife. The enhancement of amenity areas to accommodate wider habitat forms could potentially increase biodiversity substantially on a local scale. This would increase the quality of the environment and potentially improve their amenity benefits.

Figure 4.2 Components of greenspace in South Lanarkshire



Source: South Lanarkshire Council

The Council's Greenspace Strategy sets an objective to develop and implement a quality model for greenspace. This will be developed from the audit already undertaken and will again be based upon the greenspace categories recommended in PAN 65. Mapping greenspace according to categories was piloted in the North Hamilton and Blantyre area in 2003 and has subsequently been rolled out across South Lanarkshire. Work is currently underway to develop a wider suite of qualitative measures for greenspace.

4.3 Outdoor access

Outdoor access to the network of urban greenspace and the rural countryside is essential to provide residents and visitors with opportunities for recreational pursuits such as walking, cycling and horse riding. It is also important as it contributes to sustainable transport and health and wellbeing priorities by encouraging people to choose to walk or cycle for short journeys and adopt more active lifestyles. The network of paths and tracks identified in the South Lanarkshire Core Paths Plan is an important asset and contributes to the ability of individuals to enjoy the rich and diverse cultural and natural heritage of the area. Many of these footways and cycle path routes, particularly those in towns and villages also function as components of the sustainable transport network infrastructure providing people with alternative non-motorised routes for commuting and access to local services and facilities.

Rights of Way

There are **324** recorded Rights of Way across South Lanarkshire, representing **476 km** of recognised access routes. The majority of these routes are located within rural areas and many are identified as core paths or wider network routes in the South Lanarkshire Core Paths Plan.

Core paths network

The Land Reform (Scotland) Act 2003 gives everyone statutory access rights to most land and inland water, however these rights must be exercised responsibly. This Act also places obligations and responsibilities on the Council, including the duty to produce a 'Core Paths Plan'.

In undertaking these duties the Council has produced and adopted a Core Paths Plan which identifies a network of core paths extending to **775 km**. In addition, it identifies a network of aspirational core paths extending to **229 km**, **1,203 km** of existing wider network routes as well as **114 km** of core water routes and **33** water access points. In total, this represents an existing and recorded land and water based access network of **2,321 km** (Table 4.4).

Table 4.4: Distribution of network paths across the Council areas, 2015

Category	Area	Length (km)
Core path	Clydesdale	343
	East Kilbride	178
	Hamilton	187
	Cambuslang/Rutherglen	67
	Total core path length	775
Aspirational core path	Clydesdale	147
	East Kilbride	55
	Hamilton	20
	Cambuslang/Rutherglen	7
	Total aspirational core path length	229
Wider network	Clydesdale	745
	East Kilbride	252
	Hamilton	147
	Cambuslang/Rutherglen	59
	Total wider network path length	1,203
Core water routes	River Clyde: Abington to Falls of Clyde	49
	River Clyde: Stonebyres to Cambuslang	46
	Avon Water: Glassford Bridge to River Clyde	19
	Total core water routes length	114

Source: South Lanarkshire Core Paths Plan

There is a more extensive network of paths and tracks including pavements, other informal or unrecorded routes which are available for public use under the general access rights provisions of the Land Reform (Scotland) Act, 2003.

On an area basis, Clydesdale has **20 km/1000 population** of path network, however due to the size of the area this equates to **9 km/1000 ha area**. In contrast, the densely populated areas of Cambuslang and Rutherglen have **2 km/1000 population** of path network but due to the actual size of the area this equates to **49 km/1000 ha area**.

The Core Paths Plan provides people with a network of 'key' paths that will be maintained and signposted. The path network has been selected in a manner that balances public access with the land-management and privacy needs of land and property owners while considering sensitive environmental constraints.

Footpath data counts

User counters have been installed across several of the key footpath and cycle networks within South Lanarkshire. The data is collected using either pressure sensitive pads or induction loops installed within the path surface or beam splitter counters which record the number of pedestrians or cyclists passing. As the data recorded includes the time and date during which a count is made it allows the information to be analysed in a number of ways including hourly, daily, monthly or yearly. As well as the absolute number of users at a particular location it is useful to see seasonal variations and annual trends in the level of path usage.

Table 4.5 provides a summary of the level of use of sections of the path network at various locations across South Lanarkshire. Based on the data available it appears that access activity has generally remained steady over recent years. Variations can be accounted for with such counters between 2007 and 2012. Although a few paths have had an increase in use over recent years, overall usage has remained steady.

Table 4.5: Summary of path network use (2007 – 2014)

Year	Clyde Walkway							Biggar	Tinto Hill	Douglas
	Rosebank	Crossford	West Brownlee	Lanark	Falls of Clyde					
					Reserve Entrance (New Lanark)	Bonnington Linn	Corra Linn			
2007	10,500	22,000	-		-	-	-	-	-	
2008	9,500	27,500	-	10,000	-	20,000	77,000	27,000	13,000	16,500
2009	10,000	23,000	-	12,500	-	24,500	77,000	25,000	21,000	18,000
2010	10,000	25,000	-	15,000	-	24,500	59,000	29,000	20,500	17,000
2011	9,000	27,000	-	13,000	-	15,000	62,000	34,000	19,500	17,000
2012	9,500	25,000	-	12,000	-	17,000	60,000	35,000	20,000	17,500
2013	-	-	-	-	-	25,500	-	-	-	-
2014	-	27,500	7,000	-	84,000	-	-	-	-	-
Year	Chatelherault			Cambuslang Park	North Haugh (NCR74) Strathclyde Park entrance	Morgan Glen		Braidwood		
	Riccarton Path	Old Avon Bridge (NCR74)	Sunnyside Path			Avon Road entrance	Millheugh entrance			
2013	-	-	-	-	-	-	-	-		
2014	66,000	83,000	24,000	158,000	90,000	18,000	22,000	12,000		
Year	Forth	Lower Nethan Reserve (Crossford)	Redlee's Park Blantyre	Langlands Moss LNR, East Kilbride	Calderglen Country Park*	Whitelee Windfarm				
2009	14,000	-								
2010	15,000	-								
2011	15,500	-	-	-	798,000	41,000				
2012	16,000	-	5,000 (Sept – Dec)	8,500 (July – Dec)	874,000	28,000				
2013	-	6,000	-	22,000	926,000	-				
2014	-	-	23,000	25,500	907,500	51,500				
Figures rounded to the nearest 500				Data not available for all locations due to some counters becoming inactive						
*Visitor numbers to the Park										

Cycling network

The National Cycle Network is a comprehensive network of safe and attractive routes to cycle. The UK Network consists of about 12,000 miles of traffic-free cycle paths, quiet country lanes or traffic-calmed roads. South Lanarkshire Council works with partners such as Strathclyde Partnership for Transport (SPT), Sustrans and Cycling Scotland to fund and develop cycling projects across the area. Recent projects have included:

- 40 new cycle lockers at train stations in South Lanarkshire to encourage commuters to cycle part of their journey,
- New cycle shelters at nine primary schools.
- Extension of the National Cycle Route (NCR) 74 from Larkhall via Stonehouse and Kirkmuirhill to Lesmahagow.
- Creations of NCR 756 cycle path linking East Kilbride and Cambuslang/ Rutherglen.
- 'Connect 2' cycle route, forming part of NCR 74, from Hamilton to Larkhall via Chatelherault and Strathclyde Country Parks.
- New cycle routes linking Hamilton to Rutherglen via Blantyre and Cambuslang.
- New cycle route linking Hamilton to East Kilbride.
- Improvements to the Lanark to Biggar cycle route.
- Design and implementation of sections of the East Kilbride Cycle Network.

Access expenditure

Total spend on the management and development of the outdoor access infrastructure of South Lanarkshire is difficult to estimate as a variety of different functions and services within the Council as well as external organisations, agencies and private landowners contribute to overall capital and revenue expenditure. In terms of employee costs associated with the two full time staff posts with responsibility for the access function, this revenue expenditure is currently estimated at £87,000 per annum. Capital expenditure on outdoor access related infrastructure projects undertaken by the Council in the financial year 2014-2015 total £1.387m and is summarised in **Table 4.6**.

Table 4.6: Capital access projects undertaken by South Lanarkshire Council (2014/2015)

Project	Expenditure (£)
Provision of cycle shelters at three Primary Schools	13,000
National Cycle Route 756 (East Kilbride to Rutherglen)	10,000
National Cycle Route 74 (Blantyre Ramp: Blackwood to Kirkmuirhill: Merryton to Stonehouse phase 1; Hamilton to Rutherglen; Lesmahagow	1,010,000
East Kilbride Cycle Network	244,000
Cycle Counter monitoring equipment	2,000
Hamilton to East Kilbride Cycle Routes (Blantyre section)	33,000
Clyde Walkway extension (feasibility study)	25,000
Clyde and Avon Valley Landscape Partnership (connecting communities access project design study)	25,000
Clyde Walkway maintenance	20,000
Core Path network management small scale works	5,000
Total	1,387,000

4.4 Built facilities

South Lanarkshire has a number of purpose-built facilities ranging from sports facilities to community halls. The purpose of such facilities is to promote an active lifestyle, provide a sense of community identity and encourage learning. These facilities are important for promoting wellbeing and improving health of the general population in the area.

Arts and craft facilities

South Lanarkshire has **4** performing arts venues/theatres in East Kilbride, Hamilton, Lanark and Rutherglen. There is **1** dedicated Arts Centre in East Kilbride which is a venue for drama, visual arts, music, comedy and film, as well as arts courses and children's activities.

Community centres and halls

There are **81** halls and community centres across South Lanarkshire for community use, from community groups to organised activity classes. The Council also has **6** conference venues.

Community education centres

The Council has completed the Schools Modernisation Programme for secondary schools in South Lanarkshire and is currently undergoing a programme for its primary schools.

Primary schools

The Council has **125** primary schools for children aged 5 to 12 years throughout South Lanarkshire, many with nursery facilities and units for children with additional needs. There are just over 25,000 children of primary age in the area. A major modernisation programme to upgrade all primary schools is underway to provide **113** new schools and refurbish **12** existing schools.

Secondary schools

The Council has **17** secondary schools which cater for about 20,000 pupils in the 12 to 18 years of age group.

Additional support schools

South Lanarkshire provides **7** additional support schools. Some of these share a campus with other schools and cater for pupils of primary and secondary school age. These are:

- **Greenburn School** in East Kilbride caters for children with complex health needs as well as moderate to severe learning difficulties and shares a campus with Maxwellton Primary.
- **Hamilton School for the Deaf** caters for children with significant hearing impairment from both North and South Lanarkshire.
- **KEAR Campus**, Blantyre, opened in May 2013 and replaces **Kittoch and Ridgepark Schools**. This campus provides a modern, new facility designed to accommodate the specific educational needs of pupils with social, emotional and behavioural difficulties and incorporates a separate 'cottage' provision that offers more intensive support.
- **Rutherglen High** and **Sanderson High** cater for secondary pupils with a broad range of support requirements.
- **Victoria Park School** in Carluke focuses on children with severe and complex needs.
- **West Mains School** in East Kilbride caters for young children with speech, language and communication disorders.

Community learning and development

Youth Learning Service operates a network of **10** dedicated youth centres and **1** support-base delivering a wide range of activities. Many activities are provided using community halls, schools and recreational facilities. In addition the Youth Trust supports a further **3** youth bases.

Adult learning is delivered through **2** Community Learning Teams and **3** Home School Partnership Area Teams. Each has a dedicated base and uses various community facilities.

Colleges and Universities

South Lanarkshire College has a purpose built College Campus in the Scottish Enterprise Technology Park, East Kilbride.

University of the West of Scotland has Bell campus in Hamilton. The main University campus is in Paisley.

Libraries

There are **24** public libraries across South Lanarkshire, offering a range of services to promote literacy development, support digital learning and encourage pastime reading. The Council also provides **2** mobile libraries and a home delivery service for housebound readers.

Museums

South Lanarkshire is rich in heritage, reflected in the **10** museums within the area with Biggar Museum incorporating a further **7** smaller museums (including the Biggar Gas Works).

Sports and leisure facilities

The health of South Lanarkshire's people is a continual concern, with Scottish health statistics indicating that two thirds of the Scottish adult population are at risk from physical inactivity and the health factors associated with this, including coronary heart disease. Therefore, it is important for the Council to encourage adults and young people to become more active throughout their lives, whether through participation in active sports or by increasing their leisure activities.

Many of the sports and leisure facilities in the area are managed by South Lanarkshire Leisure and Culture including:

- **23 sports and leisure facilities** including health suites, gyms, fitness studios, sports halls and running tracks.
- **6 municipal golf courses:** four 18-hole courses and two 9-hole courses including the mini golf course at Brancumhall, East Kilbride. There are also several private courses in the area.
- **1 ice rink** that caters for skating and curling. The private ice rink in Hamilton allows public use.
- **52 outdoor recreation facilities**, including tennis courts, football pitches, putting greens, bowling greens and boating ponds. In addition, a purpose-built outdoor recreational teaching facility at James Hamilton Heritage Park has a 16 acre loch and provides a range of water sports, from canoeing to windsurfing.

The South Lanarkshire Sports Pitch Strategy was approved in 2015. It takes stock of the Council's existing grass and synthetic pitch portfolio and sets the broad direction for future pitch provision across the area.

4.5 Housing

Housing is one of the most basic human needs and having somewhere to live that is safe, warm and sustainable provides a firm basis for other aspects of life. There are around **146,000** homes in South Lanarkshire, with about **22%** of households living in homes rented from a social landlord and **78%** in homes which are privately owned or rented as set out in **Table 4.7**.

Table 4.7: Housing stock by tenure and area, 2015

Tenure	Clydesdale	East Kilbride	Hamilton	Rutherglen and Cambuslang	South Lanarkshire	
Council	17.7%	13.8%	20.0%	17.5%	25,250*	17.3%
Registered Social Landlord	4.9%	2.3%	4.0%	7.7%	6,500	4.5%
Private Rented	9.2%	10.0%	10.5%	11.2%	15,000	10.3%
Owner occupied	68.2%	73.9%	65.5%	63.6%	99,250	68.0%
All tenures	28,500	39,750	49,750	28,000	146,000	100%

*Housing stock figures are subject to change with new buildings, tenure changes and regeneration. The total figures have been rounded to the nearest 250 to provide robust estimate of the distribution of tenure by area.

Sources: National Records Scotland 2012 Based Estimates; National Landlord Registration Database; Annual Performance and Statistical Return for Registered Social Landlords; South Lanarkshire Council

The South Lanarkshire Local Housing Strategy (LHS), 'Better Homes, Thriving Communities', sets out the Council's plans for the development and improvement of housing and related services in the area. The Strategy is set out in six themes. These are:

- Balanced housing markets
- Sustainable neighbourhoods
- Addressing homelessness
- Investing in housing quality
- Meeting particular housing needs
- The rural housing challenge

The primary purpose of the LHS is to ensure that we have an effective local housing system by having a sufficient number of homes, of the right size, type and tenure, in the right locations to meet the current and future needs of households in South Lanarkshire. The six themes are integrated and overlapping and they contribute to a wide range of national objectives. For example, actions around 'Investing in housing quality' contribute towards improving the health, wellbeing and independence of all our residents and are crucial components in creating and maintaining attractive and sustainable neighbourhoods and communities.

The LHS continues to steer improvements to housing sustainability, linking with the Local Development Plan and other strategies, working with all partners and stakeholders to ensure housing meets the long term needs and demands of all residents.

4.6 Landscape

South Lanarkshire's landscape is diverse, with the Lowther hills dominating the southern fringes of the area, with a mixture of rolling farmland and river valleys stretching across the majority of the area and more urbanised landscapes in the north. The landscape and its subsequent components are important assets giving South Lanarkshire its distinctive character, promoting community wellbeing, supporting local biodiversity and contributing to the local economy.

Landscape Character Areas

South Lanarkshire has a mosaic of distinct landscape types that inter-relate the natural, physical, cultural and historical characteristics of the area. **Figure 4.3** illustrates the physical differences, and **Table 4.8** provides a summary of the area relating to each physical characteristic. The majority of the area is dominated by upland landscapes (**49%**), which include; plateau moorland, southern upland and foothills. The River Clyde and its tributaries account for **26%** through upland glen, upland river valley, incised river valley and broad urban valley.

Table 4.8: Areas for individual landscape characteristics within South Lanarkshire

Landscape characteristic	Area covered	% of South Lanarkshire Area
Broad urban valley	1604*	1%
Urban	7239*	6%
Foothills	20575	16%
Incised river valley	7880**	6%
Plateau farmlands	15745	12%
Upland river valley	19855	15%
Rolling farmlands	5616	4%
Old red sandstone hills	4394	3%
Plateau moorland	10427	8%
Upland glen	5791	4%
Southern upland	32144	25%
*includes areas shared with North Lanarkshire		
**includes areas shared with North Lanarkshire and Glasgow		

Source: South Lanarkshire Council

Figure 4.3: Landscape characteristics across South Lanarkshire



Source: South Lanarkshire Council

Through local development planning, the use of Landscape Character Assessments provides a shift away from policies for locally designated areas towards an emphasis on maintaining and enhancing the distinctive character everywhere. As well as being a valuable tool for development plans, landscape character assessment along with landscape capacity assessment can assist in the assessment of development potential or the capacity of the landscape to accommodate various forms of development, including wind farm locations and mineral extraction. This provides a more robust and defensible basis for planning designations such as Green Belt or Scenic Area.

Protected Landscape

Protected Landscapes are areas designated under UK or international status. Such designations in Scotland include National Parks and National Scenic Areas. There are no protected landscape areas defined on a UK or international basis in South Lanarkshire.

Special Landscape Areas

In 2010, the Council approved a review of local landscape designations in South Lanarkshire. This review identified 6 Special Landscape Areas (SLA) which replaced the former Regional Scenic Area (RSA) and Areas of Great Landscape Value (AGLV). The SLAs are largely based on similar areas to the former RSA and AGLVs, however a completely new SLA has been identified at Lower Clyde and Calder Glen, which recognised the local landscape value of the river valleys in the area. Although local landscape designations do not afford any statutory protection of the landscape, the Council recognises their importance and the quality of the landscape in these areas and policies in

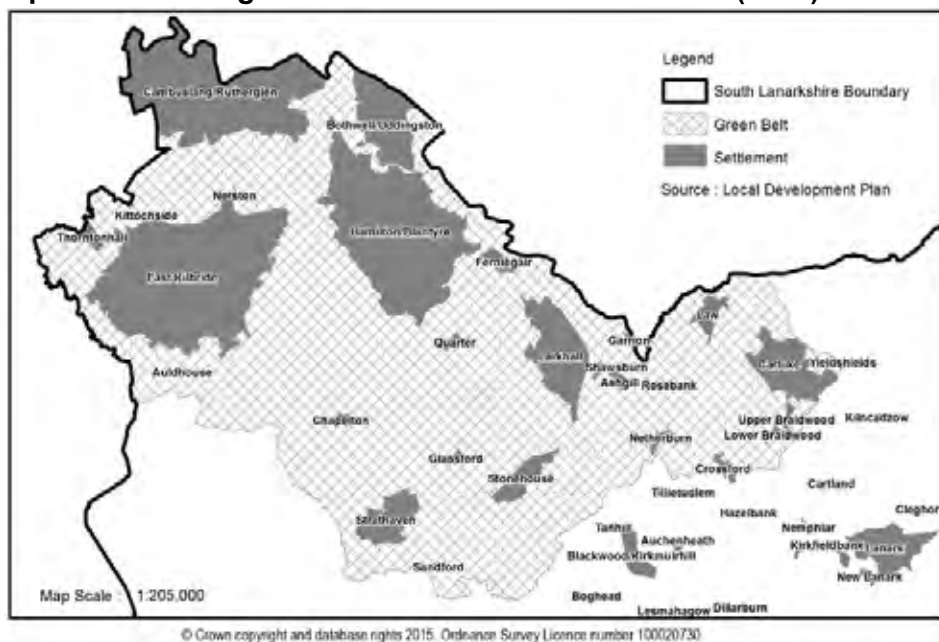
the Local Development Plan require that any new development must not adversely affect the quality for which these areas have been recognised.

Approximately half of the land area of South Lanarkshire is designated as Special Landscape Areas, the majority concentrated in the west and south including most of upper Clydesdale.

Greenbelt

Areas of greenbelt in South Lanarkshire are confined to areas surrounding larger settlements in the north. These areas are under pressure from further development. Although these areas are not defined as an environmental asset, they are important to the overall value of the area, particular in maintaining local access to the countryside. The greenbelt in South Lanarkshire surrounds East Kilbride and Hamilton, extending down to Strathaven and across to Carluke, covering an area of **217.887 km² (Figure 4.4)**. This is a slight reduction from the coverage of 219 km² in 2013. The change reflects the expansion of settlements as set out in the South Lanarkshire Local Development Plan.

Figure 4.4: Expansion of the greenbelt within South Lanarkshire (2015)



Historic Gardens and Designed Landscapes

Historic Gardens and Designed Landscapes are formally recognised for their local historic and cultural importance. There are **7** historic gardens in South Lanarkshire and these are described in **Table 3.5**.

Country Parks

There are **3** designated country parks in South Lanarkshire, which South Lanarkshire Council wholly or partially manage. These are Chatelherault Country Park, Calderglen Country Park and Hamilton Low Park which forms part of Strathclyde Country Park. The country parks provide general outdoor access within a managed countryside setting.

4.7 Minerals

Minerals have an important role in the local economy. As well as for construction purposes they are used in a diverse range of processes and products including iron and steel smelting and the manufacture of glass, plastics, cements, medicines, food and cosmetics. They are required for all construction projects, including homes, schools, hospitals and maintenance of transport networks.

In order to fully adopt the principles of environmentally sustainable development a reassessment of the use of finite and environmentally sensitive natural resources such as minerals is required.

However, until sustainable alternative material, particularly for aggregates, is identified and used, it is essential that the future extraction of minerals is carefully planned.

Geology

South Lanarkshire has a diverse geology consisting of sedimentary, igneous and metamorphic rocks. These are suitable for producing hard-rock aggregates, natural building stone and provide coal, fireclays and mudstones suitable for brick making. There are also deposits of sand and gravel which provide natural aggregates for construction industries. These are found particularly along the river valleys of the Avon, Mouse, Medwin and Clyde. South Lanarkshire can be divided into a number of discrete geographical areas, each having its own minerals resource potential (**Table 4.9**). Mineral extraction falls within the geological layout of the area.

Table 4.9: Principal mineral resources within geological areas in South Lanarkshire

Geological Area	Mineral Resource		
Avon Valley	• Sand and gravel	• Clay	• Iron Ore
	• Coal	• Peat	
Douglas Valley	• Coal	• Fireclay	• Peat
	• Sand and gravel		
Forth Plateau	• Coal	• Fireclay	
Mouse/Medwin Valley	• Sand and gravel	• Peat	
Clyde Valley	• Sand and gravel	• Sandstone	• Whinstone
	• Coal	• Clay	• Peat

Sand and gravel

South Lanarkshire contains extensive deposits of sand and gravel along the Clyde and Avon valleys and, to a lesser extent deposits in the valley of Medwin and the Douglas Water valley. Current estimates for 2015 suggest that South Lanarkshire is producing **1.35 Mt** of sand and gravel per annum from **6** operational sites, which is comparable to **1.45 Mt** estimated for 2000/01. The consented sites are estimated to have **18.7 Mt** of sand and gravel in reserves.

The growth of policy emphasis on sustainable development and the encouraged use of secondary and recycled aggregate materials, including construction and demolition waste as alternatives to primary aggregates has been widely adopted.

Hard rock

Aggregates are sourced from a variety of places. The majority of aggregates occur as natural materials, including hard rocks crushed to the required particle sizes. Crushed rock is used primarily as a road-stone and in concrete. South Lanarkshire is a net importer of hard rock materials because the quality and quantity of indigenous aggregates are unsuitable for use in road surfacing application. Sources of suitable aggregate are located to the immediate north of the authority area.

There are **3** operational hard rock quarries in South Lanarkshire providing aggregate material for a variety of end uses including concrete aggregate, rail ballast, building blocks and synthetic cobbles and paviors. These quarries are expected to produce approximately **2.3 Mt** of aggregate per annum, with the sites estimated to have **52.2 Mt** in reserve.

Coal

Scotland currently produces approximately **3 Mt** of coal per year. There are two main areas of coal deposits which, when taken together, account for approximately **40%** of Scotland's remaining surface coal resources.

Coal production in South Lanarkshire was predominately undertaken by the Scottish Coal Company Ltd (Scottish Coal). However, in April 2013, they went into liquidation and their coal extraction operations ceased. Prior to this, Scottish Coal operated two coal mines within the

Douglas Valley (Broken Cross and Mainhill). The majority of the Broken Cross site is in the process of being restored and Mainhill is currently awaiting restoration. Coaling is completed at the Glentaggart coal mine, near Glespin and final restoration commenced in summer 2015. In June 2015, there were no opencast coal sites in production in South Lanarkshire, with production ceasing at Broken Cross. An opencast coal site has been consented at Glentaggart East but is not yet commenced. Total economic coal reserves in South Lanarkshire are estimated at about **27 Mt**.

Peat

Although there are extensive areas of peat across South Lanarkshire, extraction is only from **4** low intensity sites. The peat is principally being used within the horticulture sector. These sites extract approximately **40,000 m³** of peat per annum (based on 2010 mineral survey).

Mineral recycling

The aim of sustainable development is to decrease the quantity of minerals used without slowing economic growth. This can be achieved by increasing the efficiency of use, increasing the recycling of inert material and using alternative material. Segregation of all recoverable materials helps to maximise efficient use of bulk mineral material. As well as mineral recycling, soil recycling and green composting provide efficient methods for increasing the recycling of inert material.

At 2015, there were **5** consented mineral recycling facilities in South Lanarkshire, providing recycled mineral-based material and soil. Information gathered for the Minerals Local Development Plan indicates that **100,000 tonnes** of recycled material is produced per annum through these facilities.

Bings

Waste heaps or 'bings' arise from various types of mineral workings. The main bings found in South Lanarkshire are coal spoil from deep mining although other wastes such as spent oil shale, ironstone, slags, metal ore waste and lime wastes do occur. Bings are normally regarded as having a negative environmental impact in an area due to their visual intrusion and potential contamination to the land and water courses. However, bings can also be important in terms of nature conservation interest because of their highly distinctive environments (for example, acidic, nutrient poor, high heavy metal content) and can often support distinct vegetation or rare species worthy of protection. There is an increasing awareness that the material within existing bings have a mineral potential for use in road construction and building material. These sites provide an additional mineral source in the area. There are **24** existing bings in South Lanarkshire, including **4** bing reclamation sites, many can potentially have their mineral content extracted for road and other construction uses.

5 Waste

SEA objectives that relate to waste

- To minimise the generation of waste.
- Maximise recycling and composting to reduce waste going to landfill.

The amount of waste generated and the subsequent methods of treatment are of growing social, economic and environmental concern. The types of waste produced, its transportation, treatment and/or disposal can all be detrimental to the environment. Adopting good integrated waste management practices is therefore essential for minimising these environmental impacts and protecting human health.

The European Waste Framework Directive (2008/98/EC) sets out a waste hierarchy for the management of waste which is intended to drive waste prevention and reuse, significantly increase recycling rates and reduce the amount of waste sent to landfill.

Waste can be regarded as a potential resource, with increased levels of reuse, recycling and energy recovery contributing to sustainable development. Article 4 of the Directive establishes the waste hierarchy of prevention, preparation for reuse, recycling, other recovery (for example, energy recovery) and finally, disposal. The Council and other organisations must have regard to the hierarchy when considering their options for managing waste.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

The Current status is shown by the following colours:



Good



Fair



Poor



Limited data

The trend direction is shown with the following arrows:



Improving



No change



Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Waste generation	G	↑	The level of waste generated in South Lanarkshire continues to reduce across all sectors, with individual households now producing an average of 1.04 tonnes per annum.
Waste treatment	G	↑	The level of recycling and composting of waste has continually increased across South Lanarkshire, with 47.4% of household waste recycled or composted in 2014/2015. Waste disposed via landfill has, as a consequence, significantly reduced.
Waste management	G	↑	The recycling rate at Household Waste Recycling Centres currently exceeds 72% .
Environmental waste	G	↑	Street cleanliness in South Lanarkshire continues to improve. South Lanarkshire achieved the third highest ranking of all Scottish local authorities in the Street Cleanliness Score in 2014/2015.

Baseline situation

The majority of the waste collected by South Lanarkshire Council is municipal waste, the amount of which is reducing year on year. It is important that the waste hierarchy is considered to ensure both a reduction in the amount of waste being generated and also the amount being disposed of to landfill. It is imperative that the methods used to manage do not negatively impact on the environment.

Waste can impact the environment in several ways, including:

- The emissions of air pollutants such as greenhouse gases, dioxins and nitrogen oxides.
- The discharge of landfill leachate to groundwater and surface water.
- The reduction in the amount of land available for development or amenity uses as a consequence of the presence of landfill sites.
- Localised litter problems.

The Council is committed to meeting the targets set within Scotland's Zero Waste Plan by reducing the amount of waste being disposed of to landfill and increasing re-use, recycling and composting rates. To achieve these targets, the Council has invested heavily in infrastructure to increase the level of household and municipal waste being recycled through the development of Household Waste and Recycling Centres (HWRC) and the extension of household kerbside collection services. The Council is committed to providing facilities to enable 100% of households in South Lanarkshire to recycle certain key dry recyclable materials, such as plastics and metals, by 2017.

5.1 Waste generation

Waste generated in South Lanarkshire has reduced significantly since 2001/2002 (**Table 5.1** and **Figure 5.1**). This is despite a steady increase in South Lanarkshire's population. The economic downturn is likely to have been a factor in the reduction of waste generation. During 2014/2015, the Council managed a total of **167,273 tonnes** of waste.

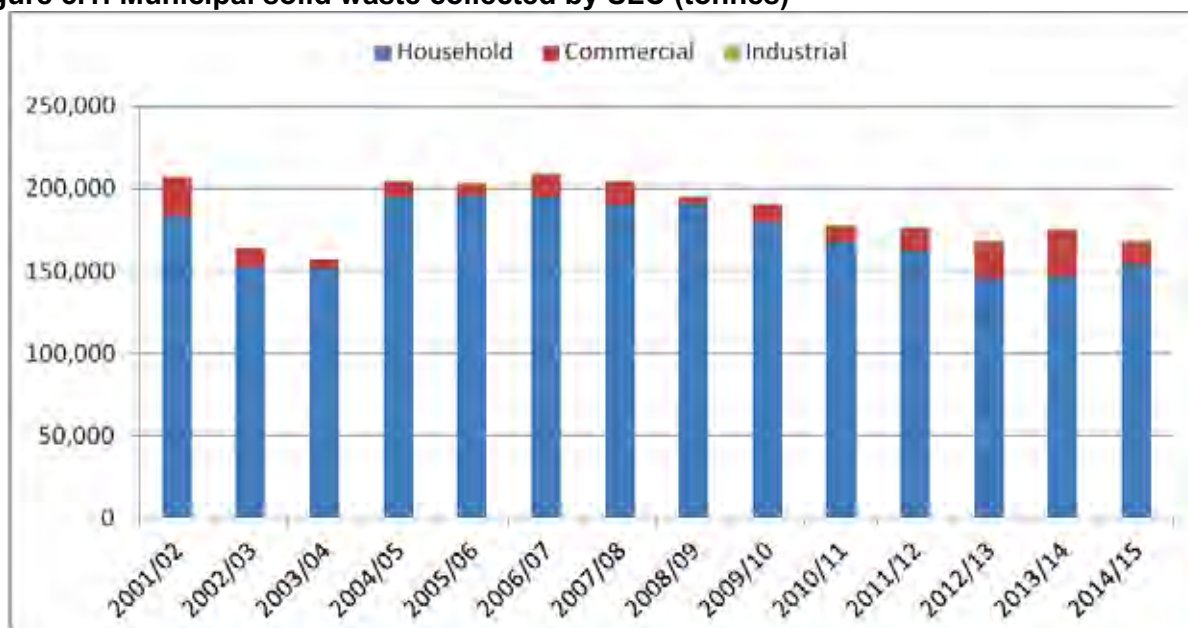
Table 5.1: Municipal solid waste collected by SLC (tonnes)

	Households	Total waste collected	Household waste	Commercial waste	Industrial waste	Waste per household
2001/2002	131,765	207,059	183,059	24,000	-	1.39
2002/2003	132,995	172,512	152,860	10,425	-	1.22
2003/2004	134,611	178,373	150,908	6,365	-	1.21
2004/2005	136,681	204,443	194,520	9,684	239	1.42
2005/2006	139,108	202,940	195,634	7,069	237	1.41
2006/2007	140,861	209,485	194,665	13,313	1,507	1.38
2007/2008	142,364	204,513	190,158	14,331	23	1.34
2008/2009	144,565	194,804	190,914	3,832	58	1.32
2009/2010	144,565	189,864	179,527	10,335	20	1.24
2010/2011	146,239	177,041	167,609	9,412	20	1.15
2011/2012	144,856	175,855	161,958	13,878	19	1.12
2012/2013	145,621	167,445	144,614	22,797	34	0.99
2013/2014	146,641	174,649	146,513	28,119	17	1.00
2014/2015	147,474	167,273	153,972	13,282	19	1.04

Source: South Lanarkshire Council

Figure 5.1 shows the change in the Council's waste arisings over recent years. In the five year period between 2007/2008 and 2012/2013, municipal waste arisings fell year on year by an average of 7,416 tonnes per annum. Waste arisings rose slightly during 2013/2014 but fell again in 2014/2015 meaning the amount of waste collected by the Council is over 37,000 tonnes less than it was seven years ago. As well as the economic downturn, other factors such as national initiatives within the manufacturing and packaging sectors have also led to a reduction in the amount of waste produced. Legislative drivers, such as the Single Use Carrier Bags Charge (Scotland) Regulations 2014, which came into force in October 2014, will also have had an impact on the types and amounts of waste produced now and in the future.

Figure 5.1: Municipal solid waste collected by SLC (tonnes)



Source: SEPA and South Lanarkshire Council

Household waste

South Lanarkshire Council collected **153,972 tonnes** of household waste in 2014/2015 (**Table 5.1** and **Figure 5.1**), a reduction of more than **21%** from the peak levels of waste generated in 2005/2006. The number of households in South Lanarkshire has steadily increased in recent years, however, the amount of waste generated per household decreased from 1.41 tonnes in 2005/2006 to **1.04** tonnes in 2014/2015.

Commercial and industrial waste

Commercial and industrial waste includes business waste, construction and demolition waste and waste from agriculture, fishing and forestry. These range from sole traders to large industrial complexes. Producing data on this category of waste is complex because the Council only collects a small amount of the waste generated. The Council has information regarding the amount of commercial waste it collects (**Table 5.1**), however, as it does not provide a collection service to businesses, there is a data gap relating to the amount of this type of commercial and industrial waste generated in South Lanarkshire. This is compounded by the fact that there is no legal requirement for businesses to report on the quantities of waste they produce.

In 2004 and 2006, SEPA made use of surveys to arrive at estimates for the amount of business waste produced in the various Strategic Planning Areas, as reported in earlier State of the Environment Reports. In recent years, SEPA has developed a new methodology using data received from operators of licensed and permitted waste management sites and from operators of activities exempt from full waste management licensing to report on the amount of waste generated. From 2012 this information was available for each local authority in Scotland. **Table 5.2** shows the types and amounts of business waste generated in South Lanarkshire in 2012.

Table 5.2: Business waste generated in South Lanarkshire, 2012

Waste type	Amount (Tonnes)	Waste type	Amount (Tonnes)
Spent solvents	76	Acid, alkaline or saline wastes	155
Used oils	7,385	Chemical wastes	2,138
Industrial effluent sludges	187	Sludges from waste treatment	0
Metallic wastes	10,530	Health care and biological waste	1,617
Glass wastes	5,999	Rubber wastes	1,414
Paper and cardboard waste	1,505	Plastic wastes	1,128
Wood wastes	1,842	Textile wastes	514

Waste type	Amount (Tonnes)	Waste type	Amount (Tonnes)
Waste containing PCB	29	Discarded equipment	807
Discarded vehicles	2,548	Batteries and accumulator waste	153
Vegetal wastes	6,827	Animal and mixed food waste	2,517
Animal faeces and urine	5,903	Household wastes and similar	45,967
Sorting residues	0	Mixed and undifferentiated material	1,293
Common sludges	474	Mineral wastes from construction and demolition	183
Other mineral wastes	3,682	Combustion wastes	12
Soils	1,906	Mineral wastes (waste treatment)	14
Dredging spoils	26		
Total: 106,831			

Source: SEPA

Commercial and industrial waste includes business waste, waste generated by the public sector and Construction and Demolition Waste. Construction and Demolition Waste is important because it makes up between 40 – 50% of waste generated in Scotland.

Construction and demolition Waste

Waste generated within the construction and demolition industry is diverse in its very nature and can include soils, concrete, bricks, glass, wood, plasterboard, asbestos, metals and plastics. In 2010, Scotland produced 7.47 million tonnes of construction and demolition waste (**Table 5.3**), about 80% of this was mineral waste. SEPA estimated that **1,026,408 tonnes** of commercial and demolition waste was generated in South Lanarkshire in 2010, the second highest in Scotland. Due to the demographic nature of the area, the Glasgow and the Clyde Valley Waste Strategy Area (GCVWSA) contributed to almost 50% of the total construction and demolition waste generated in Scotland (3.73 million tonnes of 7.47 million tonnes in 2010).

Table 5.3: Construction and demolition waste arisings within the GCVWSA

	Total (tonnes)
2008	8,633,219
2009	7,600,504
2010	7,472,754

Source: Derived from statutory waste data returns held by SEPA

Table 5.4 presents data on construction and demolition waste managed in GCVWSA. This data is derived from statutory waste returns held by SEPA. Construction and demolition waste managed within GCVWSA decreased by 4% (168,411 tonnes) between 2008 and 2010.

Table 5.4: Construction and demolition waste managed within the GCVWSA

	Regulated activities (tonnes)	Exempt activities (tonnes)	Total (tonnes)
2004	2,375,111	408,666	2,783,777
2005	3,025,579	1,336,823	4,362,402
2006	2,486,573	2,890,767	5,377,340
2007	3,105,700	2,223,998	5,329,698
2008	2,624,507	1,289,556	3,914,064
2009	1,348,398	2,575,573	3,923,971
2010	1,443,381	2,302,272	3,745,653

Source: SEPA

The methodology used has been called into question by Europe who requested a national review of how construction and demolition waste is collated and reported. It is hoped that new data will become available for the 2017 edition of the State of the Environment Report.

Special and hazardous waste

Special waste poses particular risks to human health and to the environment. Waste is classified as hazardous if it displays one or more hazardous characteristics or properties such as being explosive, highly flammable, toxic or carcinogenic. SEPA maintains a register of the movement and disposal of special waste. In 2010, **422,983** tonnes of special waste was consigned in Scotland. There is no data available specifically for South Lanarkshire.

5.2 Waste treatment

The Scottish Government published its Zero Waste Plan (ZWP) in June 2010. The Plan sets out the strategic direction for waste policy in Scotland until 2020 and contains a range of targets designed to assist the Scottish Government achieve its vision of a zero waste society.

The Zero Waste Plan vision 'describes a Scotland where resource use is minimised, valuable resources are not disposed of in landfills, and most waste is sorted into separate streams for reprocessing, leaving only limited amounts of waste to go to residual waste treatment, including energy from waste facilities'.

Scottish Government Zero Waste Plan (page 3)

Some of the ZWP's targets reflect the EU legislation whilst others exceed the requirements of the Directives they originate from. The targets within the ZWP are summarised in **Table 5.5**.

Table 5.5: Zero Waste Plan targets

Target/cap	Year	Derivation
50% recycling/composting and preparing for reuse from households	2013	Scottish Government target
60% recycling/composting and preparing for reuse of waste from households	2020	Scottish Government target
70% recycling and preparing for reuse of construction and demolition waste	2020	EU Waste Framework Directive
No more than 5% of all waste to go to landfill	2025	Scottish Government target
70% of recycling/composting and preparing for reuse of all waste	2025	Scottish Government target

Waste recycling

Kerbside recycling collection services were first introduced in South Lanarkshire in 2003 when, due to a successful bid to the Scottish Executive's Strategic Waste Fund, a number of initiatives were introduced to allow residents to easily recycle/compost a variety of materials (dry recyclate, glass and compostable garden waste). Kerbside recycling coverage rates have steadily improved with a significant number of multi-occupancy properties receiving a co-mingled dry recycling service for the first time in autumn 2014.

Improved kerbside collection recycling coverage, easy access to high performing Household Waste Recycling Centres (HWRC), an extensive network of 'Bring Sites' or recycling points, together with the award of a short term contract for the extraction of recyclable material from the residual stream, has led to significant improvement in the Council's household recycling rate for the 2014/2015 period (**Table 5.6**). These initiatives are successfully diverting waste away from landfill.

Table 5.6: Household recycling rates (financial years)

Year	Rate (%)
2011 - 2012	35.7
2012 - 2013	37.4
2013 - 2014	39.7
2014 - 2015	47.4

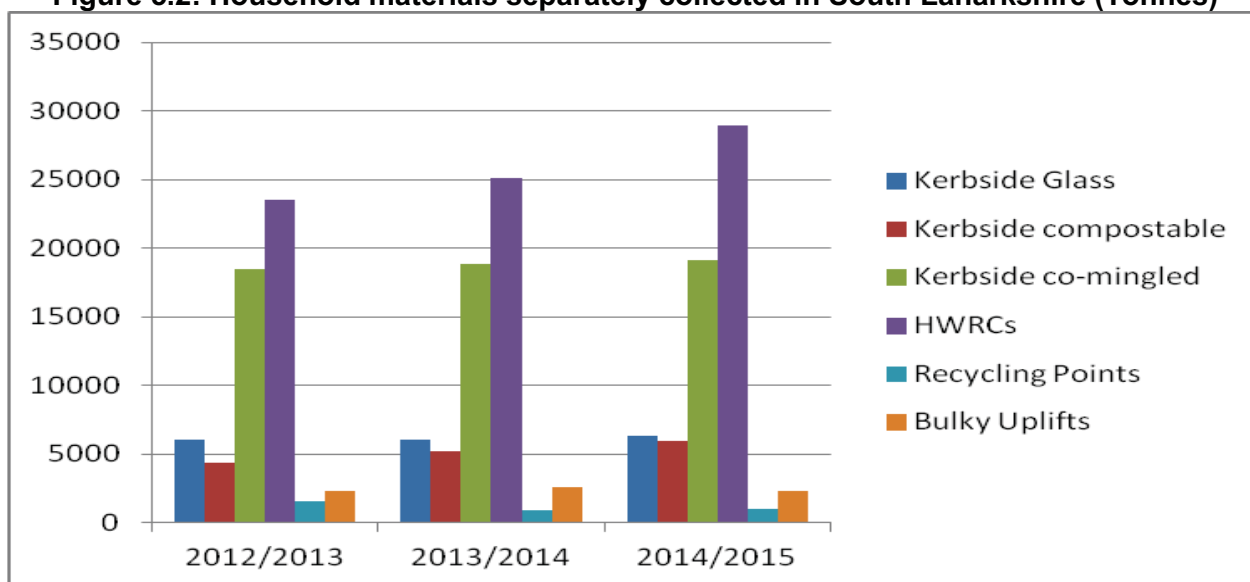
Source: South Lanarkshire Council

Table 5.7 and Figure 5.2 shows the breakdown of household materials separately collected in South Lanarkshire for recycling for the three years since 2012/2013. The majority of dry recyclable material ends up at a Materials Recovery Facility (MRF) where it is sorted and baled for onward transportation. A proportion of the recycling rate can be attributed to the composting of organic waste.

Table 5.7: Household materials separately collected in South Lanarkshire (Tonnes)

Material	2012/2013	2013/2014	2014/2015
Kerbside glass	6,023	6,058	6,330
Kerbside compostable	4,400	5,240	5,957
Kerbside co-mingled	18,475	18,822	19,176
HWRCs	23,480	25,149	28,984
Recycling points	1,540	944	983
Bulky uplifts	2,338	2,582	2,346
Total	56,256	58,795	63,776

Figure 5.2: Household materials separately collected in South Lanarkshire (Tonnes)



Source: South Lanarkshire Council and SEPA

Non kerbside facilities

There are six Household and Waste Recycling Centres located within South Lanarkshire (**Table 5.8**). Five of these are operated by a third party on behalf of the Council. The site at Castlehill Industrial Estate, Carluke remains under Council management. The sites collected **40,052** tonnes of waste in 2014/2015, of which **28,984** tonnes were recycled. This provides a recycling rate of **72.4%** for all sites.

Table 5.8: Household and Waste Recycling Centres in South Lanarkshire

Amenity/recycle site	Site description/waste accepted
East Kilbride Eastfield Hamilton Larkhall Strathaven	Operated by a third party on behalf of the Council. Skips for green waste, scrap metal, construction waste, cardboard and general waste. Facilities for recycling bottles and jars, food and drinks cans, paper, textiles, books, used motor oil and car batteries. The site accepts waste electrical and electronic equipment for recycling.
Castlehill Industrial Estate Carluke	Managed by South Lanarkshire Council. Skips for green waste, cardboard, scrap metal, construction waste and general waste. Recycling points for textiles, books, paper, bottles and jars as well as food and drinks cans. Car batteries and electronic equipment are also accepted at the site.

Source: South Lanarkshire Council

Bring sites

There are currently 61 recycling bring sites located throughout South Lanarkshire where the public can recycle a variety of wastes, including, cans, paper, glass, books and textiles. A report commissioned by Zero Waste Scotland in 2012, noted that **98.1%** of residents within South Lanarkshire live within a ten minute journey time of a recycling point. The Council is in the process of reviewing its bring sites provision as a consequence of its continued commitment to extend kerbside recycling to households throughout South Lanarkshire.

Composting

Composting organic material helps to reduce the amount of biodegradable waste the Council sends to landfill. The Council currently composts the green waste from services such as grounds maintenance, as well as the material from its domestic garden waste collection service. As of June 2015, the Council commenced the roll out of a new food and garden waste collection service. The food and garden waste collected will be sent to an In-Vessel Composting (IVC) facility where it will be turned into PAS100 compliant compost. The service is being introduced to comply with its statutory duty to provide a domestic food waste collection service as set out by the Waste (Scotland) Regulations 2012. It is anticipated that the new service will facilitate a significant increase in the amount of material being composted and a corresponding decrease in the amount of waste being sent to landfill. In 2014/2015, the Council composted **13,412 tonnes** of material, an increase of 2,251 tonnes from the previous year.

Energy recovery

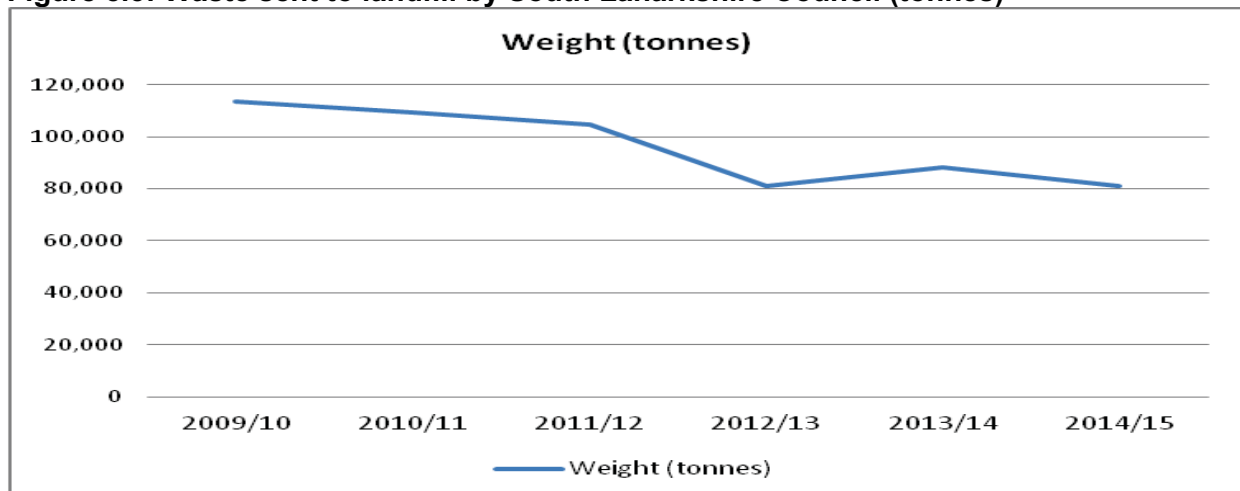
As a consequence of the stringent landfill diversion targets contained within the Zero Waste Plan and the forthcoming ban on the landfilling of biodegradable municipal waste, the Council is currently tendering for a long term solution for the treatment of its municipal residual waste. It is probable, given the objective of the contract is to divert 95% of residual waste from landfill that the solution will involve the waste being used as a fuel in an energy recovery facility. There are currently no operational energy recovery facilities within South Lanarkshire, however, planning consent was granted in 2011 for a facility near Stonehouse.

5.3 Waste disposal

Landfill

There are currently three landfill sites operating in South Lanarkshire. Rigmuir, near East Kilbride, operated by Viridor Waste management is the only one licensed to accept non-hazardous municipal waste. The other sites, Inland Engineering, near Quarter and Wm Hamilton and Sons, near Stonehouse, can accept inert waste materials. Operations at Cathkin landfill site were completed in 2014 and restoration is ongoing. The Council currently disposes of its residual waste at two sites, Rigmuir and the Levenseat landfill site near Forth. The amount of waste being landfilled by the Council during the last years is shown in **Figure 5.3**.

Figure 5.3: Waste sent to landfill by South Lanarkshire Council (tonnes)



Source: South Lanarkshire Council

5.4 Environmental waste

Street litter

The quality of local surroundings is fundamental to a good quality of life. Individual perspectives on the state of their local environment can differ but, in general, people view street cleanliness as a major factor. Street cleanliness includes the level of litter, detritus, graffiti and fly posting. These factors are collectively known as ‘Environmental Incivilities’. A number of Scottish Government sponsored studies have identified that such incivilities are aspects which local residents feel have negative impacts on their local environment and sense of wellbeing. In general terms, those who believe the environment in their neighbourhood is poor are more likely to report anxiety, depression and a general poor state of health.

The Council does not collect tonnage data for street litter. The success of the Council’s street cleaning was previously assessed using a national performance indicator for cleanliness, Local Environmental Audit and Management System (LEAMS), developed by Audit Scotland. In 2013/2014, the Improvement Service undertook a significant review of the Local Government Benchmarking Framework and the Statutory Performance Indicators. Following consultation, the Statutory Performance Indicator for street cleansing changed from the Cleanliness Index calculated from LEAMS to the following three indicators:

- Street Cleanliness Score (% streets at an acceptable A, B+ or B grade standard from LEAMS assessments).
- Net cost of street cleaning per 1,000 population (£).
- Percentage of adults satisfied with waste collection and street cleaning.

The Street Cleanliness Score is a significant shift from the Cleanliness Index used in previous years. The percentage of streets assessed as acceptable (A or B COPLAR standard) moves away from attaining completely litter free sites, (considered impractical in areas of high footfall) to reducing the impact from more widespread litter problems within the street scene.

The new methodology was used in the financial year, 2014/2015 when it was assessed that 98.3% of South Lanarkshire’s streets were deemed to be ‘acceptable’. This put South Lanarkshire third in the ranking tables. A recent re-evaluation of previous LEAMS scores was undertaken by Keep Scotland Beautiful during 2015, the results of which are shown in **Table 5.9**.

Table 5.9: Street cleanliness scores for South Lanarkshire

Financial year	Score
2011/2012	97.8
2012/2013	97.1
2013/2014	98.9
2014/2015	98.3

Source: Keep Scotland Beautiful; The Improvement Service; South Lanarkshire Council

Illegal dumping – flytipping

Fly-tipping is the illegal dumping on land not licensed to receive it. This blights the landscape and can pose a serious threat to the environment. Most fly-tipping originates from households and consists of black bags, white goods, other electrical items and garden waste. The cost of clean-up and investigation for these incidents is difficult to quantify but are significant. These costs are expected to rise as landfill tax for commercial and industrial premises and other costs increase.

During 2014/2015, South Lanarkshire Council’s Environmental Crime Team received **1,893** enquiries relating to waste and flytipping. The team issued **53** fixed penalty notices and reported **15** alleged offenders to the Procurator Fiscal.

Abandoned vehicles

Since 2002 more than 36,000 vehicles have been uplifted from the streets and land throughout Scotland. This has potentially cost Scottish council-tax payers in excess of £5m to deal with abandoned and nuisance vehicles. Such vehicles are a danger to the environment, through leaking fluids or potential fire risks and are a health hazard, particularly to younger children. Since 2007, the number of abandoned vehicles reported to South Lanarkshire Council has fallen by **75%**, with **124** reported in 2012/2013. However, the number of reported incidents increased in the following two years. The value of scrap for old cars has increased over recent years and it is likely this has been a contributory factor in the overall reduction in abandoned vehicles across Scotland. This is evident with only **6** vehicles being uplifted in South Lanarkshire during 2014/2015, compared to 99 vehicles uplifted in 2007/2008 (**Table 5.10**).

Table 5.10: Abandoned cars reported in South Lanarkshire

	Reported incidences	Further investigation	Uplifted
2007/2008	503	160	99
2008/2009	283	91	59
2009/2010	260	73	25
2010/2011	216	50	9
2011/2012	201	58	8
2012/2013	124	34	3
2013/2014	191	185	7
2014/2015	220	202	6
Total to date			216

Source: South Lanarkshire Council, Environmental Services

6 Soils

SEA objectives that relate to soils

- To conserve and improve soil form and function.
- To reduce soil contamination and the number of contaminated sites.

Soil is a complex, variable and living medium. It has a role in providing a habitat and gene pool, is important for human activities, landscape and heritage and acts as a provider of raw materials.

The **European Union** has defined soil as ‘...the top layer of the Earth’s crust and is formed by mineral particles, organic matter, water, air and living organisms’.

Soil performs many vital functions: as a growing medium for food, forestry and other biomass production, storage, filtration of water, carbon, and nitrogen. Soil in its many forms is considered as an important carbon store. Scottish soils are estimated to contain approximately 3,200 million tonnes (Mt) of carbon, which is more than half the UK’s soil carbon and 60 times as much as all the vegetation in Scotland. In particular, peat soils hold over 70% of Scotland’s carbon but only accounts for around 11% of its land area.

Scotland’s soils are generally in good health but there is a lack of national trend data from which evidence of change or damage to soils might be determined. There is some evidence that levels of organic matter in Scottish soils may be declining and this may result in a significant reduction in the UK stock of terrestrial carbon. The key cause of this decline is intensive agricultural practices which disturbs the soil and leads to changes in soil carbon levels. The rate of organic matter loss from soils is far quicker than the rate of organic matter gain meaning that once the organic matter is lost it is impossible to replenish.

The 2005 Scottish Greenhouse Gas Inventory estimated that soil carbon stock changes in land converted to cropland emitted 6.5 Mt carbon dioxide (15% of Scotland’s net carbon dioxide emissions). In comparison, soil carbon stock changes in land converted from arable to grassland gave a sink of 2.8 Mt carbon dioxide even though the area was larger (1200 kha compared to 1000 kha for land converted to cropland). Many of these emissions/removals are due to historical land use change (pre-1990).

In 2006, a Soil Framework Directive was proposed to protect soils across the EU. The main issues identified included erosion, loss of organic matter and contamination. Soil damage and degradation can potentially have negative effects on human health, natural ecosystems and climate change and our ability to grow crops and other food sources for humans and animals.

There is a wide range of soil types in South Lanarkshire, some characterised by historical contamination from industrial activities, agricultural land, woodlands and peatlands. In 2006, it was estimated that approximately 361 kilo tonnes of carbon dioxide was removed from the atmosphere in South Lanarkshire through existing carbon sinks, including trees and other plants.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

G Good	F Fair	↑ Improving
P Poor	□ Limited data	↔ No change
		↓ Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Soil quality	G	↔	Current data indicates good soil quality in a Scottish or regional context. At present there is limited data on soil quality specifically within South Lanarkshire.
Soil capacity	G	↔	There has not been a significant level of development within the green belt. As a result, there is no evidence to suggest that the soil capacity has been affected. Further consideration about refining information from the Scottish Agricultural Census to provide more area specific soil capacity data should be explored.
Land use	F	↔	The available data on soil use is limited and outdated. Work is ongoing nationally to address this data gap.
Contaminated land	F	↑	Since 2005, 27% of identified contaminated sites have been investigated and remediated under the planning system. 88% of all potentially contaminated sites have undergone preliminary investigation.

Baseline situation

Soil quality in South Lanarkshire is considered to be generally good although baseline data is difficult to gather and is rarely updated. Human activity, land use and intensity and global climatic effects can be detrimental to soils, reducing their distribution, function and sustainability. Healthy and diverse soils are important for crop growth, carbon storage and sustaining biodiversity across a range of habitat types.

6.1 Soil quality

Geology and hydrology

South Lanarkshire’s diverse range of landscapes indicates the presence of an equally diverse geology. In terms of solid geology the area can be divided into five broad regions. The very south of the area around the Lowther Hills is indicated to be underlain by sandstone and shales with intrusions of mudstones. Further north into the lower central region the underlying geology is also sandstone and shales with volcanic intrusions.

The central region of South Lanarkshire is indicated to be predominantly underlain with sandstone, conglomerates and lavas. The western portion of the central region is shown to be underlain with coal measures and partly by millstone grit. The route of the River Clyde and its tributaries is defined by deposits of sands and gravels.

The north eastern region of South Lanarkshire is principally underlain by sandstone while further west there are more coal measures. The coal seams in the Hamilton area have been extensively worked by both open cast and deep mining methods in the past. In common with the majority of Scotland the drift geology comprises till, sand and gravel from the last and earlier ice sheets. Additional deposits from rivers include substantial areas of peat.

In terms of hydrogeology coal measures are categorised as locally important aquifers where flow is dominantly in fissures and other discontinuities. Mine workings have been heavily pumped in the past, however, yields are typically low and water quality is poor. Sandstone provides locally important aquifers however borehole yields can vary significantly within the region.

Soil data

Soil quality can be considered as ‘fit for purpose’ for the range of functions we expect soils to perform. Based on existing information, Scottish soils are generally of good quality. Outwith the urban areas there is no indication that South Lanarkshire’s soils are radically different. Only a few soils located in the Cambuslang and Rutherglen area have high concentrations of contaminants due to industrial land uses with concentrations in the remainder being generally low. The area surrounding Leadhills has high concentrations of lead and other heavy metals naturally occurring in the soils as a consequence of the solid geology and historic metaliferous mining in the area. There is little evidence to suggest that South Lanarkshire suffers from serious soil erosion, compaction or other problems related to land management.

At present there is no valid data available to enable a robust assessment of the soil quality. The British Geological Society is ‘...developing data of direct relevance to improving our understanding of soils within the context of a diverse array of functions’. These datasets are not yet available but are developed for specific assessments.

6.2 Soil capacity

Soil capacity includes the ability to grow a range of crops, to catch and retain flood waters, carbon storage and to enhance biodiversity. Although available datasets detail soil capacity they are rarely updated making trend analysis impossible.

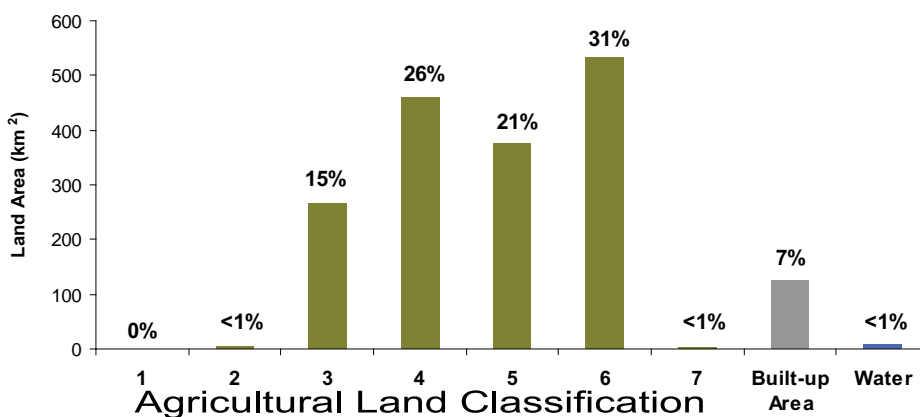
The Scottish Government has collected agricultural census statistics on a national and regional basis since 1982. There are no South Lanarkshire area specific figures and efforts should be made to close this identified data gap. These statistics will indicate whether soil capacity is changing (the amount of land being used for different types of crops) and the total area under cultivation. Topsoil carbon mapping is another area of research which potentially could be beneficial in terms of quantifying soil health.

Land use

The MacAulay Land Use Research Institute has developed maps and datasets related to land use and agricultural capabilities. However, the available data is 20-30 years old and is being updated. The Council’s Local Development Plan is an important source of information as it records current land use (at a certain point in time) and plots out the areas where development will take place over the life of the plan. Departures from the Local Development Plan can be used as indicators for both soil protection and capacity.

Agriculture is the single largest use of land across South Lanarkshire. However, there are limited areas that have high yield growing capacities within classifications 1 and 2. The majority of agricultural areas in South Lanarkshire are considered suitable for grazing (**Figure 6.1**).

Figure 6.1: Land classification across South Lanarkshire



Source: The Scottish Government

6.3 Contaminated land

The contaminated land regime set out in Part IIA of the Environmental Protection Act 1990 as inserted by section 57 of the Environment Act 1995, came into force in Scotland in July 2000.

Statutory guidance defines ‘contaminated land’ as:

‘...any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) significant pollution of the water environment is being caused or there is a significant possibility of such pollution being caused’

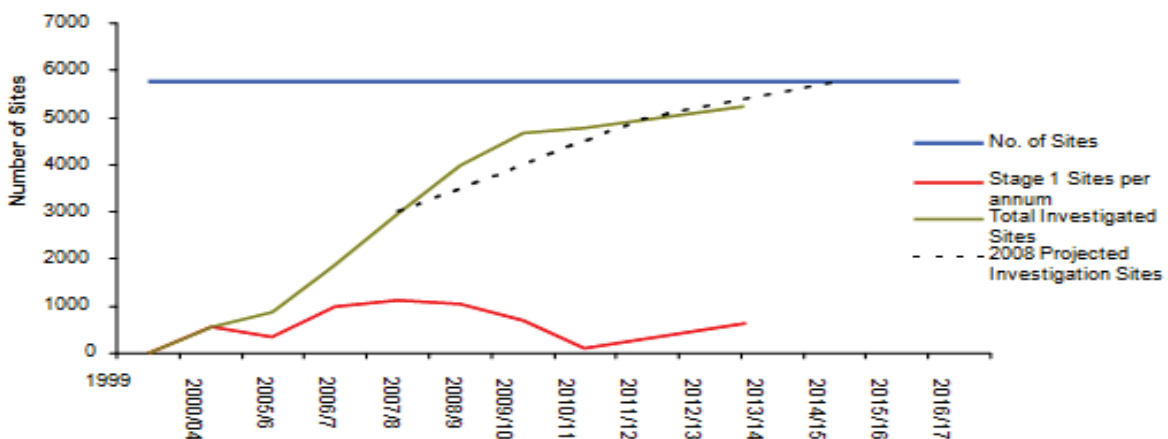
The Council has a statutory duty to investigate its land area specifically to find and resolve contaminated land issues which relate to harm to people, pollution to the water environment or damage to property. Soil quality is improved through the remediation of sites by reducing its ability to cause harm or pollution and soil capacity may also be improved. Some remediation techniques are highly destructive with regard to soil structure, flora and fauna, and organic content. Although improvements to soil capacity and quality are not contaminated land regime aims the processes involved frequently favour them. The regime’s stated intent is to ensure land is suitable for its intended use. This is achieved through an iterative process of creating a list of potential sites and investigating them in a methodical manner. A proportion of sites are remediated through the planning process using the same philosophy.

A list of potentially contaminated sites is compiled by the Council and prioritised for inspection. This list has about **5,800** entries and to date some **5,100** sites have been initially investigated by way of a site walkover with some **43** sites progressing to further investigation (**Figure 6.2**). The areas of potential contamination are mainly centred on the urban areas with the majority of the industrial land uses based on mining, manufacturing and chemical works.

Progress of the contaminated land regime

The Council through its Environmental and Strategic Services and Planning has been investigating these sites since 2000. Progress has been good with approximately **80%** of the total number of sites investigated and remediated through the Part IIA regime (**Figure 6.2**). From 2005 – 2014, some **1,590** sites (**27%** of the total) have been, in whole or part, investigated and remediated under the planning system. Initial investigation is expected to continue until 2016/2017 with the numbers of sites being investigated per annum falling from a high in 2007/2008 as sites become more difficult to access due to topography and remote location.

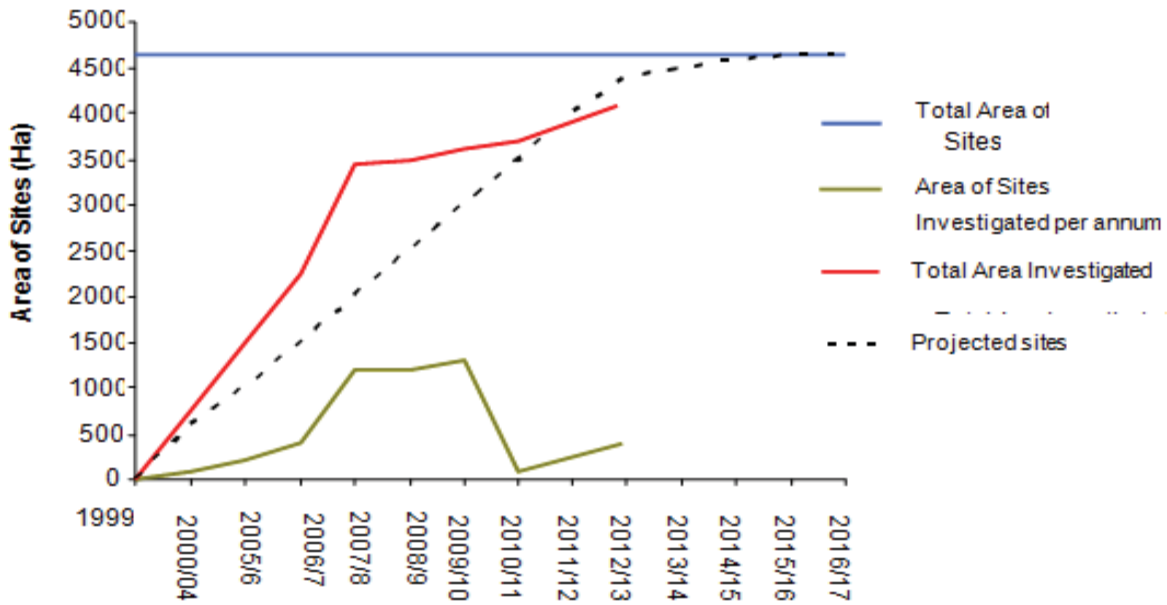
Figure 6.2: Progress on Environmental Protection Act 1990 (Part IIA) site investigations



Source: South Lanarkshire Council

Similarly, the physical area investigated will decline each year as the larger sites are investigated leaving the smaller sites (sub 100m²) for later years. This is demonstrated in **Figure 6.3**.

Figure 6.3: Progress of Part IIA area investigations



Source: South Lanarkshire Council

In 2011, implementation of the contaminated land regime resulted in one area of land being identified as statutorily contaminated. This area was subsequently designated as contaminated land and a 'Special Site'. This type of site is regulated by SEPA and consultation with them has resulted in the area being sub-divided into seven contaminated land sites which are also special sites. The location of these sites can be found on the Council's Contaminated Land Public Register.

7 Air, noise and light

SEA objectives that relate to air, noise and light

- To improve air quality, reduce the level of pollutants and the impacts on receptors.
- To reduce the level of nuisance and the impact of noise on sensitive receptors.
- Minimise the level of light pollution.

Today, Scotland's air is cleaner than at any time since before the Industrial Revolution, achieved mainly through tighter controls on pollutant emissions from industry, transport and domestic sources. Good air quality is an essential component to improving human health and the status of the environment. The quality of the air around us is dependent on what pollutants we release into the atmosphere through our transportation, energy generation, domestic heating and industrial activities and through the dispersal and deposition mechanisms associated with these pollutants. The release of pollutants such as nitrogen oxides (NO_x), sulphur dioxide (SO₂), volatile organic carbons (VOCs) and particulates (including PM₁₀ and PM_{2.5}) and the subsequent secondary pollutant generated, such as ozone (O₃) can have a detrimental effect on:

- **Human health:** triggering respiratory problems such as asthma and bronchitis, reducing the quality of life and life expectancy.
- **Habitats:** changing the ecosystem through nutrient enrichment or acidification or through the direct effects of pollutants such as ozone on plant growth and development.
- **Building material:** oxidation of material by ozone or erosion through acidification, thus reducing the life expectancy or quality of the material.
- **Climate change:** release of greenhouse gases such as carbon dioxide, methane and nitrous oxide can result in global shifts in climate.
- **Nuisance:** including reduced visibility through haze and smoke and odour, reducing the overall amenity value of the area.

Within the urban environment the pollutants that cause the main concern are those found close to source, primarily emitted from transport, domestic and commercial heating and small-scale industrial activities, with NO_x and Particulates of primary concern in South Lanarkshire. The main issue associated with such pollutants are the impacts they have on human health, particularly on 'sensitive individuals' such as the elderly, young and those suffering from respiratory conditions, with elevated levels along transport routes within urban areas of South Lanarkshire.

Pollutants emitted from large-scale industrial activities, energy generation and to a lesser extent transport and agriculture can potentially travel in the atmosphere over long distances. These pollutants are considered as long-range pollutants and in many cases can result in the formation of secondary pollutants, such as ozone or the formation of acid rain, causing potential damage to sensitive vegetation and habitats.

Noise and light pollution can have detrimental effects on the environment, people and communities particularly in the more densely populated urban areas of South Lanarkshire.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

The Current status is shown by the following colours:

G Good **F** Fair

P Poor Limited data

The trend direction is shown with the following arrows:

↑ Improving
 ↔ No change
 ↓ Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Local air quality	F	↓	Air quality across South Lanarkshire is generally good but there are a few areas in excess of national limits set to protect human health. The Council continues to improve its data collection in this respect.
Point source emissions	F	↔	There has been a significant reduction in the number of permits issued for smaller scale industrial activities due to criteria changes to SEPA's permits.
Long-range pollutants	P	↑	There are no identified long range pollutant emitters in South Lanarkshire. Long-range pollutants remain a concern with most designated sites currently exceeding the critical loads for acid deposition and nitrogen enrichment. However, levels of exceedance for 2020 are predicted to improve slightly.
Airborne nuisance	G	↔	Although airborne nuisance complaints have increased slightly in recent years they remain relatively low. Odour is still the main nuisance reported to the Council.
Noise	F	↔	The number of noise complaints remains fairly consistent. The majority of complaints relate to domestic noise. Two areas in South Lanarkshire achieved 'Quiet Area' status in 2013.
Light			There is little data on light pollution across South Lanarkshire. This is currently measured based on the number of complaints received by Environmental Services.

Baseline situation

Air quality across South Lanarkshire is generally below national air quality objectives, with 'hotspot' areas identified within the urban environment. Transport is one of the main sources for urban pollution, with elevated levels associated with the main transport corridors and busy road junctions. Within the rural environment, acidification and nutrient enrichment are the main concerns, particularly across elevated ground. Long-range pollutants, emitted outwith South Lanarkshire are mainly associated with these effects and therefore controlling such pollutants is more challenging.

Excessive noise is associated with a variety of adverse impacts including, hearing impairment, sleep disturbance, hypertension and stress. The Antisocial Behaviour etc., (Scotland) Act 2004 introduced new powers to expedite the existing statutory nuisance provisions traditionally used by local authorities to deal with noise complaints. To capitalise on these new provisions the Council's Environmental Services introduced an out-of-hours service to investigate and remedy complaints of noise from domestic, commercial and industrial premises.

The Environmental Noise Directive was transposed into Scots law in 2006 and placed a duty on Scottish Ministers to produce noise maps to assist with the management of environmental noise at a strategic level. As a result of the mapping exercise, the Scottish Ministers approved the establishment of two Quiet Areas in South Lanarkshire with five candidate Noise Management Areas being progressed.

7.1 Local air quality

Good air quality is essential for our health and the environment. The Environment Act 1995 introduced the Local Air Quality Management (LAQM) system, which requires local authorities to

undertake regular review and assessment of air quality. These reviews are carried out under the framework of local air quality management and are intended to compare current and future concentrations of air pollutants with the standards and objectives outlined in the National Air Quality Strategy (**Table 7.1**) and Air Quality (Scotland) Regulations 2010.

Table 7.1: Air quality objectives as set out within the national Air Quality Strategy

Pollutant	Air quality objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g m}^{-3}$	Running annual mean	31 December 2003
Scotland and N. Ireland	3.25 $\mu\text{g m}^{-3}$	Running annual mean	31 December 2010
1,3-Butadiene	2.25 $\mu\text{g m}^{-3}$	Running annual mean	31 December 2003
Carbon monoxide	10.0 mg m^{-3}	Running 8-hour mean	31 December 2003
Lead	0.5 $\mu\text{g m}^{-3}$	Annual mean	31 December 2004
	0.25 $\mu\text{g m}^{-3}$	Annual mean	31 December 2008
Nitrogen dioxide	200 $\mu\text{g m}^{-3}$ not to be exceeded more than 18 times a year	1-hour mean	31 December 2005
	40 $\mu\text{g m}^{-3}$	Annual mean	31 December 2005
Particles (PM₁₀)	50 $\mu\text{g m}^{-3}$, not to be exceeded more than 35 times a year	Daily mean	31 December 2004
	50 $\mu\text{g m}^{-3}$, not to be exceeded more than 7 times a year	Daily mean	31 December 2010
Scotland	18 $\mu\text{g m}^{-3}$	Annual mean	31 December 2010
Particles (PM_{2.5})*	25 $\mu\text{g m}^{-3}$ (target)	Annual mean	2020
	20% cut in urban background exposure	Annual mean	2010 – 2020
Scotland	12 $\mu\text{g m}^{-3}$ (limit)	Annual mean	2010
Sulphur dioxide	350 $\mu\text{g m}^{-3}$, not to be exceeded more than 24 times a year	1-hour mean	31 December 2004
	125 $\mu\text{g m}^{-3}$, not to be exceeded more than 3 times a year	24-hour mean	31 December 2004
	266 $\mu\text{g m}^{-3}$, not to be exceeded more than 35 times a year	15-minute mean	31 December 2005

* Not included in the regulations at present

Under the LAQM regime, local authorities have a legal duty to review and assess air quality within their areas against a set of health based objectives, and where required, take measures to work towards improving air quality.

Air quality objectives - Air pollution concentrations should be at a level considered to be acceptable in the light of what is known about the effects of each pollutant on health and on the environment.

The Scottish Government recommends that local authorities consider preparing a local air quality strategy which outlines their commitment to air quality management and improvement. South Lanarkshire Council's first Local Air Quality Strategy is at final draft stage and will be implemented from late 2015. This high level strategy will help inform and support other policies across the wide range of services provided by the Council. The strategy is aimed at Council staff, partners, local businesses, organisations and the general public, all of whom have a role in being aware of and contributing to air quality within South Lanarkshire.

Local air pollutants

The reduction of local air quality within an urban environment is generally associated with primary pollutants emitted directly into the atmosphere from localised sources. The pollutants of main concern within South Lanarkshire include:

Nitrogen oxides: Nitric oxide (NO) is mainly derived from combustion processes including road transport and electricity generation. Once released to the atmosphere, NO is usually very rapidly oxidised to nitrogen dioxide (NO₂). Although NO is not considered to be harmful to health, NO₂ can induce respiratory problems. Both NO₂ and NO are oxides of nitrogen and together are referred to as nitrogen oxides (NO_x).

Particulates: Fine particles compose a wide range of materials arising from a variety of sources including:

- combustion sources (mainly road traffic),
- secondary particles, mainly sulphate and nitrate formed by chemical reactions in the atmosphere,
- coarse particles, suspended soils and dusts, sea salt, biological particles and particles from construction work.

Particles are measured in a number of different size fractions with most monitoring currently focussed on PM₁₀, with the finer fractions such as PM_{2.5} and PM₁ increasing in interest in terms of health effects.

Local air quality management

The primary cause of poor air quality at the 'hotspot' areas is from road traffic emissions, particularly at busy junctions. There are no significant industrial sources of air pollution in South Lanarkshire.

Although air quality within South Lanarkshire generally meets the National Air Quality Objectives and European Limit Values, there are some 'hotspot' areas where levels of pollution exceed the more stringent Scottish objectives, particularly for PM₁₀, where the objective is 18 µg m⁻³ in Scotland, compared with 40 µg m⁻³ for the rest of the UK.

To date one Air Quality Management Area (AQMA) has been declared at Whirlies Roundabout, East Kilbride on the basis of exceedances of the Scottish PM₁₀ objective concentration. The Council is in the process of declaring AQMAs for Rutherglen and Lanark for PM₁₀ and NO₂, respectively.

Concentrations of air pollution are measured on a regular basis using a variety of monitoring equipment and this data is used to determine whether the National Objectives are being achieved. The number of monitoring sites within South Lanarkshire has increased. PM₁₀ and/or NO₂ are continuously monitored at 7 sites using automatic monitoring units. In addition to these diffusion tubes are also used to monitor NO₂ at 37 locations throughout South Lanarkshire, covering a mix of roadside and background locations. A black carbon monitor has also been installed at one of the Council's continuous monitoring sites and two portable, battery operated NO₂ monitors have been deployed. The NO₂ monitoring network has expanded considerably from the 25 locations in 2011 reflecting the priority afforded to air quality monitoring within the Council. This network is due to increase to 40 during 2015.

Particulates

Particulates (PM₁₀) are periodically monitored at various locations within South Lanarkshire. Automatic monitoring for PM₁₀ is ongoing at all seven sites with the Lanark and Uddingston sites having recently been upgraded to monitor the smaller fraction of particulate matter (PM_{2.5}). **Table 7.2** shows the results from the automatic monitoring sites against the 18 µg m⁻³ objective. The Whirlies Roundabout and Rutherglen Main Street are major transport corridors. The data illustrates an elevated level of PM₁₀ attributed to vehicle emissions. Rutherglen Main Street is a busy through-way dominated by heavy traffic and lined with high buildings creating a canyon effect

resulting in elevated levels of PM₁₀. The Glespin site has been taken out of commission and the monitoring kit has been transferred to Main Street, Cambuslang.

Table 7.2: PM₁₀ concentrations across automatic monitoring sites, 2012 – 2014

Location	AQMA	Annual mean concentrations (µg m ⁻³)			No. of exceedances for daily mean objective (50µg m ⁻³)		
		2012	2013	2014	2012	2013	2014
Hamilton	No	-	-	16*	-	0	0
Main Street, Rutherglen	Being declared	18	19	n/a**	5	9	1
East Kilbride, Whirlies***	Yes	13	14	18	4	0	2
Raith Interchange***	No	26	21	-****	16	3	-****

*PM monitoring did not commence until 2014 for the Hamilton site.
 **Data capture issue.
 ***This monitor's location is not considered representative of relevant human exposure and is used to monitor the impact in changes to road infrastructure.
 ****Monitor removed to facilitate junction upgrade

Source: Environmental Services, South Lanarkshire Council

There are variations in the level of PM₁₀ recorded across the automatic monitoring sites within South Lanarkshire. The annual mean in the AQMA at the Whirlies Roundabout breached the 2010 air quality objective in 2014 (**18 µg m⁻³ PM₁₀**). The annual mean PM₁₀ for Rutherglen Main Street remained above the air quality objective with **18** and **19 µg m⁻³ PM₁₀** recorded for 2012 and 2013, respectively. PM monitoring has commenced at Lanark, Uddingston and Cambuslang sites during 2015.

Nitrogen dioxide

With the exception of the Cambuslang site, all monitoring locations also monitor NO₂. The Cambuslang site is due to be upgraded during 2015 to incorporate an NO₂ monitor. The monitoring sites were selected to represent background urban levels against busy roadside levels. The overall data has been reviewed within the South Lanarkshire Council's Progress Report, 2014. This report reviews all the air quality data collected by the Council and assesses trends in the areas monitored.

East Kilbride

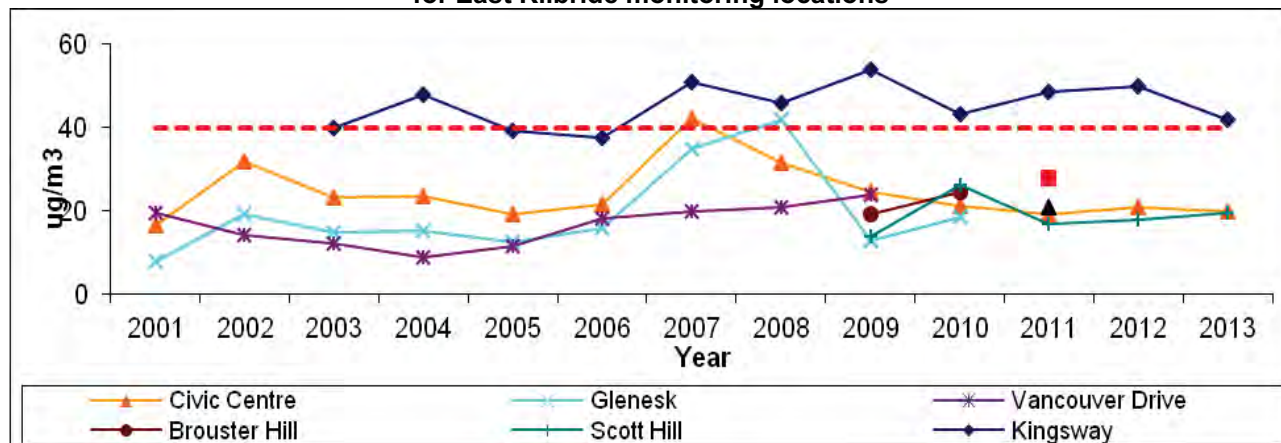
NO₂ concentrations across East Kilbride sites have fluctuated since 2002. More recent data reflects that continuing fluctuation (**Table 7.3, Figure 7.1**). The roadside location on the Kingsway has exceeded the 40 µg m⁻³ NO₂ objective, however, distance correction calculations have been conducted to predict the annual mean concentration at the nearest location of relevant exposure. These calculations predict that the objective is not exceeded at the receptor location. The continuous monitor at the Whirlies roundabout shows exceedance levels and the AQMA action plan measures for the roundabout are anticipated to have a positive effect on air quality.

Table 7.3: NO₂ measured annual mean concentrations (µg m⁻³) across East Kilbride sites

Site	2009	2010	2011	2012	2013
Kingsway	53.9	43.1	48.6	50 (37.6)*	41.9 (24.9)*
Civic Centre	24.7	21.3	19.2	21	19.8
Scott Hill	13.9	21.1	17.3	18	19.4
Continuous monitor (Whirlies)	37	49	41	n/a**	n/a**

* Distance correction calculation conducted for the nearest relevant exposure
 ** Data capture issues

Figure 7.1: Annual mean NO₂ concentrations (µg m⁻³) using diffusion tubes and continuous monitor for East Kilbride monitoring locations



Source: South Lanarkshire Council

Hamilton

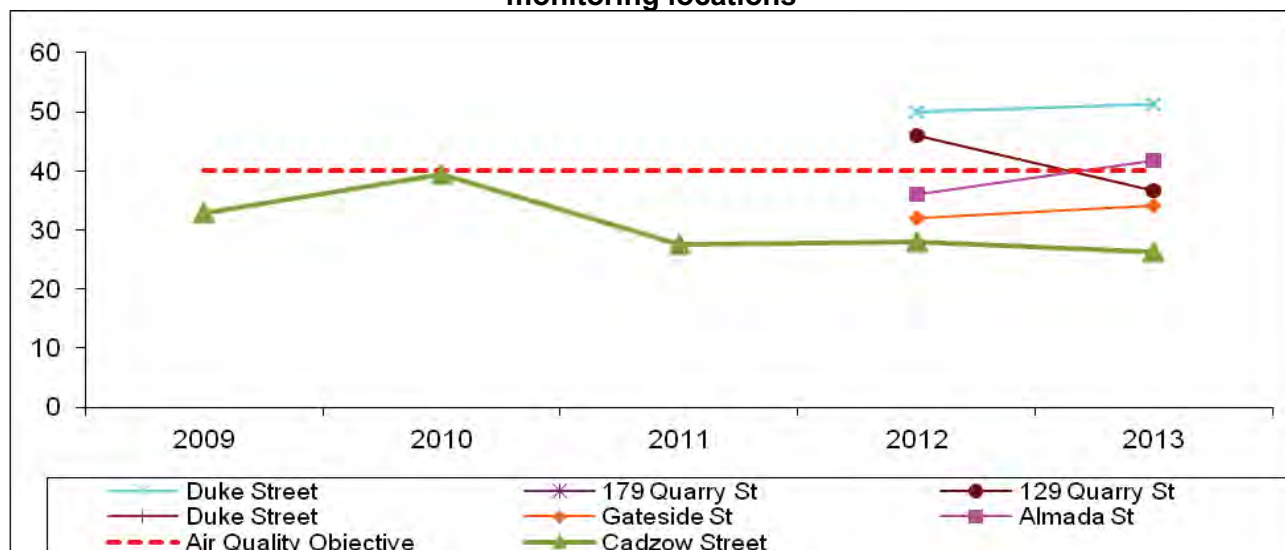
The Hamilton data in **Table 7.4** and **Figure 7.2** show fluctuating air quality measurements for annual mean. Site locations were reviewed with new sites added in 2011. A detailed assessment of air quality has been undertaken in Hamilton Town Centre. This has indicated that there are no exceedances of NO₂ and PM₁₀ annual mean objective occurring at locations with relevant exposure. The most recent Progress Report has, however, indicated that a detailed assessment should be undertaken at Almada Street and surrounding area. Additional monitoring points are to be deployed to inform the detailed assessment.

Table 7.4: Annual mean NO₂ concentrations (µg m⁻³) using diffusion tubes and continuous monitor for Hamilton monitoring locations

Site	2009	2010	2011	2012	2013
179 Quarry Street	-	-	-	31	25.5
129 Quarry Street	-	-	-	46 (45)*	36.6
Cadzow Street	32.9	39.4	27.5	28	26.3
Duke Street	-	-	-	50 (47.1)*	51.3 (48)*
Gateside Street	-	-	-	32	34.1
Almada Street	-	-	-	36	41.7
Bothwell Road	-	-	-	23	25.5
Low Quarry Gardens	-	-	-	13	12.2
Continuous monitor	-	-	-	-	35

* At relevant receptor

Figure 7.2: Annual mean NO₂ concentrations (µg m⁻³) using diffusion tubes for Hamilton monitoring locations



Source: South Lanarkshire Council

Lanark

Levels of NO₂ fluctuated between 2007 and 2013 (**Figure 7.3**). Elevated levels have been found at a roadside site located at Bannatyne Street (in a street canyon) since 2007. This site exceeded the 40 µg m⁻³ Air Quality Objective threshold in 2007, 2009, 2010, 2012 and 2013 (**Table 7.5**). As a direct result of breaching the 2010 objective levels, the Council installed a continuous monitor in 2010 to gather a more detailed profile for NO₂. Additional diffusion tubes were introduced in 2012. Data from the continuous monitor and extended diffusion tube network have informed the detailed assessment which has concluded that there are exceedances of the NO₂ annual mean objective at locations with relevant exposure. In light of this, the Council is in the process of declaring an AQMA for the Lanark area.

Table 7.5: Annual mean NO₂ concentrations (µg m⁻³) using diffusion tubes and continuous monitor for Lanark monitoring locations

Site	2009	2010	2011	2012	2013
Hospitland Drive	19.4	18.2	16.3	15	9.2
Bannatyne Street	47.2	40	38.7	42 (42)*	41
Wellgate	-	-	19.8	21	21.1
4 High Street/ Bloomgate	-	-	-	34	40.3 (38.0)*
51 High Street	-	-	-	22	27.6
Continuous monitor	-	-	-	29	25

* At relevant receptor

Figure 7.3: Annual mean NO₂ concentrations (µg m⁻³) using diffusion tubes for Lanark monitoring locations



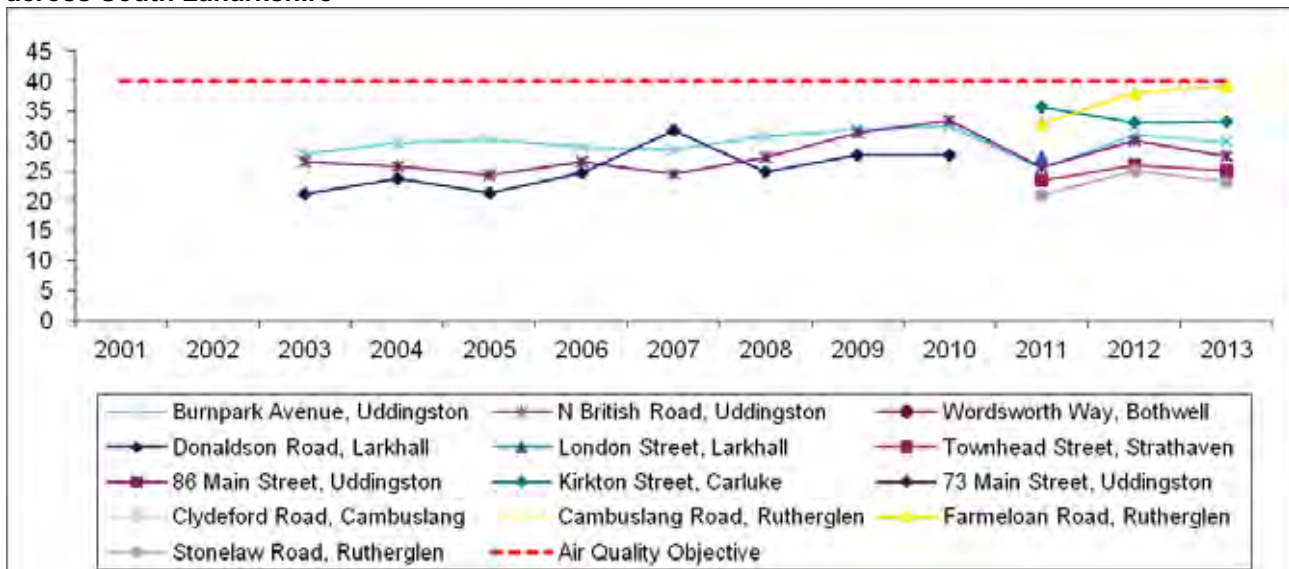
Source: South Lanarkshire Council

Other monitoring sites

Data collected across other monitoring sites in South Lanarkshire were all below the 40 µg m⁻³ NO₂ Air Quality Objective threshold (Figure 7.4).

Although the majority of these sites were roadside locations, the traffic on these roads is not as congested as those experiencing exceedances in East Kilbride (Kingsway) and Hamilton (Almada Street). This illustrates that traffic congestion is the major contributor to local air quality. Examination of the trend in annual means measured across the South Lanarkshire network indicated that NO₂ levels have increased and decreased almost equally across all the monitored locations.

Figure 7.4: Annual mean NO₂ concentrations (µg m⁻³) using diffusion tubes for monitoring locations across South Lanarkshire



Source: South Lanarkshire Council

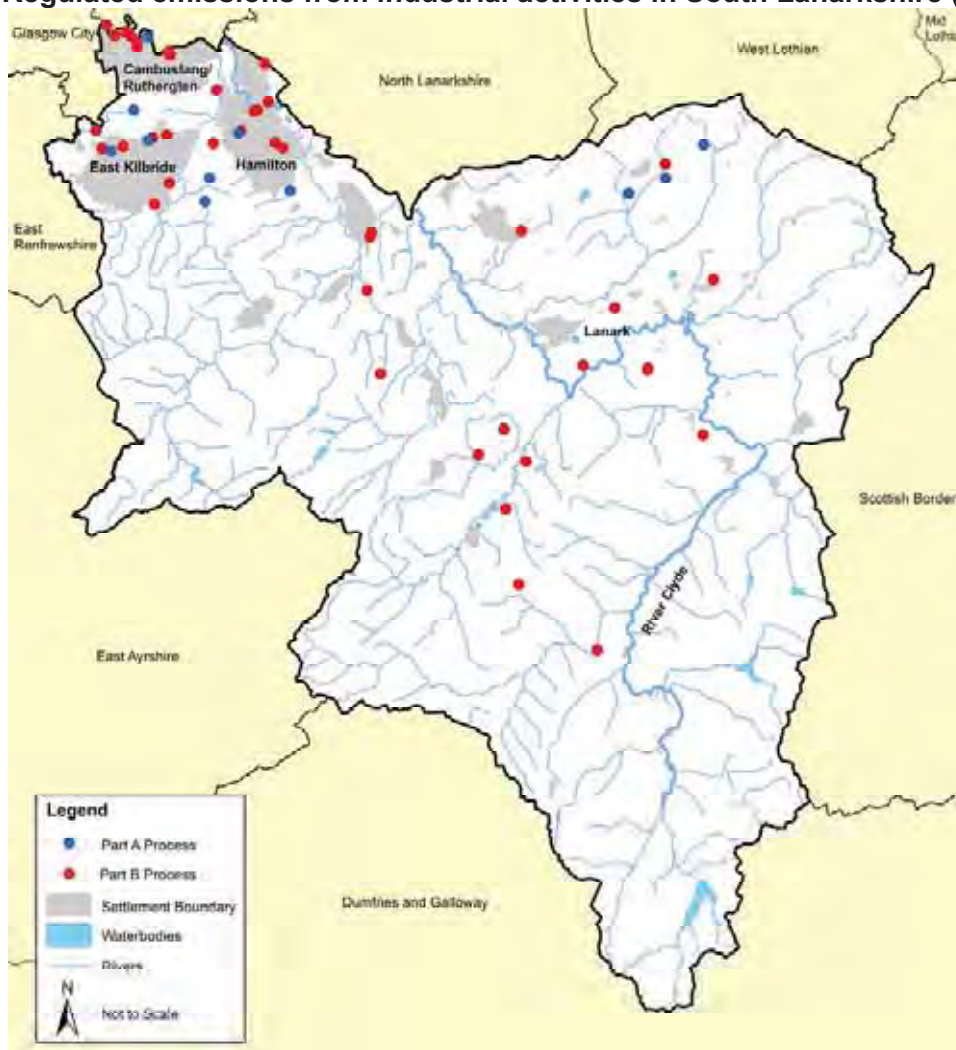
7.2 Point source emissions

Many industrial activities emit pollutants into the atmosphere, from large-scale industrial complexes to local school boilers. SEPA currently regulate the emissions from industrial activities through the Pollution Prevention and Control (Scotland) Regulations 2000, commonly referred to as the PPC Regulations. These place control measures on the release of pollutants from large-scale industrial

activities (regulated as Part A sites) and smaller scale activities such as garages and building and plant premises (regulated as Part B sites).

In South Lanarkshire there are currently **12** Part A sites and **48** Part B sites (**Figure 7.5**). Since the 2013 Report, SEPA changed their criteria for issuing Part B permits. All petrol vapour recovery installations (petrol stations) are now covered by Standard Rules rather than Part B permits. Standard Rules are also currently being introduced for dry cleaners, meaning that any new ones are not being issued with part B permits, although existing premises of this type are still currently covered by Part B permits. The number of Part A sites has slightly increased since the 2011 Report, although the number of Part B sites has fallen as a consequence of the changes introduced by SEPA.

Figure 7.5: Regulated emissions from industrial activities in South Lanarkshire (2015)



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 Contains SEPA industrial point source emissions data © Scottish Environment Protection Agency and database right 2015. All rights reserved

In addition to those regulated under the PPC Regulations, there is an increase of biomass boilers in the area. These are not currently regulated but can lead to a potential increase in particulate emissions which could be significant if there are a number of such boilers within a localised area or within the vicinity of a designated LAQM area.

Biomass combustion

A number of biomass installations have been identified for screening within South Lanarkshire. Details of the screening results are shown in **Table 7.5**. None of the biomass sources assessed are exceeding the threshold values presented in Technical Guidance 2009.

Table 7.5: Screening results for biomass sources

	Background concentration		Emission rate		Adjusted emission rate		Exceed critical value?
	NO ₂ ug.m ⁻³	PM ₁₀ ug.m ⁻³	NO ₂ g/s	PM ₁₀ g/s	NO ₂ g/s	PM ₁₀ g/s	
St Marks PS, Rutherglen	18.2	12.3	0.0029	0.0034	0.000133	0.00017	No
St Peters PS, Hamilton	15.1	12.4	0.0295	0.01	0.001185	0.00051	No
St Marks PS, Hamilton	14.2	12.1	0.0656	0.0138	0.002543	0.000693	No
Coalburn PS, Coalburn	3.1	10.4	0.0241	0.0067	0.000653	0.000309	No
Blackwood PS, Lanark	8.7	12.2	0.0028	0.0008	0.000088	0.000038	No
Heathery Knowe PS, East Kilbride	18.8	12.6	0.0003	0.0001	0.000014	0.000005	No
Mossneuk PS, East Kilbride	13.6	11.7	0.0195	-	0.000739	-	No
Abercrombie House, East Kilbride	14.4	12.2	0.0497	0.0197	0.001941	0.001026	No

7.3 Long range pollutants

Long range pollutants – air pollution that travel in the atmosphere over long distances often crossing countries and international boundaries (often referred to as ‘transboundary’ pollutants). Many of these pollutants undergo chemical changes within the atmosphere, with some generating secondary pollutants.

Pollutants emitted from large-scale industrial activities can potentially travel in the atmosphere over long distances. Once these long-range pollutants are released into the atmosphere, they are subjected to various atmospheric processes that control their transport, and can alter their chemical and physical form generating secondary pollutants such as ozone or the formation of acid rain. These pollutants are eventually deposited, where their overall impacts are dependent on their chemical changes.

Ground-level ozone

Ground-level Ozone (O₃) irritates the airways of the lungs, increasing the symptoms of those suffering from asthma and lung diseases and disrupts plant growth and development. O₃ measured at a particular location may have arisen from pollutants emitted hundreds or even thousands of miles away. For example, South Lanarkshire can be affected from long range pollutants elsewhere in Scotland and the UK and even further afield. There are no O₃ monitoring stations in South Lanarkshire.

Acidification and nutrient enrichment

Acidification is a natural process in soils which can be accelerated by acidic pollutants through rain, cloud/mist or by gas/particle deposition onto the ground or absorbed by plants. These pollutants cause acidification of ecosystems, potentially damaging their biodiversity. Nitrogen rich pollutants also contribute to the nutrient enrichment of ecosystems thus altering the biodiversity within the habitats. The extent to which habitats are able to tolerate both excessive nutrient enrichment and accelerated changes in acidification is dependent on the habitat type and the sensitivity of individual species.

There are no acid and nitrogen deposition monitoring sites in South Lanarkshire. Modelling work conducted for SNIFFER focused on predicting the potential exceedance in critical loads across designated habitats in the UK. The modelling work estimated that in 2010 7 SAC and the SPA site within South Lanarkshire exceeded the critical load for acidification, whilst 6 SAC and the SPA site exceeded the critical load for nutrient enrichment (Table 7.6).

The SNIFFER project also modelled the potential level of exceedance within SSSI sites across the UK, including the 31 SSSI sites in South Lanarkshire (see chapter 2 for site specific details) designated with priority habitats sensitive to atmospheric pollutants (Table 7.7). It was estimated that all sites will continue to exceed in nutrient enrichment by 2020 and 24 sites are predicted to exceed the critical load for acidification.

Table 7.6: Designated sites that exceed critical loads for both acid and nutrient deposition within South Lanarkshire, data based on modelled and predicted emissions

SAC Site	Site critical load exceedance							
	Acidification				Nutrient enrichment			
	2003	2005	2010	2020	2003	2005	2010	2020
Braehead Moss	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clyde Valley Woods	Yes*	Yes*	Yes*	Yes*	Yes	Yes	Yes	Yes
Coalburn Moss	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Craigengar	Yes	Yes	Yes	No	Yes*	Yes*	No	No
Cranley Moss	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Red Moss	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Waukenwae Moss	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SPA Site								
Muirkirk and North Lowther Uplands	Yes	Yes	Yes*	Yes*	Yes	Yes	Yes	Yes

*Exceedance of the lower critical limit for the most sensitive habitat.

Table 7.7: SSSI that exceed critical loads for both acid and nutrient deposition in South Lanarkshire

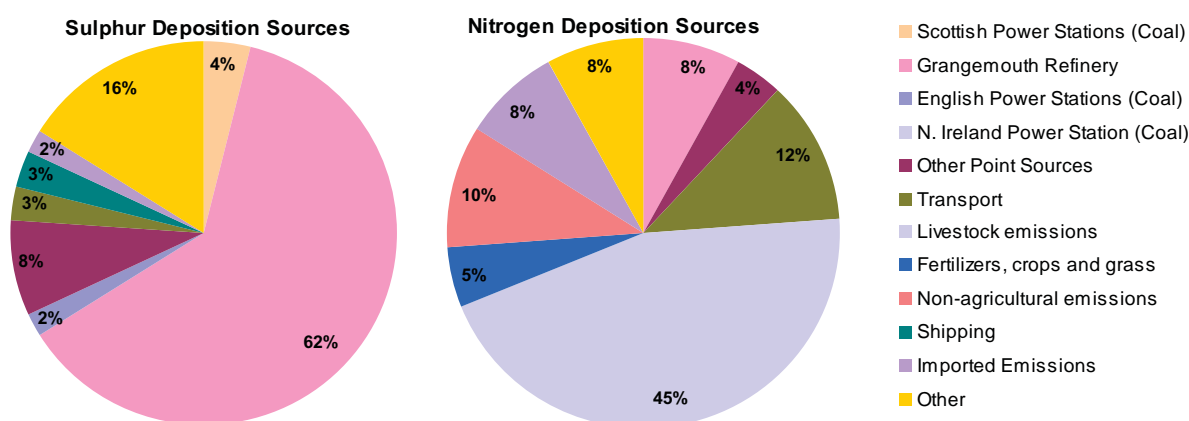
SSSI Site	Site critical load exceedance			
	Acidification		Nutrient enrichment	
	2005	2020	2005	2020
Avondale	Yes*	Yes*	Yes	Yes
Blantyre Muir	Yes	Yes	Yes	Yes
Blood Moss And Slot Burn*	Yes	Yes	Yes	Yes
Bothwell Castle Grounds	Yes*	Yes*	Yes	Yes
Braehead Moss	Yes	Yes	Yes	Yes
Cander Moss	Yes	Yes	Yes	Yes
Carnwath Moss	Yes	Yes	Yes	Yes
Cartland Craigs	Yes	Yes	Yes	Yes
Cleghorn Glen	Yes	Yes*	Yes	Yes
Coalburn Moss	Yes	Yes	Yes	Yes
Cobbinshaw Moss*	Yes	Yes	Yes	Yes
Cobbinshaw Reservoir*	Yes*	No	Yes*	Yes*
Craigengar*	Yes	Yes	Yes	Yes
Cranley Moss	Yes	Yes	Yes	Yes
Falls of Clyde	Yes	Yes	Yes	Yes
Fiddlers Gill	Yes*	No	Yes	Yes
Garrion Gill*	Yes	Yes*	Yes	Yes
Hamilton High Parks	Yes	No	Yes	Yes
Hamilton Low Parks	Yes	Yes	Yes	Yes
Jock's Gill Wood	Yes*	No	Yes	Yes
Millburn	Yes*	No	Yes	Yes
Miller's Wood	Yes*	No	Yes	Yes
Muirkirk Uplands*	Yes	Yes*	Yes	Yes
Nethan Gorge	Yes*	Yes*	Yes	Yes
North Lowther Uplands*	Yes*	Yes*	Yes	Yes
Red Moss	Yes	Yes	Yes	Yes

SSSI Site	Site critical load exceedance			
	Acidification		Nutrient enrichment	
	2005	2020	2005	2020
Shiel Dod*	Yes	Yes*	Yes	Yes
Tinto Hills	Yes*	Yes*	Yes	Yes
Townhead Burn	Yes*	No	Yes	Yes
Upper Nethan Valley Woods	Yes	Yes*	Yes	Yes
Waukenwae Moss	Yes	Yes	Yes	Yes

*Exceedance of the lower Critical Limit for the most sensitive habitat. Source: www.apis.ac.uk

The pollutants that contribute to both acid and nitrogen deposition travel long distances. **Figure 7.6** illustrates the source contribution of these pollutants to Cranley Moss SAC, in 2010.

Figure 7.6: Main sources of acid (sulphur and nitrogen) and nitrogen deposition on Cranley Moss SAC, in 2010



Source: www.apis.ac.uk

The main source of acid deposition within this SAC is from Grangemouth Refinery (62%), whilst sources of nitrogen varied, with agriculture contributing the greatest amount (total of 50%). The modelled levels of sulphur deposition for Carnley Moss was 7.8 kg ha⁻¹ yr⁻¹ for 2010 (acidification equivalent of 0.49 keq ha⁻¹ yr⁻¹), which represented an increase of 16% over 2003 estimates. In contrast nitrogen deposition for 2010 was estimated to have fallen by 10% over the same period, with estimated deposition rates of 12.6 kg ha⁻¹ yr⁻¹ (acidification equivalent of 0.90 keq ha⁻¹ yr⁻¹).

7.4 Airborne nuisance

Airborne nuisance can be pollutants emitted to air and can come in a variety of forms, including dark smoke, dust and odours. These emissions can reduce the overall value of the local environment, from impairing views to reducing the quality of outdoor air. **Table 7.8** displays the number of complaints and their reasons received by the Council between 2005 to 2015. Odour is the largest reason of complaint during each recording period. The number of complaints received has increased for all pollutants with the exception of garden bonfires.

Table 7.8: Complaints received by South Lanarkshire Council 2005/2006 to 2014/2015

Pollutant	Number of complaints									
	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Dust/grit	7	5	12	5	15	5	9	9	8	15
Smoke	24	24	30	31	23	45	34	41	51	58
Fumes	20	14	34	32	19	18	5	23	31	34
Dark smoke	15	21	23	21	17	9	7	3	4	8
Garden bonfires	24	37	31	32	44	33	54	27	44	29
Odour	214	186	189	154	203	170	164	157	133	170

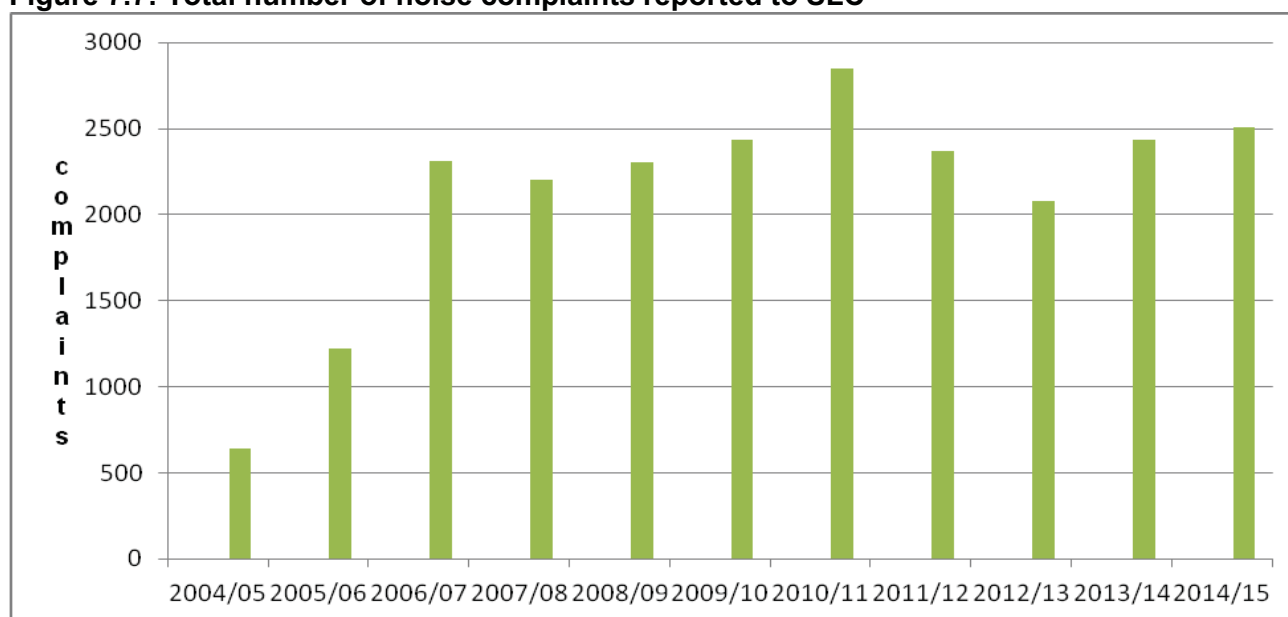
Source: South Lanarkshire Council

7.5 Noise complaints

The definition of noise used by South Lanarkshire Council is provided in the Final Report of the Committee on the Problem of Noise. It is ‘sound which is undesired by the recipient’. This emphasises the subjective nature of noise, involving people and their feelings and recognises that different people have differed perceptions of what is acceptable.

Within South Lanarkshire the majority of noise complaints relate to domestic noise. Noise from domestic properties accounted for 85% of noise complaints during 2014/2015. Overall, 2,507 noise complaints were received by the Council during 2014/2015. Although this is around 12% lower than the peak seen in 2010/2011, this figure is broadly in line with the years from 2006/2007 (the figures generally being within around 10% year on year). The number of noise complaints remains significantly higher than in 2005/2006, reflecting the increased number of complaints to the Council following the introduction of an out of hours noise service during that year (**Figure 7.7 and Table 7.6**).

Figure 7.7: Total number of noise complaints reported to SLC



Source: South Lanarkshire Council

The distribution of noise complaints varies considerably across South Lanarkshire which reflects the differing areas. The majority of complaints arise from the more densely populated urban areas compared to the more rural area of Clydesdale (**Table 7.9**).

Table 7.9: Noise complaints reported to SLC by area

	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
East Kilbride	125	301	631	594	598	664	766	640	443	552	537
Rutherglen	53	133	309	307	332	359	410	279	297	410	411
Clydesdale	69	114	259	258	272	290	319	302	282	283	283
Hamilton	163	349	635	630	752	805	745	684	611	716	796
Unspecified	230	325	480	410	375	317	609	461	446	471	480
Total	640	1,222	2,314	2,199	2,319	2,435	2,849	2,366	2,079	2,432	2,507

Source: Environmental Services, South Lanarkshire Council

Residential noise

Residential noise may arise from different sources, the most common being amplified music, loud televisions and the use of noisy household appliances during unsuitable hours of the night. Complaints of dog barking also form a significant proportion of domestic noise complaints. The noise provision of the Antisocial Behaviour etc (Scotland) Act, 2004 sets out permitted levels of

noise for different times of the day and night intended to reflect acceptable levels of noise within the home.

Residential noise complaints received by the Council have increased in the last two years, particularly with regards to domestic noise and noise from dogs (**Table 7.10**). However, the number of overall complaints remains lower than the level experienced in 2010/2011 (**2,428**). The significant increase in residential noise complaints from 2004/2005 can, in part, be attributed to the Council's adoption of noise control provisions in compliance with the Anti-Social Behaviour etc (Scotland) Act 2004. This includes the introduction of the out-of-hours noise service established in 2005/2006.

Table 7.10: Type and number of complaints received regarding residential noise

	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
Domestic noise	148	661	1,499	1,313	1,427	1,497	1,834	1,646	1,340	1,463	1,516
Alarms (Intruder)	31	35	34	52	33	63	68	53	53	52	64
Dogs	176	233	344	418	412	481	526	351	338	581	563
Total	355	929	1,877	1,783	1,872	2,041	2,428	2,050	1,731	2,096	2,143

Note: some numerical variation is possible due to categories being removed from complaint breakdown

Source: Environmental Services, South Lanarkshire Council

Environmental noise

Environmental noise is defined as 'unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, air traffic and from sites of industrial activity'. The number of complaints of environmental noise across South Lanarkshire has remained fairly consistent since 2006/2007, although there has been a marked increase in complaints regarding construction noise (**Table 7.11**).

Table 7.11: Type and number of complaint received regarding environmental noise

	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
Commercial premises	45	52	65	79	83	102	102	88	108	107	107
Licensed premises	68	103	143	133	126	86	90	61	65	68	58
Construction noise	26	25	25	24	17	22	92	84	92	76	113
Industrial	5	5	19	65	79	36	21	10	8	9	5
Street noise	17	26	29	16	25	20	48	53	44	40	58
Traffic	35	78	90	73	82	72	13	12	25	27	16
Total	196	289	371	390	412	338	366	308	342	327	357

Note: some numerical variation is possible due to categories being removed from complaint breakdown

Source: Environmental Services, South Lanarkshire Council

Environmental noise mapping

The Environmental Noise Directive (2002/49/EC) was transposed into Scottish law by the Environmental Noise (Scotland) Regulations, 2006. The regulations require the Scottish Ministers, as the competent authority, to produce strategic noise maps for all relevant urban areas, roads and railways. South Lanarkshire, as a geographically small area is included in the larger urban area (of over 250,000 inhabitants) known as the 'Glasgow Agglomeration'. Maps are also produced for major roads and major railways throughout South Lanarkshire. The strategic noise maps produced in 2007 can be viewed at <http://www.scottishnoisemapping.org/public/view-map.aspx>.

These noise maps are used to identify areas where the noise climate is deemed to be poor and in need of improvement (noise management areas) and areas where it is good and warrants protection (quiet areas). South Lanarkshire currently has **5** candidate noise management areas: 2

rail related within the Uddingston and Cambuslang areas and 3 road related within Rutherglen and Cambuslang. Maps can be accessed via http://scottishnoisemapping.org/public/action-planning_END_2.aspx.

Areas which have been granted quiet area status must be protected in terms of both size and noise climate. In April 2013, 2 quiet areas were approved in South Lanarkshire: Bothwell Castle grounds and Cambuslang Public Park.

The second round of mapping was completed during 2014 and progress is being made to determine newly identified candidate noise management area(s) and newly identified quiet areas that will have to be considered during the Council's developmental process.

7.6 Light

Issues associated with the provision of outdoor lighting are becoming more recognised as a source of pollution and nuisance and can be detrimental to human health and the environment. Although the importance of artificial lighting for pedestrian and traffic safety and general security is recognised, lighting does have a marked impact on the night environment. Artificial light can significantly change the local character of the area, altering wildlife behavioural and ecological patterns and reducing visibility of the dark skies.

Light nuisance

In February 2013, the Public Health etc., (Scotland) Act, 2008 introduced new and amended statutory nuisance provisions to the Environmental Protection Act, 1990 which means that artificial lighting can be considered to constitute a statutory nuisance in Scotland. The Council's Environmental Services received 18, 31 and 19 complaints relating to artificial light pollution for each year from 2012/2013 to 2014/ 2015, respectively.

8 Water

SEA objectives that relate to water

- To reduce pollution and improve water quality.
- To prevent deterioration and enhance status of aquatic ecosystems, including groundwater.
- To promote sustainable water use.
- To avoid, reduce and manage flood risk.

Scotland's water provides a wide range of benefits, supporting our health and prosperity. These include the provision of drinking water, water for use in industry and agriculture and recreation opportunities. Our water supports a diverse array of habitats and support nationally and internationally important species.

The River Clyde and its tributaries are essential to the character of the area. Rising in the Lowther Hills, the River Clyde meanders its way through South Lanarkshire towards the outer reaches of the City of Glasgow before flowing into the Clyde Estuary and Firth of the Clyde.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

The Current status is shown by the following colours:

G Good	F Fair
P Poor	 Limited data

The trend direction is shown with the following arrows:

↑	Improving
↔	No change
↓	Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Water quality	F	↑	The overall status of the water environment remains consistent with 49% of all rivers achieving the Water Framework Directive (WFD) High/Good status. The number of sampled rivers has also increased.
River flow	F	↓	The annual water flow rates in the rivers across the region have continually increased. This increase is closely linked to the increase in annual precipitation rates.
Groundwater and wetlands	F	↑	The status of groundwater bodies in South Lanarkshire has improved since the 2013 report. The data available on ponds is being developed but is still limited about other wetlands in the area.
Water pollution	G	↑	Point source pollution is closely regulated and monitored by SEPA. Licensed activities continue to increase year on year within South Lanarkshire.
Flooding	P	↑	Climate change predictions indicate a potential risk of increased flood incidents with severe weather events in 2013 causing an increase in river flooding incidents dealt with by the Council. The Council's approach to flood management continues to improve due to the additional resources provided to implement statutory requirements.

Baseline situation

The water environment is important for South Lanarkshire in terms of the local economy, the health and wellbeing of the people who live, work and visit the area and for wildlife. Human activity can damage the water environment, affecting the quality of the water itself or through inputs associated with activities on land or the deposition of air pollutants.

Water quality in South Lanarkshire is relatively good and continues to improve, particularly for surface water bodies. There has been a continual increase in annual water flow rates, in line with increasing precipitation across the region. The number of flooding occurrences reported to the Council has significantly decreased since 2012 as has the requirement for flood scouting actions.

8.1 Principal watercourses

There are **25** principal watercourses which flow through South Lanarkshire. Many of these are tributaries of the River Clyde (**Table 8.1**).

Table 8.1: Principal watercourses in South Lanarkshire

Principal watercourse	Span (km)	General information
Avon Water	46	A tributary of the River Clyde, the Avon flows through Strathaven and Larkhall from its source on Weddle Hill, East Ayrshire.
Biggar Water*	7	The Biggar Burn rises at the southern end of the Pentland Hills and flows south through Biggar, turning into Biggar Water, flowing through Broughton before joining the River Tweed.
Calder Water	15	Calder Water rises on the slopes of Laird's Seat joining with the Rotten Burn to form the Rotten Calder. The river flows down through Calderglen joining the River Clyde west of Uddingston.
Camps Water	6	Flowing from Camps Reservoir, Camps Water joins the River Clyde north of Crawford.
River Clyde	138	Formed by two streams, the Daer and the Potrail Waters that meet at Watermeetings high in the Lowther Hills. The river flows down through many of the main urbanised areas, including Hamilton, Blantyre and Rutherglen.
Culter Water	8	Culter Water rises in hills south of Biggar, flowing through the Culter Water Reservoir before passing Coulter and joining the River Clyde.
Daer Water	16	Daer Water rises on Queensberry Hill in the Lowther Hills and flows through the Daer Reservoir before joining Potrail Water to form the River Clyde.
Douglas Water	32	The Douglas Water rises in the hills in East Ayrshire, flowing through Douglas before joining the River Clyde.
Duneaton Water	30	A tributary of the River Clyde, Duneaton Water flows passed Crawfordjohn before joining the Clyde at Abington.
Elvan Water	11	From the Lowther Hills the Elvan Water joins the Clyde near Elvanfoot.
Evan Water	19	Evan Water rises in the south Lowther Hills and flows south to join the River Annan at Three Waters Foot.
Garf Water	11	Garf Water rises on the slops of Robert Law and flows east to join the River Clyde near Wiston.
Glengavel Water	6	Glengavel Water passes through the Glengavel Reservoir before meeting the Avon Water.
Glengonnar Water	11	Glengonnar Water rises in the Lowther Hills and is a tributary to the River Clyde.
Kype Water	10	Kype Water flows from the Kype Reservoir joining River Avon near Strathaven.
Lochar Water	7	Flowing from Lambhill the Lochar Water joins the Avon Water before Strathaven.
Logan Water	11	Rising in Spirebush Hill the Logan Water flows through the Logan Reservoir before joining with the River Nethan and then the River Clyde.
Medwin Waters (North)	17	Rises in the Pentland Hills, close to West Lothian and flows south to join with the South Medwin to form Medwin Waters
Medwin Waters (South)	25	Rises in the Pentland Hills flowing south to form the border between South Lanarkshire and the Scottish Borders before joining the North Medwin to form Medwin Waters and then the River Clyde.
Midlock Water	10	Rising near Clyde Law the Midlock Water joins the River Clyde near Crawford.
Mouse Water	26	Mouse Water is a tributary of the River Clyde flowing from south of Forth to join the Clyde near Lanark.
Nethan Water	27	The River Nethan flows northwards to the River Clyde from the hills south of Lesmahagow. Its upper reaches are extensively afforested and there are also abandoned mines in the catchment. The main river passes along the edge of

Principal watercourse	Span (km)	General information
		the huge Dalquhandy Opencast Coal Site. A tributary of the River Nethan, the Logan Water, is used to fill the Logan and Dunside reservoirs.
Potrail Water	12	Rises on Ballencleuch Law in the Lowther Hills and joins Daer Water near Elvanfoot to form the River Clyde.
Snar Water	10	Rising on the slopes of Wanlock Dod, Snar Water joins Duneaton Water near Crawfordjohn.
White Cart Water**	36	Rises in the foothills of the Eaglesham Moors on the slopes of Corse Hill, flowing through the East Renfrewshire and South Lanarkshire border before joining Black Cart Water at Paisley.
* does not flow into Clyde catchment ** borders with East Renfrewshire and South Lanarkshire		

In addition to the principal watercourses, there are a number of burns of strategic significance as shown in **Table 8.2**.

Table 8.2: Burns of strategic significance in South Lanarkshire

Cambuslang	Clydesdale	East Kilbride	Hamilton	Rutherglen
Black	Devon	Darngaber	Cadzow	Cityford
Kirk	Roberton	Kittoch Water	Covan	Scion
Lightburn/Newton		Powmillon	Earnock/Wellshaw	
Whitelaw/Eastfield				

There are **20** reservoirs across South Lanarkshire, (**Table 8.3** and **Table 8.4**). South Lanarkshire Council is the Enforcement Authority for these reservoirs under the Reservoirs Act, 1975, responsible for ensuring the Statutory Undertakers (owners) comply with their statutory requirements. This legislation will be replaced by the Reservoirs (Scotland) Act, 2011 when fully enacted when responsibility will pass to SEPA. The Council is 'Reservoir Manager' for the James Hamilton Heritage Loch and Lanark Loch.

Table 8.3: Principal reservoirs in South Lanarkshire

Principal water bodies	Area (km ²)	General information
Camps Reservoir	0.71	Provides drinking water to the Hamilton area
Cowgill Lower Reservoir	0.03	Provides drinking water to the Lothians
Cowgill Upper Reservoir	0.09	
Coulter Reservoir	-	Serves Motherwell, Wishaw and Biggar with drinking water
Daer Reservoir	1.97	Fed by Daer Water, the reservoir is the principal drinking water supply for South Lanarkshire
Kype Reservoir	0.11	South of Strathaven, serving the area with drinking water

Table 8.4: Smaller water bodies in South Lanarkshire, including covered reservoirs

Reservoir	National Grid Ref	Reservoir	National Grid Ref
Boghead	NS 764409	James Hamilton Heritage Loch	NS 631559
Cleuch	NS 937355	Kittoch Bridge Flood Storage	NS 589568
Dunside Lower	NS 749373	Lanark Loch	NS 899431
Dunside Upper	NS 747373	Loch Lyoch	NS 932357
East Rogerton Tank	NS 630567	Logan	NS 745361
Glen Franka Dam	NS 890133	Peden	NS 941124
Glengavel	NS 664350	Springfield	NS 905520

8.2 Water Quality

The quality of the water environment can have a significant effect on the health of people, flora and fauna. For example, pathogens derived from sewage effluent or livestock can enter watercourses

and excessive nutrients in lochs and streams can lead to blue-green algae blooms which are toxic to humans and fauna.

Rivers support a wide variety of wildlife, providing important habitat corridors that enable the dispersion and migration of many species. The quality of river water is important for supporting wildlife and as a major resource for providing drinking water and water used by industry. The quality and flow of rivers is directly affected by the level of abstraction and discharge into the river and from the quality of ground waters that support them. The Water Framework Directive (WFD) provides the legal framework for the protection, improvement and sustainable use of waters.

The Water Framework Directive (2000/60/EC) – designed to improve and integrate the way water bodies are managed throughout Europe, ensuring that water bodies don't deteriorate in status and that all achieve at least good status by 2015, unless it is demonstrated that less stringent objectives should apply.

One of the principal aims of River Basin Management is the protection of the country's high quality environment balanced against the need for sustainable development.

River water quality

SEPA monitors the quality of rivers across South Lanarkshire, collecting data and classifying the rivers in terms of their status. The WFD monitoring framework is aimed at improving and protecting the whole water environment. It introduced new parameters for recording the quality of the water environment including ecological status (natural and the presence of alien species), the natural and modified river flow, the presence of engineering works, such as culverting and flood defence or any other manmade barriers that affect the morphology and habitats of the river, such as preventing migratory movements.

Since SEPA published their assessments of the ecological quality of Scotland's surface water bodies in the river basin management plans in 2009, they have progressively improved their understanding of the state of the water environment. This has been achieved by increasing the amount of environmental data on which the assessments are based and developing and refining the models used to interpret them. In 2014, further improvements were made, including the introduction of a wide range of new and updated indicators for assessing the health of aquatic ecosystems. As such the data presented in Tables 8.6 and 8.8 are not directly comparable with previous water quality data.

Surface water bodies are classified using a system of five quality classes – high, good, moderate, poor and bad. In general, the classification of water bodies describes by how much their condition or status differs from near natural conditions. Water bodies in a near natural condition are at high status, while those whose quality has been severely damaged are at bad status.

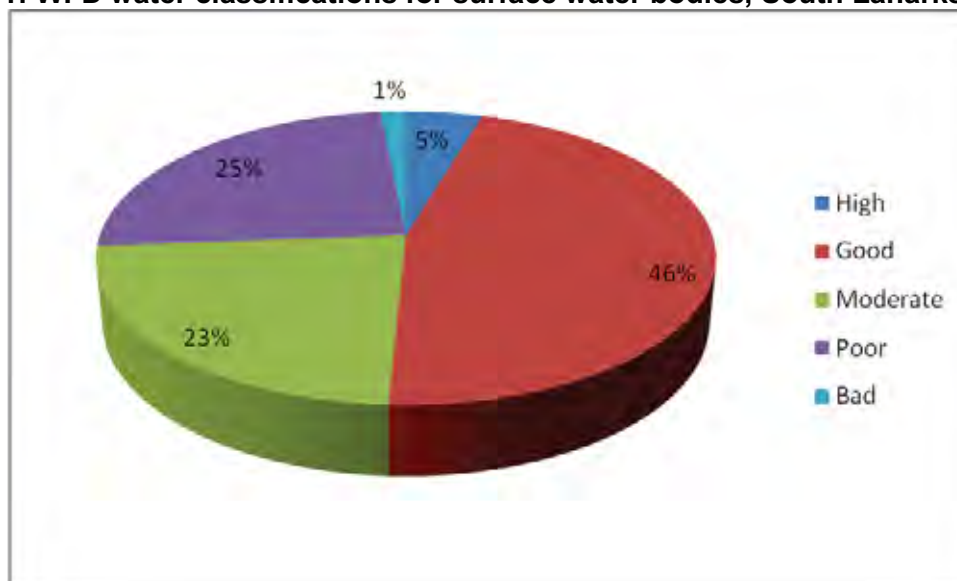
The WFD classification data for rivers across South Lanarkshire has been divided into Surface Water bodies and Heavily Modified Water bodies (HMWB) (**Table 8.5** and **Table 8.8** respectively). For surface water bodies, **51%** were classified with an overall status of either high or good, with **25%** being assessed as poor and only **1** recorded as bad (Malls Mire Burn/ Pomadie Burn/ City Burn on the River Clyde). The physico-chemical classification recorded **91%** of water bodies in South Lanarkshire as being either high or good, with only **4%** recorded as poor, There was a wide range of classifications recorded for biological element, with **58%** being recorded as either high or good, **17%** as moderate and **25%** achieving poor status. In terms of hydro-morphological classification, **86%** of surface water bodies achieved either high or good status (86%). However, **1** was recorded as bad. These findings are further reflected in **Figure 8.1**.

Table 8.5 WFD water classifications for surface water bodies, South Lanarkshire, 2013

	Overall status		Physico-chemical		Biological element		Hydro-morphological	
	No.	%	No.	%	No.	%	No.	%
High	3	5	37	65	19	29	6	9
Good	30	46	15	26	19	29	50	77
Moderate	15	23	3	5	11	17	8	12
Poor	16	25	2	4	16	25	0	0
Bad	1	1	0	0	0	0	1	1

Source: SEPA

Figure 8.1: WFD water classifications for surface water bodies, South Lanarkshire, 2013



Source: SEPA

Heavily Modified Water Bodies are surface water bodies which have been substantially altered in character for purposes such as flood protection, navigation, hydroelectricity generation, public water supply, recreation, land drainage, other important human sustainable development activities and where their physical characteristics cannot be restored without significant adverse impacts on the uses served by the alterations or on the wider environment. For water bodies designated as HMWB, their classification is defined in terms of ecological potential, a measure of how the ecological quality of such a water body compares with the maximum quality achievable given the physical constraints imposed by its use.

The water bodies designated as HMWB in 2013 in South Lanarkshire are set out in **Table 8.6**. Water bodies designated as HMWB cannot achieve 'good ecological status' as prescribed in the Directive, instead they must achieve 'good ecological potential'.

Table 8.6: Water bodies designated as HMWB in South Lanarkshire, 2013

ID	Name	ID	Name
5325	Biggar Water/Biggar Burn	10002	Kittoch Water
10040	River Clyde (North Calder to Tidal Weir)	10043	Daer Water
10071	Wellshaw/Earnock Burn	10108	Cow Gill/Eastside Burn/Duncan Gill
10117	Camps Water	10408	Avon Water/Glengavel Water

Of the water bodies designated as heavily modified, 2 achieved good ecological potential in 2013 (Cow Gill and Camps Water). However, the River Clyde (North Calder to Tidal Weir) was assessed as having bad ecological potential (**Table 8.7**).

Table 8.7: WFD water classifications for HMWB across South Lanarkshire, 2013

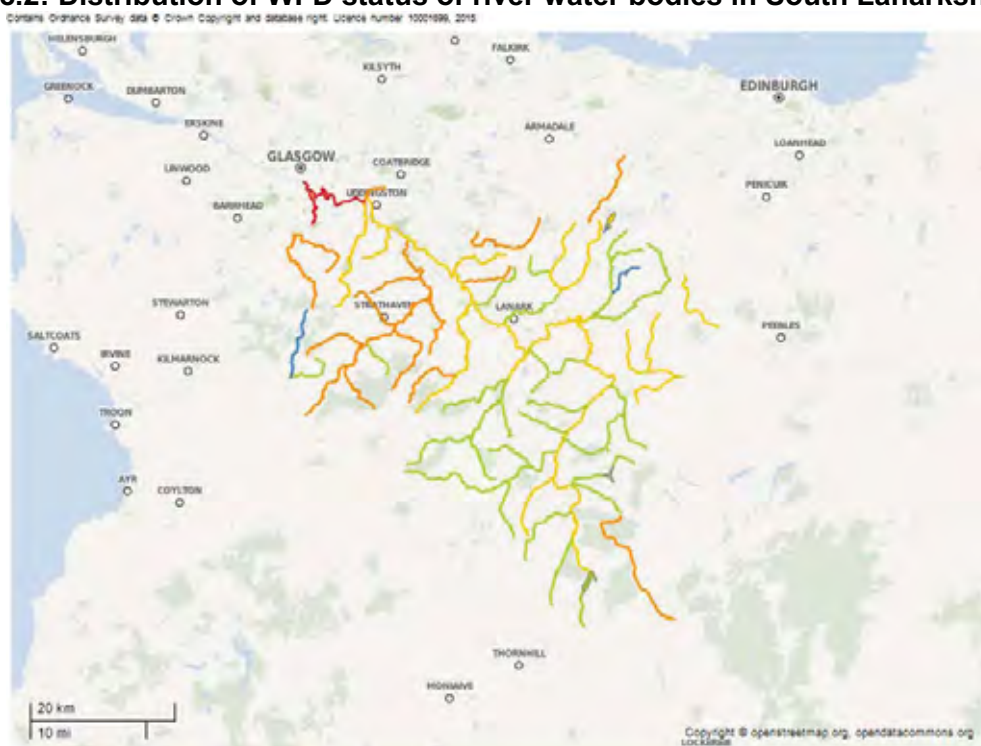
Class	Number of Heavily Modified Water Bodies across each monitoring element			
	Overall Status (ecological potential)	Physio-chemical	Biological element	Hydro-morphological
High	0	0	2	0
Good	2	2	1	1
Moderate	3	2	2	7
Poor	2	0	2	0
Bad	1	0	1	0

Source: SEPA

The aim of WFD monitoring is to ensure sufficient environmental information is gathered to enable progress towards attainment of the WFD objectives that all water bodies achieve at least good status/good ecological potential by 2015. At 2013, in South Lanarkshire 3 rivers achieved high status and 34 achieved good status/good ecological potential, while 51.3% (a reduction from 52% in 2011, 61% in 2009 and 75% in 2007) are currently under the legislative aims of the WFD.

Figure 8.2 provides an overview on the location for such water classifications in South Lanarkshire. It is important to note that the classification tools for some elements of the WFD system continue to be refined which may result in a future change of status for some water bodies.

Figure 8.2: Distribution of WFD status of river water bodies in South Lanarkshire, 2013



Source: SEPA: Scotland's Environment Web

Lochs and reservoirs

Similar to the river quality, the quality of standing waters (reservoirs and lochs) is assessed using the WFD classification system. This is based on chemical, biological/ecological and hydrological indicators. However, this classification is only applied to lochs larger than 1 km² and smaller lochs of particular importance. In South Lanarkshire two standing water bodies, the Daer Reservoir and the Camps Reservoir fulfil the criteria.

Based on the WFD criteria, both the Daer and Camps Reservoirs are classified as HMWB. Both reservoirs have a poor hydro-morphology, a low ecological status in the water quality because of the physical characteristics of the water (**Table 8.8**). This is due to dam structures adversely affecting the natural flows in the catchment. However, both reservoirs have been classified as having high status for physico-chem, with Daer Reservoir being classed as having good biological elements and the Camps Reservoir being classified as high. Both reservoirs have been classified as having good ecological potential.

Table 8.8: WFD classifications in South Lanarkshire, 2013

Reservoir	Overall status	Physico-chem	Biological elements	Hydro-morphology
Daer	Good EP	High	Good	Poor
Camps	Good EP	High	High	Poor

Source: SEPA

8.3 River flow

There has been limited change over the years to the location of the principal watercourses across South Lanarkshire. Modifications to smaller watercourses including culverting have been undertaken within urban areas (notably East Kilbride). No records exist to identify the extent of any such alterations to watercourses but these will rarely alter the overall flow of the rivers significantly. A greater potential for influencing river flow rates is through an increased input (increasing the input from surface drainage) or extraction (extracting the water for general usage). Weirs and other physical barriers can alter the fluctuation within the flow rates but offer greater resistance to migration of fish upstream. Climate change offers the greatest threat to altering river flow rates, particularly with increasing annual rainfall.

Average annual rainfall varies across South Lanarkshire, from over 1,500mm across the Southern Uplands to around 1,100mm over the northern urbanised lowland areas. Most of the area is predominantly drained by the tributaries that flow into the River Clyde and precipitation changes within the Clyde catchment will have a significant effect on the flow characteristics of the rivers.

There are 15 gauging stations in South Lanarkshire. These are detailed in **Table 8.9**.

Table 8.9: River gauging stations in South Lanarkshire, (2013)

River Avon at Avonbank	Avon Water at Fairholm	Biggar Burn, NE of Baitlaw Farm
Cander Water at Candermill	River Clyde at Abington	River Clyde at Blairston
River Clyde at Daldowie	River Clyde at Hazelbank	River Clyde at Sills of Clyde
River Clyde at Tulliford Mill	Douglas Water at Happenden	Duneaton Water at Maidencots
Kittoch Water at Waterside	River Nethan at Kirkmuirhill	Rotten Calder at Redlees

Two stations have been used to provide river flow data representing the lower River Clyde at Blairston, near Bothwell and the upper contributory Duneaton Water at Maidencots, near Abington. The annual mean flow rates on both the River Clyde and Duneaton Water increased from 1970 to 2006 by approximately **15%** and **25%** respectively (**Table 8.10** and **Figure 8.3**). Changes in river flow rates at the River Clyde gauging station closely correlate with annual rainfall. This could be due to the large catchment area associated with this river (1,704.2 km²), allowing a greater degree of buffering.

Table 8.10: Yearly mean water flow rates at two river gauging stations monitoring the River Clyde and the contributory river Duneaton Water

Year	River Clyde at Blairston		Duneaton Water at Maidencots	
	Annual flow (m ³ s ⁻¹)	Annual rainfall (mm)	Annual flow (m ³ s ⁻¹)	Annual rainfall (mm)
1970	42.00	1198	3.06*	1375
1971	30.36	936	2.55*	1060
1972	32.12	952	-	-
1973	27.09	875	2.02	1038

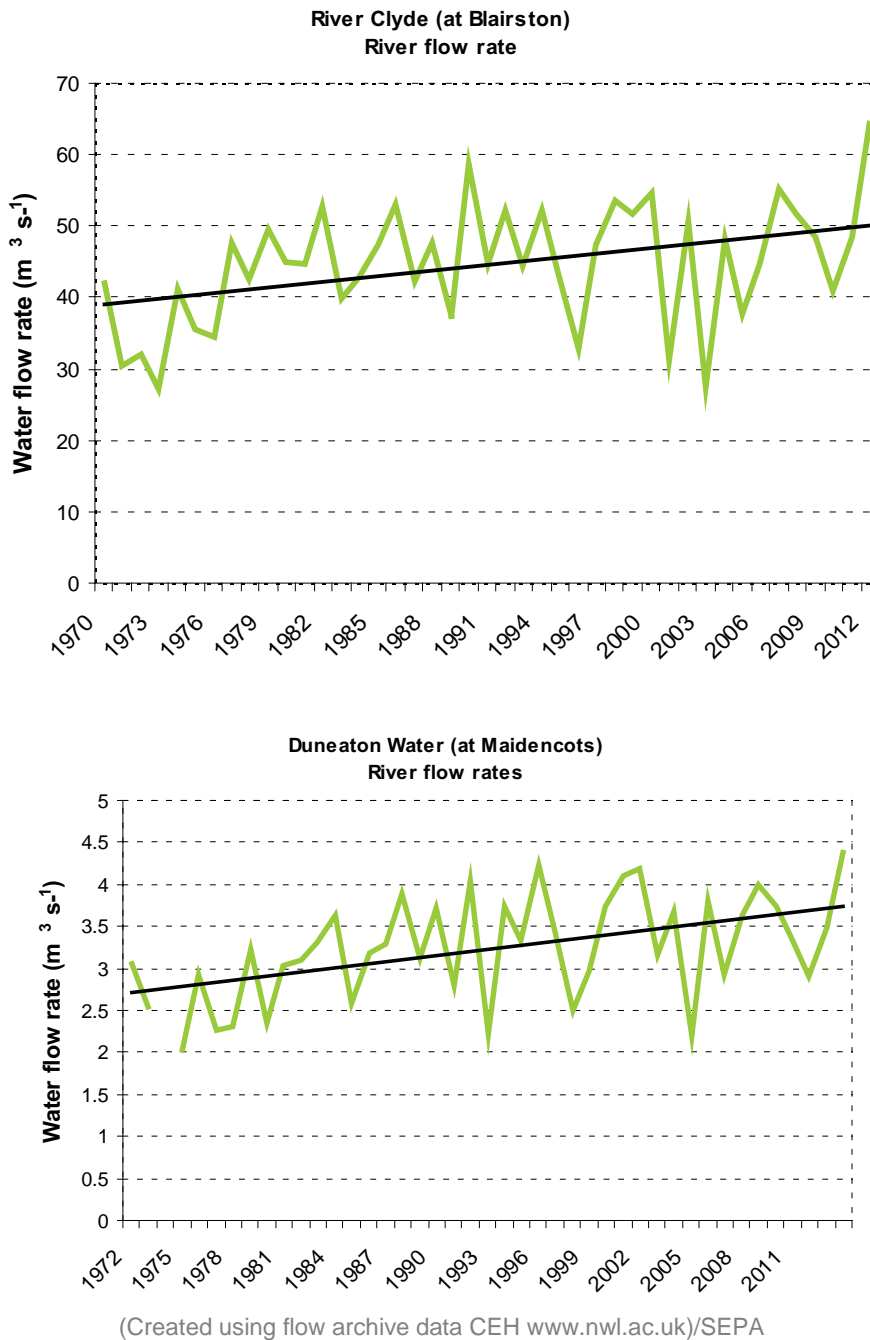
Year	River Clyde at Blairston		Duneaton Water at Maidencots	
	Annual flow (m ³ s ⁻¹)	Annual rainfall (mm)	Annual flow (m ³ s ⁻¹)	Annual rainfall (mm)
1974	41.13	1209	2.93	1637
1975	35.42	985	2.26*	1254
1976	34.49	1021	2.32	1286
1977	47.62	1269	3.22	1664
1978	42.64	1144	2.35*	1394
1979	49.55	1244	3.04	1511
1980	45.03	1170	3.09	1411
1981	44.72	1169	3.32	1410
1982	52.77	1390	3.63	1673
1983	39.87	1138	2.58	1314
1984	42.80	1162	3.18	1352
1985	47.42	1252	3.29	1407
1986	53.02	1366	3.88	1660
1987	42.32	1124	3.12	1285
1988	47.55	1221	3.71	1475
1989	37.37	1077	2.79*	1292
1990	58.80	1527	4.03	1783
1991	44.58	1211	2.21*	1430
1992	52.33	1366	3.74	1562
1993	44.52	1203	3.32	1366
1994	52.31	1355	4.22	1560
1995	42.91	1154	3.43*	1316
1996	32.89*	962	2.50	1157
1997	47.30*	1148	2.96	1368
1998	53.66	1421	3.75	1626
1999	51.57	1414	4.11	1624
2000	54.70	1439	4.19	1671
2001	31.35*	1015	3.15*	1195
2002	50.75	1419	3.67*	1643
2003	27.57	917	2.21	1072
2004	48.28	1334	3.80	1485
2005	37.80	1110	2.93	1258
2006	44.75	1332	3.62	1571
2007	55.25	1260	3.99	1855
2008	51.62	1230	3.74	1460
2009	48.43	990	3.34	1381
2010	40.85	924	2.91	1162
2011	48.60	Unavailable	3.48	Unavailable
2012	64.29	Unavailable	4.38	Unavailable
2013	31.65**	Unavailable	2.49**	Unavailable

*Annual mean flow calculated using monthly mean data – limitations in data due to missing monthly data

** To 30 September 2013

Source: CEH www.nwl.ac.uk/SEPA

Figure 8.3: Trends in yearly mean water flow rates at two river gauging stations monitoring the River Clyde and the contributory river Duneaton Water



8.4 Groundwater and wetlands

Groundwater

Groundwater is water under the surface of the land. At 2013, there were **24** groundwater water bodies within or intersecting South Lanarkshire which vary in area from just under **7km²** to over **800km²**. **Fifteen** of these have had their overall status classified as good, while the remaining **9** are classified as poor status. This is a significant improvement from 2011 when 12 water bodies achieved good status. However the monitoring requirements have changed slightly.

Ponds

The Countryside Survey defines ponds as ‘a body of water between 25 m² and 2 ha in area which usually holds water for at least four months of the year’. Ponds can be in many forms both, natural

or man-made and can be permanent or seasonal (or temporary). Ponds are important habitats for a range of fauna and flora, including amphibians, invertebrates and ferns.

The 2007 survey estimates there are 198,000 ponds in Scotland, an increase of 6% since 1998. In total 9.9% of ponds met Priority Habitat status based on the quality criteria for plants. Pond quality measurement has not yet been developed for Scotland, however, findings from surveys such as the National Pond Survey suggest that, although there is likely to be degradation of some Scottish ponds, overall quality is likely to be higher than in England and Wales. Pond deterioration can be contributed to a combination of urban development and rural land use intensification. In South Lanarkshire, threats to pond quality mainly come from pollution, for example, agricultural and urban runoff and acidification and infilling for land development or agricultural use. Sustainable Urban Drainage Systems (SUDS) can use ponds and similar water bodies to prevent flooding.

Wetlands

Scotland's wetlands, including peatlands, are home to a special range of plants and animals and contribute uniquely to storing carbon as well as sustaining clean water. They can help reduce flooding and provide valuable grazing. Wetlands are areas where water covers the soil, or is periodically present either at, or near, the surface of the soil. The prolonged presence of water promotes the development of characteristic wetland soils and favours the growth of specially adapted types of plant.

Pressures affecting wetlands include, intensive land management and change in use, land-take for development such as buildings, roads and windfarms, climate change, nutrient pollution from water and the atmosphere and drainage or removal of groundwater flow as a result of developments. There is little survey data for South Lanarkshire, with only specific habitats monitored (such as Langlands Moss). There are no designated or proposed wetlands of international importance in South Lanarkshire as set out by the Ramsar Convention.

8.5 Water pollution

Point source

Water quality has continually got better through improvements in the treatment of sewage and effluent discharges but point source pollution still remains an important threat to water quality. Point sources of water pollution include discharges from municipal sewage treatment works and industrial installations. Discharges from sewage treatment works can contribute to water pollutants in the form of oxygen-depleting nutrients and pathogens that can be a serious health hazard. Industrial discharges can contribute in the form of toxic chemicals and heavy metals. SEPA regulates point source discharges through licensing and by monitoring potential impacts on water bodies under the following legislation:

- **The Water Environment (Controlled Activities) (Scotland) Regulations 2011.** Outlines the different levels of authorisations to allow for proportionate regulation depending on the risk an activity poses to the water environment. Some activities require authorisation including Point Source discharges, engineering activities, impoundments and abstractions.
- **The Pollution Prevention and Control (Scotland) Regulations 2012.** Known as the PPC Regulations they regulate specified large-scale industrial activities.

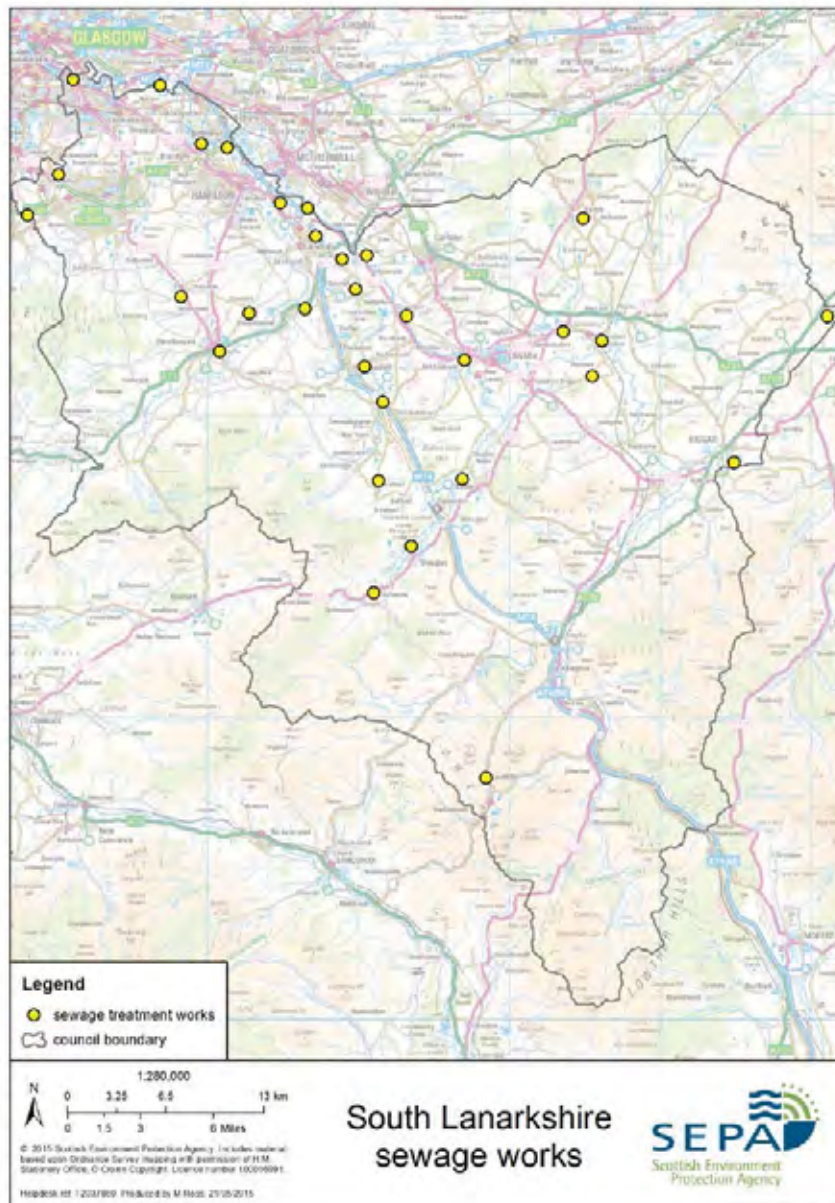
At May 2015, there are around **1,762** CAR authorisations in South Lanarkshire covering a range of operations and licensed activities. These include **1,437** Registration level activities, **180** simple licenses and **145** complex license activities. Scottish Water hold approximately **90** authorisations for a number of discharges ranging from village septic tanks, waste water treatment works and their associated sewerage networks. This reduction from 2011 is due to all sewerage pumping stations and Combined Sewage Overflows (CSO) now being consolidated within one Sewer Network Licence (**Figure 8.4**). There are **9** PPC licensed activities that discharge to water or waste water systems.

Diffuse pollution

Diffuse pollution into water bodies (including ground-waters) is usually associated with land use, with agricultural activity and urban runoff the most significant causes. Diffuse pollution from agriculture is derived from heavy and inappropriate fertiliser use including ammonia release, field runoff containing suspended soil particulates and other solids washed out during periods of high rainfall, phosphates and pesticide use. Urban runoff is associated with surface water contaminated with a range of suspended solids, sewage contamination and a mixture of chemicals including oils.

In rivers, the largest impacts are caused by diffuse pollution from farmland and urban areas and the disposal of sewage through small-scale septic tanks. Ground-waters are particularly vulnerable to a build up of nitrate levels associated with fertiliser and pesticides washed down through the soil. Diffuse pollution from both agricultural and urban pollution has significant impacts on water quality in South Lanarkshire.

Figure 8.4: Main sewage treatment works (STWs) in South Lanarkshire, 2015



Source: SEPA

Nitrate Vulnerable Zones

Nitrate Vulnerable Zones (NVZ) are designated in accordance with the requirements of the Nitrates Directive which aims to reduce water pollution caused by nitrates from agricultural sources.

The Nitrates Directive (91/676/EEC) requires EU member states to identify areas where agriculture has contributed to excess nitrate levels in surface waters or groundwater. The land which drains into these areas must be designated as nitrate vulnerable zones (NVZ). Where an NVZ is designated, action programmes must be put in place to reduce pollution by nitrates from agricultural sources.

In Scotland, there are four designated NVZs, comprising 14% of the land area. None of these are in South Lanarkshire. However, the area does fall within zones identified for the catchments that drain to nutrient sensitive areas.

8.6 Flooding

Incidents of flooding can have devastating social and economic consequences for people, businesses and communities. In general terms, South Lanarkshire has experienced flooding. In recent years summer flash floods have tended to cause more problems than winter flooding. Evidence suggests that flooding incidents have increased, particularly over the past few decades and this is the case in South Lanarkshire. The increased frequency and intensity of flooding is likely to continue because of the changes in local weather patterns associated with climatic change.

Current climate change predictions suggest Scotland will experience an increasing warmer and wetter weather shift. South Lanarkshire is predicted to have more intense or prolonged rainstorms resulting in greater water surges through our river networks, leading to an increase both in intensity and frequency of flooding episodes. In South Lanarkshire, there has been an increase in both rainfall and water flow rates across river networks. The increased threat of flooding can potentially cause further damage to South Lanarkshire's economy and society, disruption to transport links, the public water supply and increased vulnerability to personal and commercial property.

The Flood Risk Management (Scotland) Act 2009 introduced new duties for the Council, as a Responsible Authority under the Act, in relation to assessing and managing flood risk. The Council were identified as a potential participant in four of the fourteen Local Flood Risk Management Districts proposed in Scotland, namely Forth, Clyde and Loch Lomond, Tweed and Solway (**Figure 8.5**). However, as there is no significant flood risk or any potentially vulnerable areas identified within South Lanarkshire in the Solway and Forth districts, it was proposed that the Council would not actively participate in those areas. **Table 8.11** set out the properties at flood risk in the Potentially Vulnerable Areas within South Lanarkshire.

Table 8.11: Properties in South Lanarkshire at flood risk in Potentially Vulnerable Areas

District	Residential	Non-Residential	Total
11 - Clyde and Loch Lomond	1,841	198	2,039
13 -Tweed	55	20	75
Total	1,896	218	2,114

Source: South Lanarkshire Council

Changes in weather patterns associated with climate change have been attributed to increased seasonal tidal surges, increased annual rainfall and increased river flow rates which can increase the risk and frequency of flooding in the future.

Figure 8.5: Potentially Vulnerable Areas of flooding in South Lanarkshire.



Source: SEPA and South Lanarkshire Council

Flooding incidents

In the eight years between 2007 and 2014 there have been 5,446 recorded flooding incidents in South Lanarkshire. The majority of these incidents were relatively minor category 1 or 2 occurrences. However, 12.5% of incidents resulted in flooding of residential and/or commercial property. In the same period, there have been seven incidents of significant river flooding. The high level of reported flooding occurrences in 2008 was related to severe weather in that year (Table 8.12).

Table 8.12: Flooding occurrences reported in South Lanarkshire between 2007 and 2014

	Category 1 Choked gully	Category 2 Minor flooding	Category 3 Property flooding	Category 4 River flooding	Total
2007	229	234	48	1	512
2008	438	555	175	1	1,169
2009	296	270	60	1	627
2010	192	127	26	0	345
2011	290	413	118	1	822
2012	387	317	144	0	848
2013	334	192	59	2	587
2014	312	165	58	1	536

Source: South Lanarkshire Council

Flood response work

South Lanarkshire Council has discretionary powers to promote flood protection schemes and a duty to assess water bodies. The Council established ‘Response to Flooding’ procedures which set out the level of action required at various priority locations to manage the risk of flooding and the scenarios which could trigger these actions. There are three situations which trigger the Response to Flooding procedures:

- Forecasted rainfall greater than 5mm per hour and/or 25mm in a 24 hour period.
- Senior management activates the flood scouting system in response to local weather conditions.
- SEPA issues a Flood Warning on the River Clyde.

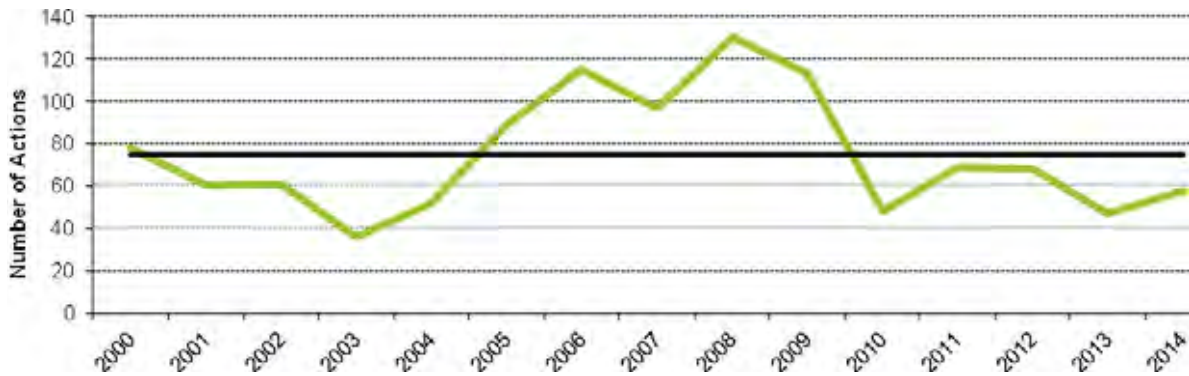
Flood 'scouting' actions undertaken by the Council increased significantly between 2005 and 2009 before returning to more typical levels from 2010, (Table 8.13 and Figure 8.6).

Table 8.13: Flood scouting actions within South Lanarkshire 2000 - 2014

	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Jan	N/A	16	5	17	23	15	3	3	4	4	8
Feb	N/A	6	4	5	9	2	1	6	5	3	7
March	N/A	6	7	7	12	10	3	1	0	0	6
April	10	7	7	0	5	3	2	0	2	6	3
May	2	9	14	5	6	7	0	4	3	3	4
June	2	9	9	8	9	8	2	6	8	1	2
July	4	3	8	14	9	16	10	7	6	6	0
Aug	16	6	4	11	17	15	4	7	6	1	4
Sept	11	2	9	8	9	6	3	12	7	6	1
Oct	15	11	10	8	16	9	10	10	9	12	10
Nov	11	11	15	5	5	19	10	3	8	3	2
Dec	7	3	23	9	10	3	0	10	10	2	11
Total	78	89	115	97	130	113	48	69	68	47	58

Source: South Lanarkshire Council

Figure 8.6: Annual flood scouting actions undertaken by SLC 2000 - 2014



Source: South Lanarkshire Council

9 Climate change

SEA objectives that relate to climate change





- To reduce contributions and vulnerability to climate change.
- Adapt to avoid the risk associated with climate change.
- Reduce greenhouse gas emissions and increase energy efficiency where appropriate utilise renewable energy sources.

The Earth's climate goes through natural climatic cycles which human activities have disrupted resulting in shifts of instability never seen before. As a direct result, climate change is regarded as one of the greatest threats facing our environment.




Scotland's climate is linked with the global climate. Therefore global changes have a consequence both nationally and locally. Over the past century Scotland's climate has changed more rapidly than anything evident in the past, with global temperatures rising along with increased emissions of greenhouse gases. Average temperatures have increased by approximately 1°C, with an overall trend towards a warmer climate and more extreme weather phenomena. Such changes could be manifested by hotter summers and wetter winters. Scotland is currently experiencing fewer frosts and longer growing seasons.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.











The Current status is shown by the following colours:

 Good	 Fair
 Poor	 Limited data

The trend direction is shown with the following arrows:

	Improving
	No change
	Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
GHG emissions			Greenhouse gas emissions continue to decrease across South Lanarkshire year on year. Emissions per capita are notably below the Scottish average.
Energy consumption			Although both gas and electricity consumption continue to decrease in South Lanarkshire, the domestic consumption per household remains above the national average.
Transport emissions			Fuel consumption and kilometres travelled have both fallen although at a slower rate than other sectors. Vehicles are becoming more energy efficient and less polluting contributing to a 7% reduction in transport emissions since 2005.
Renewable capacity			South Lanarkshire's renewable energy capacity increased by over 80% since 2011. The area is an energy exporter.
Environmental awareness			Good progress is being made in implementing the Council's Sustainable Development Strategy. All schools are registered with the Eco-Schools programme and work is ongoing to promote environmental awareness and sustainability in schools.

Baseline situation

The climate in South Lanarkshire is changing with a rise in the average annual temperature and increased precipitation, particularly in the winter. These climatic shifts along with more extreme weather events will have a dramatic impact on South Lanarkshire's environment as well as the population.

The main greenhouse gas (GHG) emitted in South Lanarkshire is Carbon dioxide (CO₂), deriving from transport, industry and domestic sources (such as heating, lighting and cooking). In order to mitigate against climate change both the cause and consequence must be addressed. Scotland has set an 80% reduction target for GHG emissions, which South Lanarkshire must contribute towards and also adapt to a changing climate.

Sustainable lifestyles are promoted in various ways, including through the Council's Sustainable Development Strategy and the work of the Learning About Sustainability in Schools Steering Group. South Lanarkshire schools are involved in a wide range of activities aimed at promoting and raising awareness of environmental issues and the importance of sustainability in our home, work, school and leisure lives.

9.1 Climate change commitments

It is recognised that global emissions of GHGs must be reduced in order to minimise the impacts of climate change. The Kyoto Protocol is the international agreement setting stringent targets for 2012 on the reduction of the main GHG emissions. In December 2012, the Doha Amendment to the Kyoto Protocol was adopted. It includes agreement for a second commitment period from 2013 to 2020 and a target to reduce GHG emissions by at least 18% below 1990 levels. All parties to the Protocol also agreed on a revised list of GHGs to be reported on.

'Climate change is the defining challenge of our age'
Ban Ki-Moon, CMP3, Bali, Indonesia

The UK Climate Change Programme sets out policy priorities for action within the UK to address both the causes and consequences of climate change and the Climate Change Act 2008 creates a new approach to tackling it. The 2008 Act sets ambitious reduction targets, enhances the ability to adapt to the impact of climate change and establishes clear accountability to devolved and local administrations which places emphasis on the Scottish Government and local authorities to undertake actions to reduce local GHG emissions. National policy measures include the Green Deal, the Carbon Reduction Commitment, Feed in Tariffs and the Renewable Heat Incentive.

The Scottish Government's Climate Change Programme, 'Changing Our Ways', introduced a programme of actions to tackle climate change, including ambitious reduction targets for emissions as set out in the Climate Change (Scotland) Act, 2009, including a target to reduce emissions by 42% by 2020. The 2009 Act sets out a long-term framework for delivering the Scottish Government's 80% reduction target for GHG emissions by 2050. This includes emissions from international aviation and shipping and therefore makes the target more ambitious than that set by the 2008 Act.

Wide ranging guidance on implementing the 2009 Act duties was published by the Scottish Government in February 2011. This requires public sector organisations to consider the relevance of each duty to their resources, functions and scope of influence over other agencies and the wider community and to publicly report on the action taken by them in relation to climate change.

All Scottish local authorities have formally intimated their support for action on climate change by signing Scotland's Climate Change Declaration. South Lanarkshire Council first signed the Declaration in 2007. In 2011, the Council signed it again alongside its community planning partners. The Council's Sustainable Development Strategy 2012 – 2017 is also its Climate Change Plan. Along with most of its community planning partners, the Council also has a Carbon Management Plan which sets targets for reducing greenhouse gas emissions for which it has direct responsibility, through energy use in buildings, transport, street lighting and waste management.

9.2 Greenhouse gas emissions

Greenhouse gases are linked to climate. Greenhouse gases in the atmosphere trap energy and keep the Earth's surface warmer than it would otherwise be. The increase in global temperature is linked to the rise in atmospheric CO₂ and other GHGs released by human activities, such as the

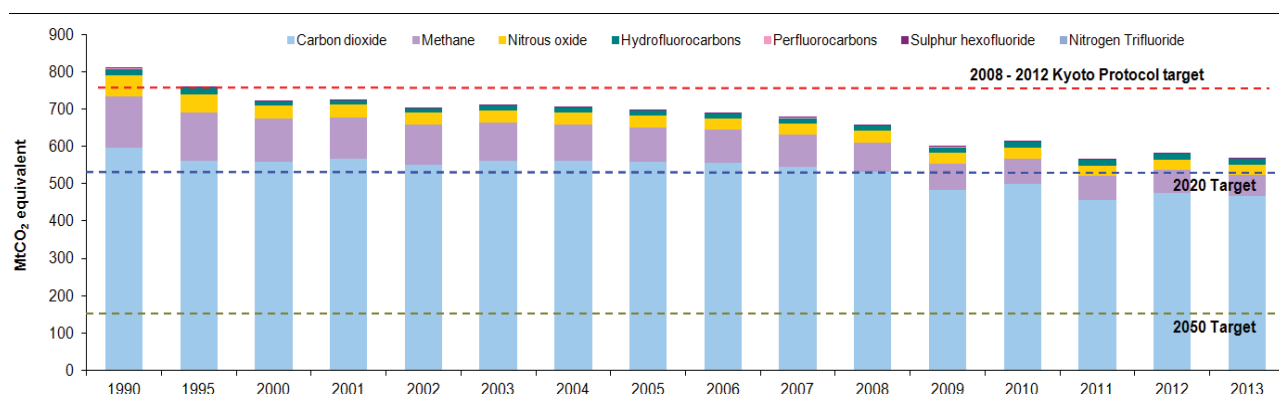
burning of fossil fuels. The United States, China, and the European Union together account for approximately 50% of the global GHG emissions, with the UK's contribution at approximately 2%. However, most of the GHGs remain in the atmosphere over a long period of time continually contributing to global warming. The cumulative effect of these emissions is considered important in measuring a country's contribution to climate change. As a consequence the UK's contribution to climate change increased to 6%.

UK emissions

In 2013, UK emissions of the seven greenhouse gases covered by the Kyoto Protocol were estimated to be **568.3 million tonnes⁶** carbon dioxide equivalent. This was 2.4% lower than the 2012 figure of 582.2 million tonnes. Carbon dioxide, (CO₂) is the main GHG, accounting for about 82% of total UK emissions, compared to 74% in 1990 (**Figure 9.1**). By sector, the energy supply sector accounted for 33% of emissions, transport (21%), business (16%), residential (14%) and 9% of emissions were from agriculture. The remaining 7% of emissions are attributable to the waste management, industrial process and the public sector. Between 2012 and 2013 the largest decreases in emissions were in the energy supply sector (-6.8%) due to a decrease in the use of coal and gas for electricity generation and the waste management sector (-14.1%) because of a reduction in emissions from landfill sites.

Final reporting on the UK's emissions under the first commitment period of the Kyoto Protocol will not take place until late 2015 at the earliest. However, it is anticipated that the UK target will be exceeded.

Figure 9.1: UK's greenhouse gas emissions as reported against the Kyoto Protocol



Source: Department of Energy and Climate Change, 2013

Scottish emissions

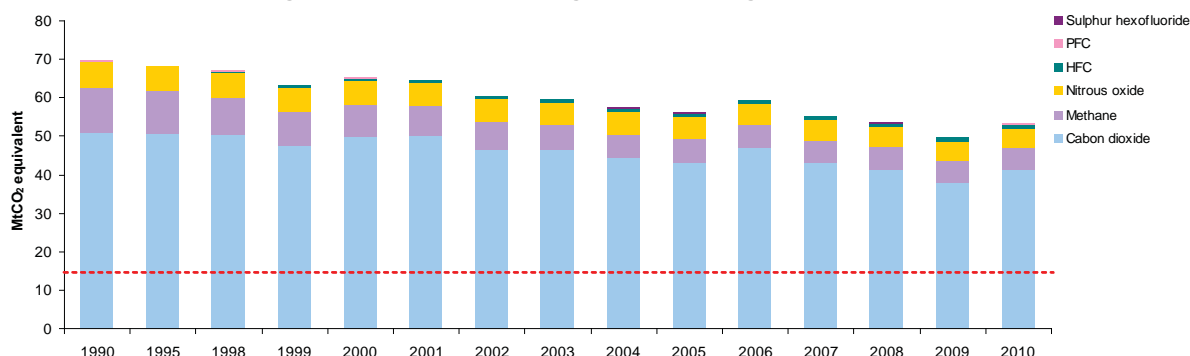
Transition to a low carbon economy is one of the Scottish Government's strategic priorities in their Economic Strategy. This, it believes, can support sustainable growth by helping households and businesses save money through energy and resource efficiency and by securing new jobs and investments.

Although GHG emissions between 2009 and 2010 increased, overall emissions in Scotland reduced between the 1990 base year and 2010 by **23.7%**. Scotland is over halfway to meeting the 42% reduction target by 2020 set in the Climate Change (Scotland) Act, 2009. This reduction is at a faster rate than any other member state in the EU. As with the UK, emissions in Scotland are dominated by CO₂ with significant contributions from Methane (CH₄) and Nitrous oxide (N₂O), whereas the contributions from the remainder are relatively small (**Figure 9.2**). In 2012, Scotland's share of total net UK GHG emissions had reduced to 7.9%, a considerable decline from its 8.9% share in 2010. Emissions in 2012 were **35,675 ktCo_{2e}** with **47.4%** of GHG emissions coming from

⁶ Statistical Release, 2013 UK Greenhouse Gas Emissions, Final Figures, Department of Energy and Climate Change, February 2015

the industrial and commercial sector, **37.0%** from domestic energy and **28.8%** from transport. Land use, land use change and forestry removed **15.3%** of carbon dioxide from the atmosphere.

Figure 9.2: Scotland’s greenhouse gas emissions



Source: AEA/Aether (2012): Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2010

On a global perspective, Scotland produces only about **0.15%** of the world's GHG emissions. The Kyoto target does not include emissions outwith a country’s boundary, therefore the UK and Scottish emissions do not account for any emissions associated with imported goods. Climate change must be holistically tackled globally, nationally and locally. Individual lifestyles as well as direct emissions must also be considered when reducing the overall contribution to climate change.

South Lanarkshire emissions

There are no local data sources that provide information for all the GHG emissions within South Lanarkshire. The local CO₂ emission estimates available are based on local energy consumption (including gas, electricity and road transport) and land use.

Estimates produced by the UK Department of Energy and Climate Change (DECC) indicate that emissions across South Lanarkshire decreased by 14.9% from 2,251 kt CO₂ in 2005 to **1,916 kt CO₂** in 2012. Over the same period, emission per capita fell by 16.4% from 7.3 tCO₂ to **6.1 tCO₂** (**Table 9.1**). However, there are considerable differences between council areas in terms of the presence of motorways, large industrial sites and their potential for carbon capture all of which have a major influence on their emissions data.

Table 9.1: Local CO₂ emission estimates based on local consumption and capture

	Local CO ₂ emission estimates, summary by sector (kt CO ₂)					Per capita emissions (t)	
	Industry and Commercial	Domestic	Road and Transport	Land Use*	Total	South Lanarkshire	Scotland
2005	751.6	867.3	705.1	-72.8	2251.2	7.3	8.2
2006	781.0	870.5	711.8	-70.5	2292.9	7.4	8.3
2007	741.3	854.2	733.3	-94.4	2234.5	7.2	8.1
2008	743.0	853.2	694.2	-99.0	2191.4	7.0	7.8
2009	598.0	773.0	679.0	-92.1	1957.8	6.3	7.0
2010	628.0	818.2	672.6	-98.7	2020.2	6.5	7.2
2011	565.5	731.9	661.4	-110.2	1848.7	5.9	6.5
2012	577.5	799.7	654.7	-115.8	1916.1	6.1	6.7
% reduction (2005- 2012)	-23.2%	-7.8%	-7.2%	37.1%	-14.9%	-16.4%	-18.3%

*overall carbon removal from soils, forestation and land use

Source: DECC

Domestic emissions are directly related to household energy consumption which accounts for 42% of the local CO₂ emission estimates (**799.7 kt CO₂**). Domestic energy efficiency campaigns can be used to reduce domestic emissions. Within the industrial sector energy efficiency measures are in place through climate change agreements, emissions trading or energy efficiency measures within regulatory requirements. This sector has seen the greatest reduction in estimated emissions

between 2005 and 2012 of **23.2%**. The levels of CO₂ emissions from the transport sector have not fallen significantly with reduction in emissions of only 7.2% from 2005 to 2012.

South Lanarkshire Council emissions

The subset of greenhouse gas emissions estimates in **Table 9.2** are those considered by DECC to fall within the scope of influence of local authorities, including South Lanarkshire Council. This subset excludes:

- Motorways.
- Sources covered by the EU emissions trading scheme.
- Diesel railways.
- Land use, land use change and forestry.

Table 9.2: Local CO₂ emission estimates based on local consumption

	Industry and commercial		Domestic		Roads and transport		Total	
	Emissions (kt CO ₂)	Per capita (t)	Emissions (kt CO ₂)	Per capita (t)	Emissions (kt CO ₂)	Per capita (t)	Emissions (kt CO ₂)	Per capita (t)
2005	749.8	2.4	867.3	2.8	380.0	1.2	1,997.1	6.5
2006	779.6	2.5	870.5	2.8	390.4	1.3	2,040.5	6.6
2007	740.5	2.4	854.2	2.8	401.3	1.3	1,996.0	6.4
2008	742.3	2.4	853.2	2.7	376.7	1.2	1,972.2	6.3
2009	597.2	1.9	773.0	2.5	370.9	1.2	1,741.1	5.6
2010	627.4	2.0	818.2	2.6	367.6	1.2	1,813.3	5.8
2011	564.6	1.8	731.9	2.3	359.1	1.1	1,655.6	5.3
2012	577.5	1.8	799.7	2.5	353.4	1.1	1,730.6	5.5
% decrease 2005-2012	-23.0%	-25%	-7.8%	-10.7%	-7.0%	-8.3%	-13.4%	-15.4%

Source: DECC

Emissions within this subset decreased by **13.3%** between 2005 and 2012 compared to a reduction of **10.4%** for Scotland over the same period. On a per capita basis emissions have also significantly decreased from **6.5 t CO₂** in 2005 to **5.5 t CO₂** in 2012, notably lower than the Scottish average of **6.8 t CO₂**.

The transport sector has not demonstrated the same level of reductions as others, with emissions only reducing by **8.3%** since 2005. The biggest reduction has taken place within the industry and commercial sector (-23.0%).

In 2008, the Council produced its first Carbon Management Plan on how it will assess and reduce emissions associated with the delivery of services. Overall emissions for 2013 – 2014 were **136,105 tCO₂**, 12.8% lower than the Council's baseline year of 2005 – 2006, (**Table 9.3**).

Table 9.3: Carbon emissions from South Lanarkshire Council activities and buildings (tCO_{2e})

Carbon Source	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Buildings (electricity, gas, oil)	69,427	66,480	67,573	67,691	69,512	67,914	64,901	70.857	64.902
Waste (municipal)	61,320	60,015	57,824	54,876	50,711	48,928	46,741	45.334	46.724
Fleet	10,418	10,290	10,210	9,710	10,039	10,032	9,272	8.855	9.287
Street lighting	13,005	13,155	13,957	13,564	12,932	12,962	12,986	13.020	13.841
Employee travel	1,795	1,941	1,772	1,783	1,638	1,428	1,356	1.375	1.261
Total	155,965	151,882	151,337	147,623	144,832	141,265	134,256	139.441	136.015
Variation to baseline		-2.6%	-3.0%	-5.3%	-7.1%	-9.4%	13.2%	-10.6%	-12.8%
Employee numbers	16,521	16,254	15,552	15,481	15,471	14,693	14,800	15.188	15.188
CO ₂ tonnes/ employee	9.4	9.3	9.7	9.5	9.4	9.6	9.1	9.2	9.0

9.3 Energy

Scottish production

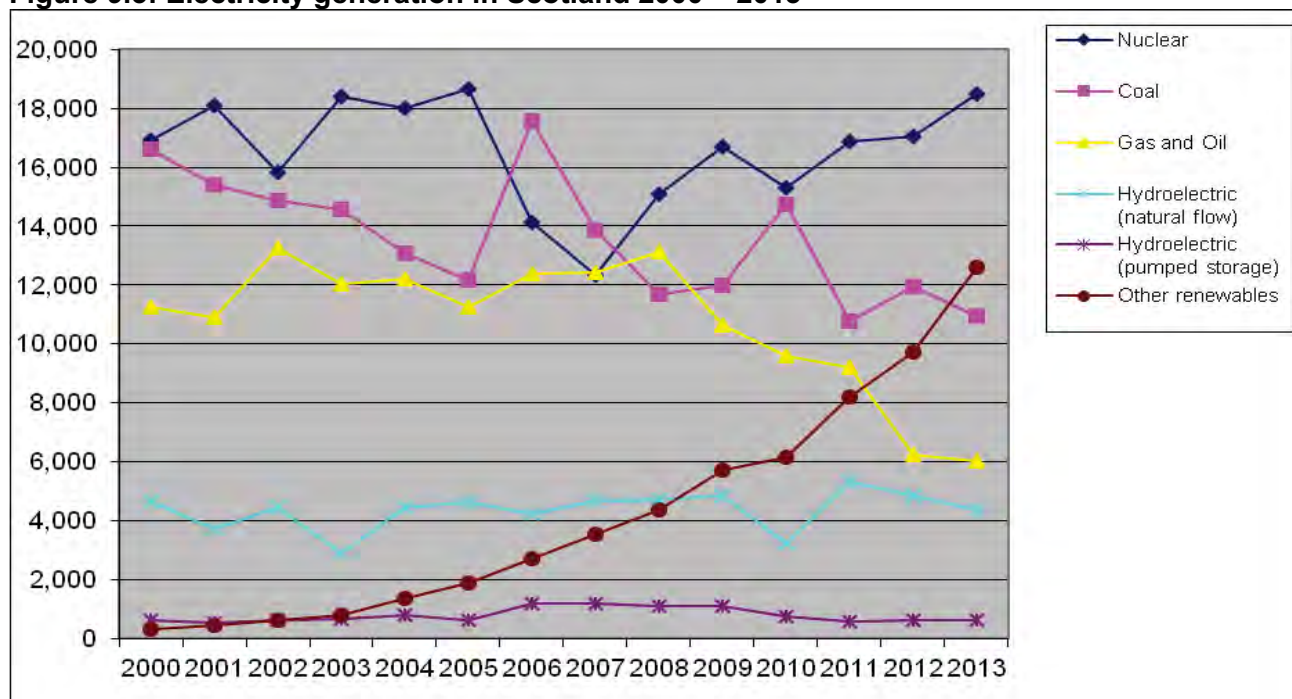
Electricity generation from the combustion of fossil fuels is a major contributor to CO₂ emissions in Scotland. In order to deliver its 80% reduction target for CO₂ emissions, Scotland needs to continue to increase the generation of electricity from carbon-free or renewable sources. The amount of electricity generated from individual sources varies from year to year depending on several factors including the price of gas and oil and changes in demand. However, Scotland has consistently been an exporter of electricity, generating more than what is consumed. In 2013, Scotland generated **53,071 GWh** of electricity (**Table 9.4**), an increase of 3.9% on 2011.

Table 9.4: Electricity generation and sources in Scotland (GWh)

Electricity generation source	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013
Nuclear	16,918	18,681	14,141	12,344	15,079	16,681	15,293	16,892	17,050	18,498
Coal	16,624	12,186	17,547	13,877	11,662	11,965	14,715	10,779	11,950	10,953
Gas and oil	11,274	11,273	13,755	12,435	13,126	10,665	9,601	9,208	6,242	6,037
Hydroelectric (natural flow)	4,665	4,588	4,225	4,697	4,709	4,864	3,313	5,332	4,838	4,366
Hydroelectric (pump storage)	613	643	1,184	1,198	1,091	1,087	779	604	610	615
Other renewables	306	1,876	2,737	3,523	4,452	5,909	6,292	8,408	9,746	12,601
Total generated	50,401	49,246	53,609	48,074	49,843	51,170	49,993	51,223	50,436	53,071

Source: DECC – Energy Trends: Scottish Environment Statistics Online. Note: Figures do not sum exactly due to rounding.

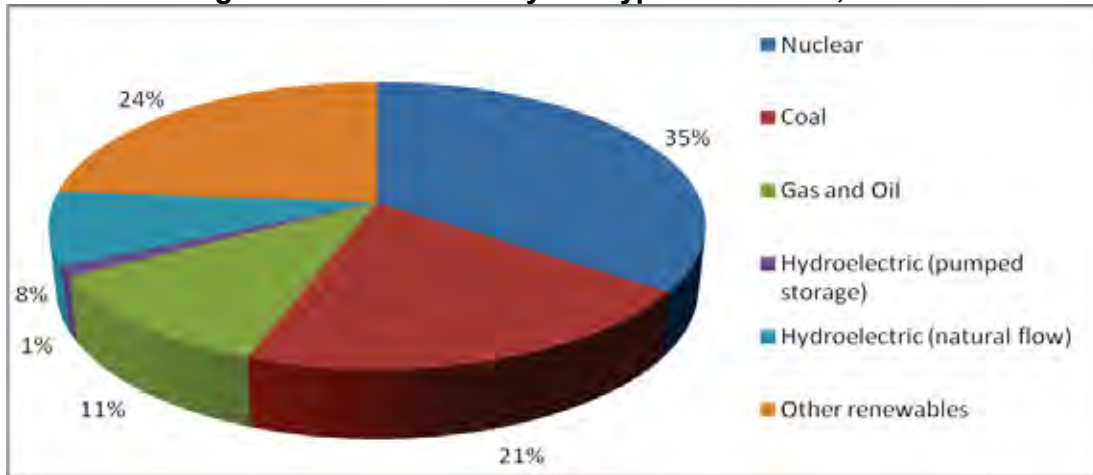
Figure 9.3: Electricity generation in Scotland 2000 – 2013



In 2013, for the first time, the main sources of electricity generated in Scotland were from renewable, including wind, wave and solar energy (**17,582 GWh**). The combustion of fossil fuels accounted for **32.0%**, with coal, gas and oil providing **16,690 GWh (Figure 9.3)**.

Scotland generated **33.1%** of electricity from renewable sources (including hydroelectric pumped storage) in 2013 (**Figure 9.4**). This is a significant increase from 2009 (25%) and 2011 (28%).

Figure 9.4: Generation by fuel type in Scotland, 2013



Source: DECC

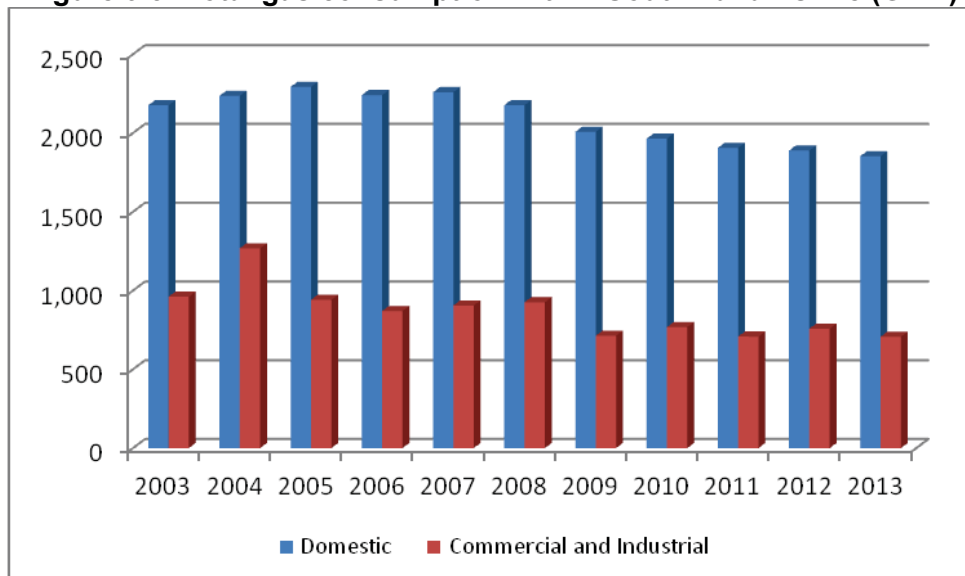
Local consumption

Local CO₂ emission estimates for South Lanarkshire demonstrate that energy use through the consumption of gas, electricity or transport fuel are the main emitting sources for GHG emissions. Therefore, it is essential to consider these sources within the context of South Lanarkshire’s contribution to climate change. One element of reducing GHG emissions is through the reduction of energy use, through efficiency and conservation measures.

Gas

There has been a steady reduction in gas consumption in South Lanarkshire within both domestic and the industrial and commercial sectors in recent years (**Figure 9.5**). Domestic gas consumption in South Lanarkshire is far greater than commercial and industrial consumption rates. In the domestic sector there has been a reduction of **14.8%** in gas consumption between 2003 and 2013. In the industrial and commercial sector, the decrease has been greater at **26.4%**. In 2013, South Lanarkshire’s domestic gas consumption rate fell again to **1,853 GWh**. However, the domestic consumers are the 5th largest users in Scotland, illustrating a high dependency for gas in heating homes across the area.

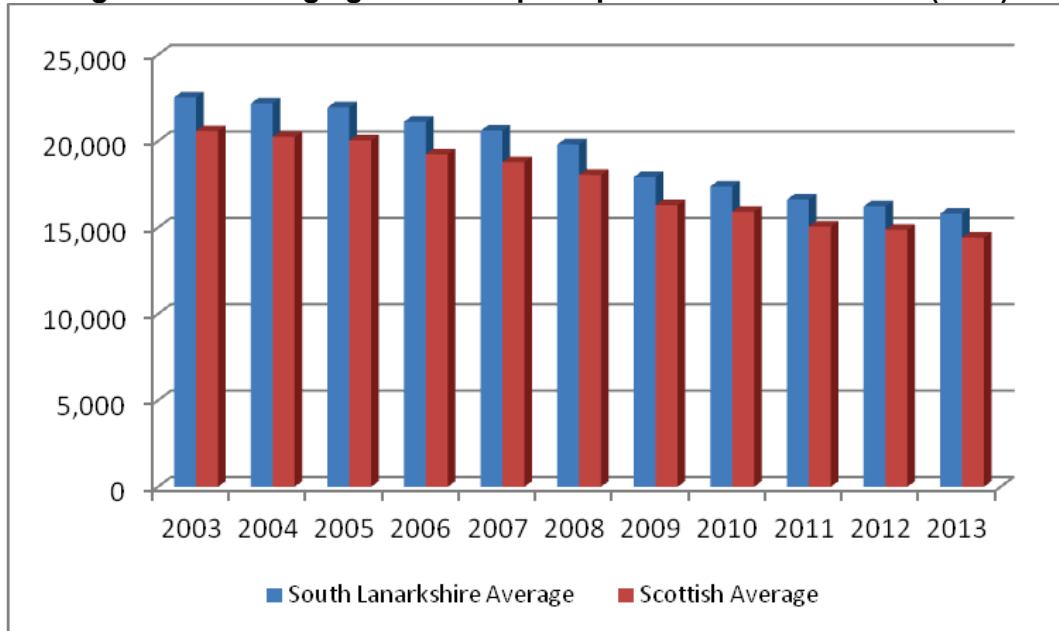
Figure 9.5: Total gas consumption within South Lanarkshire (GWh)



Source: DECC

Individual gas consumption rates continue to steadily decrease at a similar rate in South Lanarkshire and in Scotland (**Figure 9.6**). Indeed, between, 2003 and 2013, there has been a reduction of **30%** in gas consumption both locally and nationally to current consumption levels of **15,808 kWh** and **14,416 kWh**, respectively. Gas consumption data do not include gas supplied in bulk or bottled form (LPG).

Figure 9.6: Average gas consumption per metered household (kWh)



Source: DECC

Electricity

Electricity consumption in South Lanarkshire has steadily reduced in both domestic and the industrial and commercial sectors since 2003 as set out in **Figure 9.7**. The greatest reduction in consumption has been within the industrial and commercial sector meaning that the gap between this sector and the domestic sector has almost closed. In the domestic sector there has been a decrease of 14.4% in electricity consumption between 2003 and 2013. In the industrial and commercial sector the decrease has been greater at 22.2%.

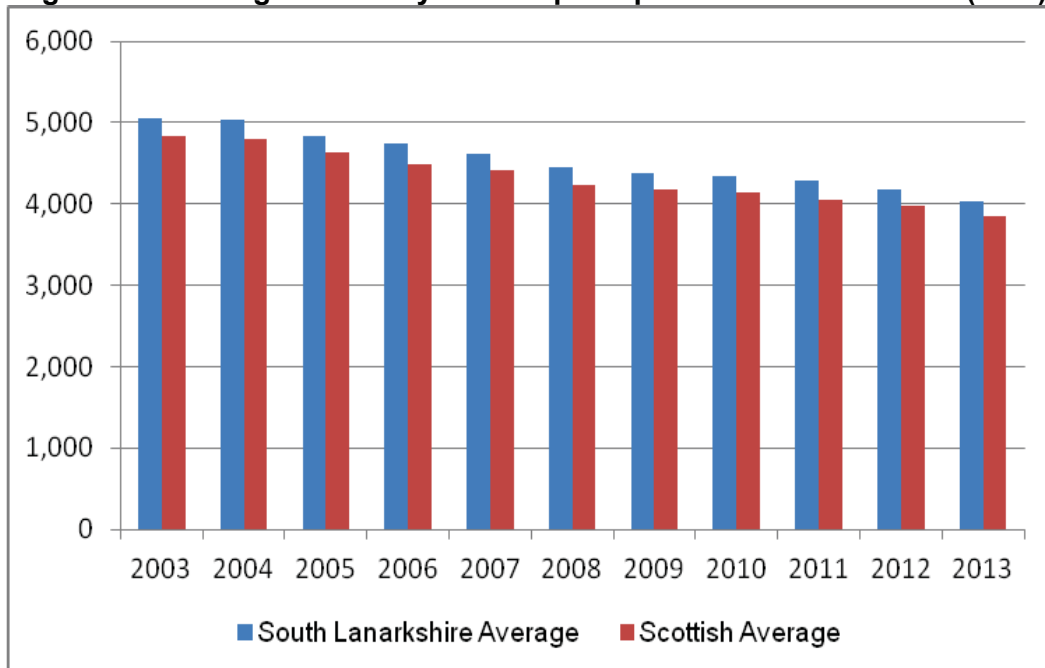
Figure 9.7: Total electricity consumption within South Lanarkshire (Gwh)



Source: DECC

In 2013, the South Lanarkshire average domestic consumption rate per metered household (**4,034 kWh**) was higher than the Scottish average of **3,852 kWh (Figure 9.8)**. The overall trend for electricity consumption continues to be a reduction in usage. South Lanarkshire has the 14th highest consumption rates of all Scottish local authorities.

Figure 9.8: Average electricity consumption per metered household (kWh)

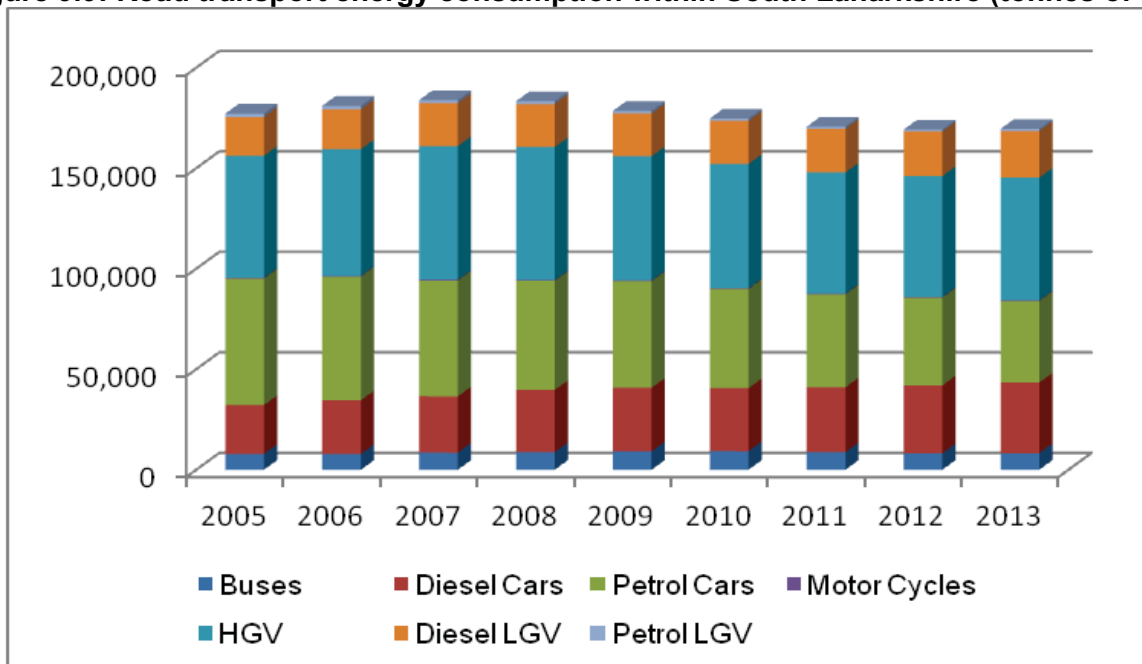


Source: DECC

Road and transport fuel

Vehicle emissions are a major source of atmospheric pollutants including nitrogen oxides (NO_x), carbon monoxide (CO) and CO₂. The local CO₂ emission estimates concluded that emissions from transport contribute about a third of the total CO₂ emitted in South Lanarkshire. The total road and transport fuel consumption in South Lanarkshire fell by **4.3%** from **177,193 t** in 2005 to **169,548 t** in 2013 (**Figures 9.9 and 9.10**).

Figure 9.9: Road transport energy consumption within South Lanarkshire (tonnes of fuel)



Source: DECC

Diesel fuel consumption in private cars increased significantly from **24,324 t** in 2005 to **35,132 t** in 2013 (**+44%**). At the same time, petrol fuel consumption from private cars reduced significantly from **62,951 t** in 2005 to **40,513 t** in 2013 (**-36%**). Overall, however, private car fuel consumption fell by **13%** between 2005 and 2013. Fuel consumption by buses and freight both increased by **5%** and **4%**, respectively, during the same period.

Figure 9.10: Total road transport energy consumption in South Lanarkshire (tonnes of fuel)



Source: DECC

9.4 Renewable capacity

Renewable energy can help tackle the causes of climate change as well as support economic growth and so offers a sustainable approach to energy production. Increasing renewable energy generation as a means of reducing carbon emissions is pivotal in tackling climate change and an important component of the Scottish Government’s commitment in reducing CO₂ emissions. The Scottish Government has set clear targets for renewable electricity, with 100% of Scottish electricity consumption supplied from renewable sources by 2020 and an interim target of 50% by 2015. In 2011, electricity generated in Scotland by renewable sources equated to **28%** and at 2014, the Scottish Government reported that provisionally, renewable sources generated **49.6%** of gross electricity consumed, meaning that the 2015 50% renewable energy target has almost been met a year ahead of schedule.

The shift towards a diverse range of renewable technologies, including wind, biomass, tidal power, solar and hydro can secure significant investment in Scotland, provide export opportunities and create jobs in the manufacture and installation of generators and the associated infrastructure and supply chain. Households and community renewable projects can also engage people in sustainable development, empowering them to help meet their energy needs in a sustainable way.

The national strategy ‘Our Routemap for Renewable Energy in Scotland’ was developed in partnership with the Scottish Government and the renewables industry. Updated in 2013, it sets out a range of targets, including meeting 100% of Scotland’s electricity demand from renewables by 2020.

Scotland’s capacity

Renewable electricity generation in Scotland made up approximately 29% of total UK renewable generation in 2014 (previously 32% in 2013). The amount of electricity generated in Scotland by renewable sources continues to increase. Indeed, since 2000, the amount of electricity generated annually by renewables has more than trebled. In 2011, the amount of electricity generated from wind, wave and tidal power (mostly wind) was nearly 80 times what it was in 2000.

Other key renewable electricity generation figures for Scotland at 2014⁷ are:

- Renewable electricity generation in Scotland was 18,959 Gwh in 2014 – an increase of 11.7% on 2013 which was a previous record year for renewables.
- Wind generation was at a record high level (11.592 Gwh), an increase of 4.0% on 2013 (previous record year for wind) and is five times the level of wind generation in 2006.
- Hydro generation in 2014 was at a record high level (5,503 Gwh), an increase of 26.0% on 2013.
- At the end of 2014, there was 7,236 MW of installed renewable electricity capacity in Scotland, an increase of 10% from 2013.

At December 2014, Scotland had 7.2 GW of installed renewable electricity generation capacity, with an additional 8.9 GW of capacity either under construction or consented, the majority of which is expected from wind generation. Taking into account pipeline projects, the total renewable capacity either in operation, or in planning, totals 19.8 GW.

South Lanarkshire area's capacity

Government legislation, national GHG reduction targets and public concern about climate change has created the need to move towards more sustainable forms of energy supply. Despite the lack of large-scale hydro capacity, South Lanarkshire can still offer potential for renewable technology, with the greatest potential offered by wind energy and small-scale hydro. There is also growing interest in solar farms. There is 1 operational solar farm located at the Loch Coulter Water Treatment Works which consists of 30 photovoltaic panels. It is owned and managed by Scottish Water. There are, however, limitations that govern the amount of energy that can be generated from these sources, including water capacity, wind speed, visibility, landscape impacts and habitat constraints.

Onshore wind continues to be the most significant generator of renewable energy in South Lanarkshire. The most suitable areas for wind energy generation are identified in the Spatial Framework prepared as part of statutory Supplementary Guidance on Renewable Energy which supports the South Lanarkshire Local Development Plan.

There are 3 hydro-electric stations within South Lanarkshire, comprising of the Lanark Hydro-electric Scheme (Bonnington and Stonebyres Power Stations) and the smaller Blantyre Hydro Station. The total operating capacity from hydro-electric in South Lanarkshire is currently **17.975 MW (Table 9.5)**, with smaller micro-hydro schemes offering potential source.

Table 9.5: Hydro-electric generating capacity on the River Clyde, South Lanarkshire

Station Name	Location	Operator	Potential Output MW
Bonnington Power Station	Lanark – drawing water from above Bonnington Linn waterfall	Scottish Power	11.000
Stonebyres Power Station	Kirkfieldbank – drawing water from above Stonebyres Linn waterfall	Scottish Power	6.400
Blantyre Hydro Station	Blantyre – drawing water from a weir across the River Clyde.	NPower Renewables	0.575
Total Operating Capacity			17.975

Source: www.scottishpower.co.uk/www.natwindpower.co.uk

South Lanarkshire has proved to be an attractive location for wind energy developments. At March 2015, there were 15 operational or under construction wind farms and a further 5 schemes with planning consent, which, in total, could deliver an output of almost **1,300MW (Table 9.6)**. A significant increase of **34.6%** from output in 2013. In addition, there are a number of undetermined applications with the potential output of over 500MW.

⁷ Energy Statistics for Scotland, The Scottish Government, March 2015

Table 9.6: Operating and consented wind farms (4 or more turbines) in South Lanarkshire

Name	Location	Operator	No. of Turbines	Potential Output MW
Operating				
Hagshaw Hill	West of Douglas	Scottish Power	26	16
Hagshaw Extension	West of Douglas	Scottish Power	20	26
Blacklaw	West of Forth	Scottish Power	48	111
Whitelee Forest	West of Strathaven	Scottish Power/ CRE	42	97
Stallashaw Moss (Muirhall)	Auchengray, Tarbrax	Lomond Energy	8	24
Clyde Windfarm	South East of Abington	Scottish Southern Energy (SSE)	152	350
Nutberry Hill	West of Coalburn	West Coast Energy	6	18
Bankend Rigg	South West of Strathaven	I and H Brown	11	14
Calder Water	West of Strathaven	Community Windpower	13	39
West Browncastle	West of Strathaven	Falck Renewables	12	36
Total operating capacity			338	731
Under construction				
Dungavel	South West of Strathaven	Eon Renewables	13	30
Andershaw	South of Douglas	Catmount Energy	11	42
Galawhistle	West of Douglas	Infinis	20	55
Auchorobert	West of Lesmahagow	Falck Renewables	12	48
Crookedstane	Adjacent to Clyde Wind Farm near Watermeetings	2020 Renewables	4	11.5
Potential operating capacity			60	186.5
Planning consented (subject to Section 75 Agreement)				
Penbreck	South of Glespin	PNE Wind UK Ltd	6	18
Kype Muir	South of Strathaven	Banks Renewables	26	88
Clyde Extension	North East of Clyde Wind Farm	SSE Renewables	51	162
Middle Muir	North of Crawfordjohn	Banks Renewables	15	68
Dalquhandy	South West of Coalburn	Hargreaves	15	45
Potential operating capacity			113	381
Total potential output in South Lanarkshire area				1,298.5

Source: South Lanarkshire Council

The operating and consented schemes can potentially meet the electricity needs of over 450,000 homes which is about three times the number of households in South Lanarkshire. This estimate excludes commercial and industrial users. There are a number of other proposals at the application or scoping stage, indicating the continued interest in South Lanarkshire as a location for onshore wind developments.

The existing and emerging pattern of large scale wind farm developments reflects the prevalence of upland locations. There is also an increasing trend for single and small scale turbine developments in the farmland areas of South Lanarkshire. These can range from under 10 metres to over 100 metres in height. At March 2015, there were **259** operating/consented single/small scale turbines in South Lanarkshire.

The landfill sites in South Lanarkshire currently generate approximately **10 MW** of electricity through the capture of landfill gas. As part of the Schools Modernisation Programme, 47 schools had biomass boilers fitted between 2009 and 2015. A sheltered housing complex also had a biomass boiler installed. In total, the biomass boilers installed by the Council have an operating capacity of **6.7 MW**, a significant increase from 2012 when the overall operating capacity for

biomass boilers fitted by the Council was 2.687 MW. At March 2015, the current overall renewable generating capacity in South Lanarkshire is in excess of **765.67 MW**, a significant increase from 2013 (**12.93%**) when the overall capacity was 666.62 MW and significantly greater than in 2011 (**80.9%**) when the overall capacity was 146.575 MW. This was largely attributable due to the increase of operational wind farms in the area, particularly Clyde Windfarm but also, to a much lesser degree, the emergence of biofuel sites, operated by the Council.

9.5 Home energy efficiency

Improving housing quality has been a long standing focus of successive governments' housing policy, with nationally determined priorities providing an important framework for local policy making. The national headline priorities include:

- The Housing (Scotland) Act, 2006 introduced new duties and powers to tackle disrepair in private sector housing
- Social rented sector housing to achieve the Scottish Housing Quality Standard (SHQS) by 2015.
- 'Scottish Fuel Poverty Statement - Tackling Fuel Poverty' with a target of eradicating it as far as reasonably practicable by 2016.
- Climate Change (Scotland) Act 2009, created the statutory framework for greenhouse gas emissions reductions in Scotland by setting an interim 42% reduction target for 2020. The Low Carbon Scotland 'behaviours framework' (2013) sets out measures to drive and support a move to low carbon living in the lead up to the first climate change target in 2020.

With all these priorities, a common feature is for all homes to become more environmentally sustainable. In 2013, the Scottish Government published a new Sustainable Housing Strategy, which brings together the all tenure aspects of housing quality, including the new Energy Efficiency Standard for Social Housing (EESH) and sets out key milestones for achieving improvements in energy efficiency and climate change targets.

New building standards and regulations are driving significant improvements in the development of new housing to ensure a much lower impact on climate change, with energy efficient, low carbon homes that are sustainable. The Council has adopted a higher sustainability 'silver standard' for all new Council homes, of which it has committed to building an additional 500 from 2015 to 2020.

Improving the energy efficiency of existing homes is a significant, direct contribution we can make towards tackling climate change, as better heat retention can allow households to use less energy and therefore reduce carbon emissions. This is a key component for meeting the Scottish Housing Quality Standard (SHQS). Since 2004/2005, as part of a long-term Standard Delivery Plan, the Council has invested around £400million to ensure the SHQS is achieved by the 2015 target.

An example of the substantial environmental sustainability gains from this major investment is recent work between 2013 and 2015 when around 7,000 council homes benefitted from new heating systems, including renewable energy technologies and other improvements. These are projected to reduce carbon emissions by around 1.4 tonnes per household per year.

For existing private sector homes, the Council seeks continually to attract new funding and resources and has gained from significant investment under national programmes such as the Universal Home Insulation Schemes (2010 - 2013). Recently, the Council has secured substantial funding under the Scottish Government's 'Home Energy Efficiency Programme for Scotland: Area Based Schemes (HEEPS: ABS)' to improve the energy efficiency of hard-to-treat homes, for example, solid wall (non-cavity) construction. Under this programme, the Council attracts match funding from energy companies seeking to achieve the best possible returns in terms of carbon reductions to meet their responsibilities under ECO (Energy Company Obligation). In total, around £10million is secured to improve almost 1,000 homes, with around 30% attributed to treat cavity wall insulations and 70% for external wall insulation measures.

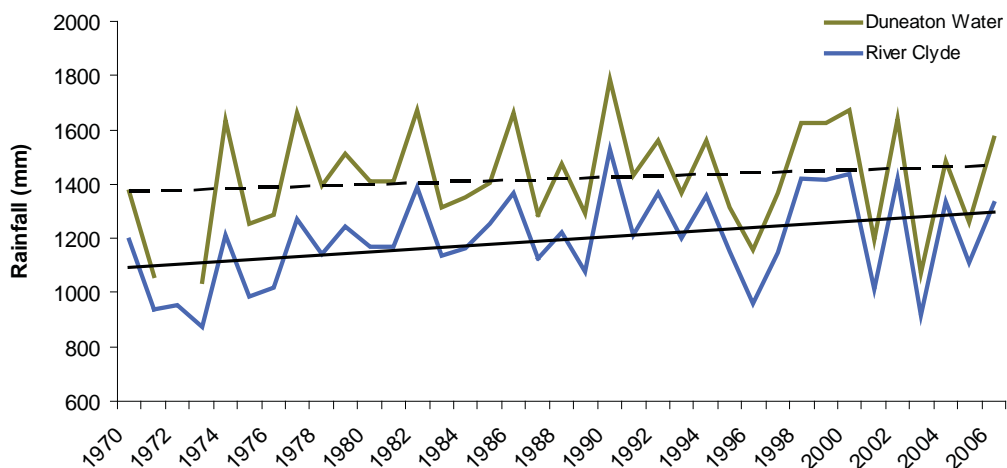
9.6 Potential impacts of climate change

Climate change is happening now. Increasing global temperatures are resulting in changes to our climate and we are experiencing more extreme weather patterns, particularly increased rainfall. The Scottish Government has focused on reducing greenhouse gas emissions and adaptation to tackle climate change and combat its effects.

Current climate changes across Lanarkshire

The river gauging stations at Duneaton Water and the River Clyde both show an increase in rainfall between 1970 and 2006 (Figure 9.11). Duneaton Water, in the Southern Uplands, experienced the highest level of annual rainfall but the lowest rate of increase (6%), whereas the River Clyde at Bothwell experienced an increase of 15% in annual rainfall.

Figure 9.11: Trends in yearly mean rainfall at two river gauging stations monitoring the River Clyde and the contributory river Duneaton Water



(Created using archive CEH data www.nwl.ac.uk)

The Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) project (CC03: A handbook of climate trends across Scotland) reported an increase in the number of heavy rainfall days, particularly during winter in the north and west of Scotland. This increase is evident in the data presented on the Council’s flood response work where there is a reported increase in the number of responses relating to heavy rain incidents.

Across the Council the impacts of severe weather on the functionality and responsiveness of individual services is recognised. These range from flood defence management to local planning. The Council’s Corporate Contingency Plan sets out how it will work with partners to deal with emergencies, including the impacts of severe weather events.

The UKCIP02 climate change scenarios indicate that the average temperature in Scotland will increase by 1.2°C to 2.6°C over the next century, with greater increase experienced through a rise in winter temperature. Annual precipitation is predicted to increase by 5% to 20% with autumn and winter experiencing the largest increase, with downpour intensity likely to increase, resulting in a greater risk of flooding. These scenarios illustrate the potential impact climate change could have on future Council services.

UKCP09 are new projections of UK climate change designed to help governments to effectively plan adaptation approaches. The use of climate prediction models such as UKCP09 could assist the Council in managing future resource requirements in line with potential service demands.

9.7 Environmental awareness

Sustainable development

The **Brundtland Commission Report, Our Common Future** defines sustainable development as, 'Development which meets the needs of the present without compromising the ability of future generations to meet their needs'.

It is recognised we are living well outwith our global means with current lifestyles placing an increasing burden on the planet. This is detrimental to the environment both globally and locally. To live within our means we must drive towards a more sustainable balance in our development. Driving towards sustainable development requires social, economic and environmental aspects to be balanced, with short term gains not pursued over long term benefits. A series of international, European and national policies and legislative instruments have required the Scottish planning system and local authorities to take account of sustainable development in their activities and policy making.

The Council's **Sustainable Development Strategy** states, 'We recognise that an organisation our size has a major impact on the environment and has a responsibility to use resources wisely. The way we source supplies and services outside the Council can help achieve savings, promote local business and protect the environment locally and globally. Carefully managing our consumption of resources, such as energy, transport fuels, and supplies, also makes sound business sense. By working with our partners we can strengthen our approach...The Council can contribute to action on climate change through its policies, powers and partnership activities'.

Sustainable development is reflected in South Lanarkshire Council's plans and policies and is considered in its service delivery activities. The Council adopted its first Sustainable Development Strategy in 2007. A new strategy was approved in 2013.

Learning About Sustainability in Schools

The Learning About Sustainability in Schools (LASS) Group was established in December 2014. Its remit is to promote environmental awareness and sustainability in schools in South Lanarkshire. The LASS Group will be exploring opportunities to link the South Lanarkshire State of the Environment Report to the experiences and outcomes within the Curriculum for Excellence across a wide spectrum of the curriculum, including maths, science and social sciences.

LASS are also developing the State of the Environment Report to make it accessible to teachers, pupils and parents as an educational resource within the Glow intranet platform, combined with a 'who's who's' directory of Council and partner staff who are able to assist schools with environmental lessons and projects.

In 2015, members of the LASS Group visited all seventeen secondary schools and met with pupils and staff to discuss the wide range of environmental activities currently undertaken by them. These include:

- Participation in Eco-schools programme, John Muir Award and Go4Set.
- School orchards, using produce within lessons and to encourage local wildlife.
- Have school greenhouses and cultivation boxes.
- Conduct annual bird watch, air quality investigations and other surveys.
- Have built and survey bird and bat boxes within school grounds.
- Carry out energy audits and promote energy efficiency in the school.
- Actively participate in Earth Hour events.
- Promote the reduction in waste generation and the benefits of recycling within the school environment.

All primary schools in South Lanarkshire are registered with Eco-schools and take part in a wide array of environmental activities through their eco committees and teams. The Council hosts an annual Globally Aware Schools (GAS) Day in which pupils from primaries 4 to 7 participate, firstly through a presentation, for example, of a play, song, or poem followed by the opportunity to pitch to the 'Dragons' Den' panel about an invention or proposal which will help tackle climate change or address another environmental issue.

Global warming isn't hard to explain
It leaves Mother Nature in excruciating pain
This hurts our planet in every single way
The changes could leave us all in sorrow and dismay

We need to stop it now so the temperature doesn't rise
People, plants and animals will be in demise
Changes in the temperature due to depleting ozone layer
We really don't it so show that you care

Mother Nature can't do it all herself, so let's give her a rest
We all need to try and do what's best
Our planet Earth is precious and can't be replaced
We need to act now or our home will be erased.

Poem by John Ware, Mairi McClure, Aaron Grew and Amy Campbell, pupils at West Coats Primary School, Cambuslang. Participants at the South Lanarkshire Globally Aware Schools (GAS) Day event, held 11 March 2015

The Eco-schools programme

Young people across South Lanarkshire have an interest in the environment in which they live and care about the impacts they have upon it. Although they may want to protect our environment, knowing what to do is not always easy. The Eco-Schools programme is therefore an excellent way to motivate young people within their school environment and offer them opportunities to help protect their environment.



The Eco-Schools programme is an international initiative designed to encourage whole-school community action on learning for sustainability. It is a recognised award scheme that accredits schools who make a commitment to continuously improve their environmental performance. It is also a learning resource that raises awareness of environmental and sustainable development issues throughout activities linked to curricular areas.

The aim of the Eco-Schools programme is to make environmental awareness and action an intrinsic part of the life and ethos of the school for both pupils and for staff and to engage the wider community.

The Eco-Schools programme in Scotland is managed by Keep Scotland Beautiful. It offers a holistic approach that aims to involve the whole school, pupils, teachers and other staff, together with members of the local community, parents, the local authority, the media and local businesses. The programme encourages teamwork, creating a shared understanding of what it takes to run a school in a way that respects and enhances the environment. The aim is that this ethos in school is then expanded by the children to their home life (www.ecoschoolsscotland.org).

The Eco-Schools Scotland programme has seven elements, incorporating ten environmental topics. Once a school has registered on the programme and implemented the seven elements, it can then apply for an Eco-Schools award. There are three levels of awards; the first two levels are the Bronze and Silver Awards. The top level of award is the Green Flag award which must be renewed every two years.

‘The Eco-Schools programme engages children and young people in key issues including the environment, sustainability, global citizenship and the value of a low carbon future. The growing numbers of Eco-Schools in Scotland is inspiring and I would like to congratulate everyone involved and encourage you all to keep doing all you can to reduce the carbon footprint of your school, home and community.’ **(Eco-Schools Scotland)**

In Scotland over 3,600 schools are registered with the programme, including over 98% of Scotland’s local authority schools, as well as independent and ‘early years’ establishments. Over 40% of Scotland’s local authority schools and many more independent and ‘early years’ providers have attained the Green Flag award. **Table 9.7** sets out the current level of participation in the Eco-schools programme in South Lanarkshire.

Table 9.7: Participation in the Eco-Schools programme in South Lanarkshire (2014/2015)

Organisation	Registered	Eco-School status				Green Flag status	
		Bronze		Silver		No.	%
		No.	%	No.	%		
Primary	145	121	83.5	101	69.7	65	44.8
Secondary	17	13	74.5	10	58.8	2	11.8
Additional Needs	8	6	75.0	6	75.0	2	25.0
Nurseries*	53	24	45.3	21	39.6	7	13.2

*Includes: Independent school nurseries, Early Year partnership providers and Council nurseries

Source: South Lanarkshire Council

The greatest progress in the Eco-Schools programme in South Lanarkshire has been made by primary schools, **44.8%** of whom have achieved Green Flag status, **69.7%** Silver and **83.5%** Bronze. Two additional needs schools, 2 secondary schools and 7 nurseries had also achieved Green Flag status in 2014/2015. More than half of secondary schools (58.8%) and 75% of additional needs schools have achieved silver. Twenty one nurseries (39.6%) also achieved silver status.

10 Transport

SEA objectives that relate to transport

- Actively encourage and increase the use of public and alternative transport modes.
- Reduce the potential for congestion and emissions associated with transport.
- Maintain and enhance the quality of the transport network, whilst avoiding exacerbating associated pollutants.

South Lanarkshire has a diverse range of settlements located within the urban areas to the north or spread through the rural areas in the south and west. The distribution and population of these settlements determine the level and type of transport used which has a distinctive influence on the built and natural environment, human health and the impacts associated with vehicle emissions (including local air quality and climate change). The demand for transport has continually increased with individual vehicle ownership growing. This has resulted in the transport sector being one of the key concerns for atmospheric emissions.

A summary of the indicators used in assessing the state of South Lanarkshire is presented below, highlighting the current status of each indicator and the directional trend.

G Good	F Fair
P Poor	Limited data

↑	Improving
↔	No change
↓	Deteriorating

Note: The most recent data available was used in assessing the environmental indicators

Indicator	Current status	Trend direction	Explanation
Road network condition	F	↑	Despite recent severe winters, the condition of the road network continues to improve due to additional funding from the Council's Roads Investment Plan.
Traffic growth	G	↑	Most recently available SLC data compares favourably with Government traffic growth forecasts.
Congestion	G	↑	There has been a decrease in residents experiencing congestion compared to baseline figures.
Road safety	G	↓	Although SLC is currently on track to meet the Government's 2020 casualty reduction targets, there was an increase in fatal and serious casualties in the last two years.
Public transport	F	↔	Bus – Mode share data from the Scottish Household Survey indicates the percentage of people travelling by bus has remained constant since 2009/2010.
	G	↑	Rail – The Office of Rail Regulation data shows a significant increase in the number of train passengers at South Lanarkshire rail stations year on year.
Walking and cycling	P	↔	Data from the Scottish Household Survey indicate a reduction in the percentage of people walking but an increase in people travelling by bicycle. The Council is developing its Cycling Strategy and is implementing its Core Path Plan to promote active travel.

Baseline situation

South Lanarkshire is located at the heart of west central Scotland and its settlements have very diverse characteristics due to the physical environment. The north of South Lanarkshire is distinctly urban with surrounding greenbelt and is home to the majority of the population with an abundance of services that are well connected to the road and rail infrastructure. To the immediate south are the commuter settlements typified by the large numbers of daily commuters working in larger towns and Glasgow. However, the impact of this is that these centres have declined significantly to levels

where many no longer offer an essential range of services and dependence on private vehicle ownership is high.

Across the middle of South Lanarkshire some settlements have lost their traditional industries of mining or agriculture and to the south are rural centres where there is a higher than average number of retired people. Employment within these areas is largely reliant on the service sector, including tourism. In general the environmental quality of the area is high but public transport provision is relatively limited.

10.1 Local transport issues

The influence on transport issues is highly dependent on the area in which the individual lives and works because transport infrastructure differs considerably across South Lanarkshire. The following issues were identified as particular issues for residents during consultation on the Council's Local Transport Strategy:

- Improvements needed to the condition of roads and footways
- Improve road safety.
- A need for new and improved walking and cycling routes.
- Infrequent rural bus services.
- Lack of bus shelters.
- Poor train services at Carstairs Station.
- Request for a new railway station at Symington.
- Insufficient capacity at Blantyre Station Park and Ride.
- The need to encourage children to walk or cycle to school.
- The need for improvements to town centres for pedestrians with mobility difficulties.
- Congestion, particularly in town centres.
- The need for lower residential speed limits.
- The need for increasing parking provision at stations.
- The need to encourage low carbon vehicles.

These issues were considered and taken account of within the Local Transport Strategy.

10.2 Road network condition

South Lanarkshire Council is responsible for a road network that is **2,292 km** in length and comprises of **290 km** of A class roads, **250 km** of B class roads, **407 km** of C class roads and **1,345 km** of unclassified roads. This excludes the motorway and trunk road network which is the responsibility of Transport Scotland. Information on the condition of local authority roads is collected in the Scottish Road Maintenance Condition Survey organised by the Society of Chief Officers of Transportation in Scotland (SCOTS). Results for South Lanarkshire and for Scotland as a whole are given in **Table 10.1**.

Table 10.1: Carriageway condition - % of network that should be considered for maintenance treatment

	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
South Lanarkshire	53	48	49	51	39	37	37	38	38	37	36	34
Scotland Average	45	42	42	47	37	34	36	36	36	36	37	37

Source: South Lanarkshire Scotland; SCOTS

The roads across South Lanarkshire are undergoing an extensive maintenance programme which should result in a drop in the percentage of network requiring maintenance. SCOTS notes that when examining road condition results for individual local authorities it is important to recognise that local road networks vary in character, carry different volumes of traffic and serve widely disparate communities. In SCOTS view, authorities should not be judged on the absolute values given in their survey but on their performance to improve the conditions of their road networks.

Through the introduction of the £126 million Roads Investment programme, we have resurfaced approximately 46% of the South Lanarkshire road network since its introduction in 2008. In 2013/2014 and 2014/2015 we treated/resurfaced over 146 km and 160 km of our road network, respectively. Improved roads range from local residential streets to heavily trafficked strategic A class routes.

Recent winters have been amongst the most severe ever recorded in Scotland and this type of weather is extremely damaging to the condition and structure of roads. However, the Council has managed to improve the condition of the network despite these conditions due to this additional and continuing investment.

10.3 Traffic growth

It is important to recognise that local road traffic contributes to national and global carbon emissions. This in turn is a contributory factor to global climate change. Traffic also leads to the build up of levels of other harmful particulates which are responsible for air pollution. Transport, in particular private car use, puts pressure on our natural resources (land, air quality and especially energy, mainly fossil fuels) and makes a significant contribution to our global environmental impact. It accounts for some 28% of Scottish energy use and 27% of Scottish net greenhouse gas emissions⁸.

In order to manage levels of private car use and operate a safe and efficient road network it is vital to have a traffic monitoring programme which provides information in relation to the volume and type of traffic using the various routes. The Council has assessed the traffic growth rates and volumes over the last 15 years and in particular the change in the rate of traffic growth. South Lanarkshire can be split into two distinct geographical areas, notably urban to the north and west and rural to the south and east. The most recent monitoring figures suggest a mixed picture with respect to growth. The 2012 monitoring figures suggest an improving picture in respect to growth. When compared with 2011, approximately **46%** of the Council's strategic monitoring sites are experiencing a reduction in traffic growth with **36%** of sites increasing in traffic growth. With respect to national road traffic forecasts approximately **86%** of the sites are reducing in traffic or growing at rate less than the Department for Transport's predicted central growth figure which is a **34%** improvement on the 2005 baseline.

Our traffic monitoring programme to date has also demonstrated the measurable effects of major alterations in terms of the road network as well as that of developments in South Lanarkshire. Events which have had a significant effect on traffic flows can be clearly observed, including the opening of the M74 completion and the Glasgow Southern Orbital. It is anticipated that similar patterns will be observed in future monitoring exercises on corridors subject to public transport improvements and major road interventions like the M74/A725 Raith Interchange improvement.

Analysis of the general trends from the data gathered so far has also been comprehensive enough to provide an indication of predicted future traffic levels if current circumstances continue. The Council is keen to alleviate the adverse impacts of traffic and traffic growth, including the harmful effects on the environment, which is the underlying principle of the Road Traffic Reduction Act 1997. However, there are a number of external factors that make it unrealistic for the Council to achieve a reduction in the level of traffic using its roads.

These include:

- The reducing cost of motoring in real terms.
- The increasing cost of public transport.
- The deregulation of bus services (taking them outwith the Council's control).
- Rail legislation is also outwith the direct control of the Council.
- Availability of funding for transport improvements.
- The decline of traditional urban shopping and employment centres leading to people travelling further for the same services.

⁸ The Scottish Government (2005): Choosing Our Future

- Increased disparity between those who cannot afford to own a car and the more affluent people who increasingly depend on private car use and own multiple cars.
- No local control over fuel duty or road tax.
- The lack of national policy instruments to introduce road user charging on the trunk road network.

Although these factors make it difficult to reduce traffic levels there are other measures available to the Council and its partners that could cumulatively slow down the rate of traffic growth. These are:

- Travel plans for all major generators of traffic particularly the private car.
- School travel plans.
- Travel awareness and safety campaigns.
- Traveline, Transport Direct and other coordinated marketing initiatives.
- Improvements to the walking and cycling infrastructure.
- Introducing significant park and ride projects at rail stations.

10.4 Congestion

South Lanarkshire residents identified congestion, particularly in town centres and at certain pinch points as areas of concern. A baseline using combined data from 2005 – 2008 for congestion in South Lanarkshire has been established using data provided by the Scottish Household Survey. The number of South Lanarkshire residents who did not experience congestion in this period was **86%**. For the period 2012 - 2013 this increased to **92.5%**. Further monitoring of congestion in South Lanarkshire will be carried out by the Council when information becomes available from the Scottish Government.

10.5 Road safety

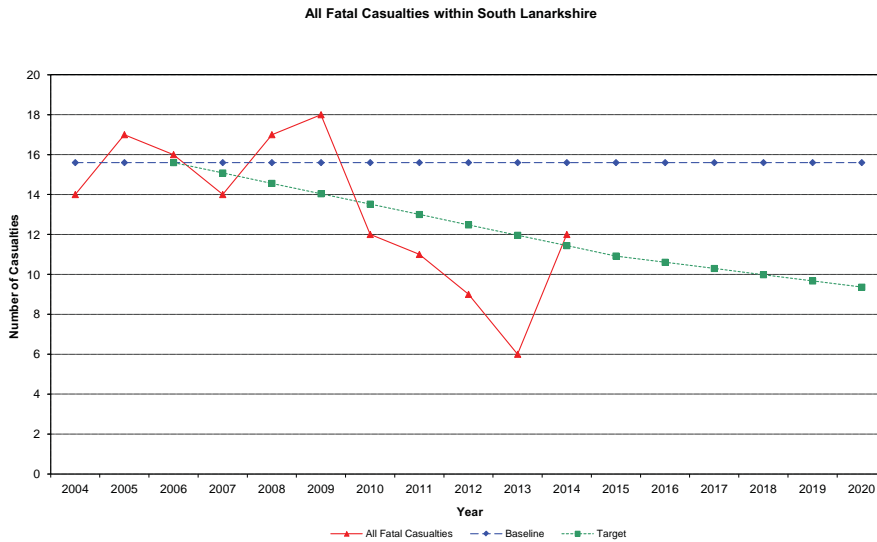
As a local Roads Authority, the Council has a duty to manage and maintain safe local public roads, footways, street lighting, street furniture and the power to improve infrastructure as necessary. This is achieved through road safety engineering and education, accident investigation and prevention as well as ongoing road maintenance.

For road safety measures to be effective, cooperation is needed across the various disciplines, the four 'Es' of road safety: education; engineering, enforcement and encouragement. At the heart of road safety planning, it is essential that casualty reduction strategies are identified and actions developed to implement these strategies. Travel awareness, the promotion of safe travel and road safety engineering measures that target specific areas where accidents occur all contribute to the target for reducing accident casualties in South Lanarkshire. Examples of road safety engineering measures carried out by the Council include route action plans on our main, rural routes, our programme of installing vehicle actuated warning signs and a combination of mandatory and advisory 20 mph limits around all of the Council's schools.

Road safety education initiatives include the Children's Traffic Club, Traffic Trails, Park Smart, the Scottish Cycle Training Scheme, Walk to School Week, Road Safety Theatre Productions and promotion of the educational projects Streetsense and Crash Magnets. Innovative new road safety training techniques introduced include the Junior Road Safety Officer Initiative, which involves peer learning, and the Kerbcraft Road Safety Training initiative. All of the above assist in reducing road casualties in South Lanarkshire.

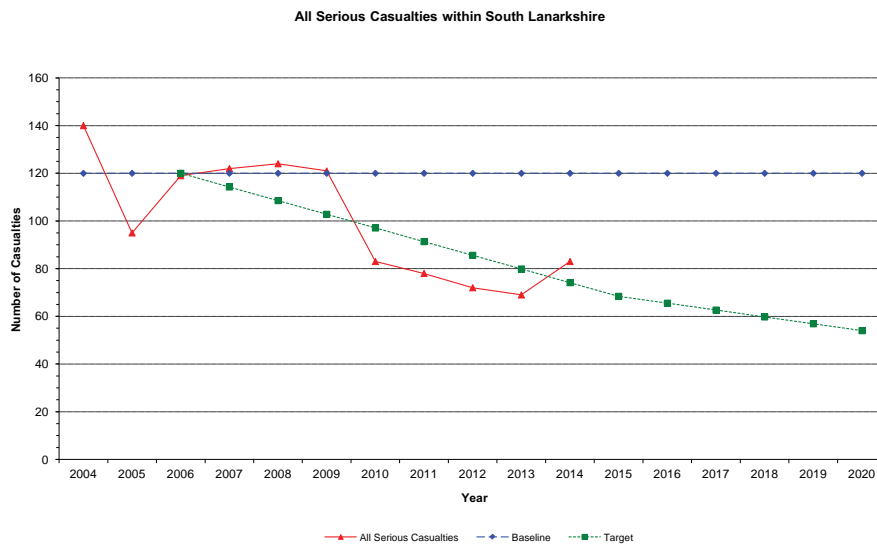
The Scottish Government has set casualty reduction targets to 2020. Based on the average number of casualties from 2004 to 2008, these targets are a 40% reduction in road deaths and a 55% reduction in serious injuries, with the equivalent targets for children being 50% for deaths and 65% for serious injuries. Progress towards these targets is shown in **Figure 10.1** to **Figure 10.4**.

Figure 10.1: All fatal casualties in South Lanarkshire (2004 – 2014)



Source: South Lanarkshire Council

Figure 10.2: All serious casualties in South Lanarkshire (2004 – 2014)



Source: South Lanarkshire Council

Figure 10.3: Child under 16 fatal casualties in South Lanarkshire (2004 – 2014)

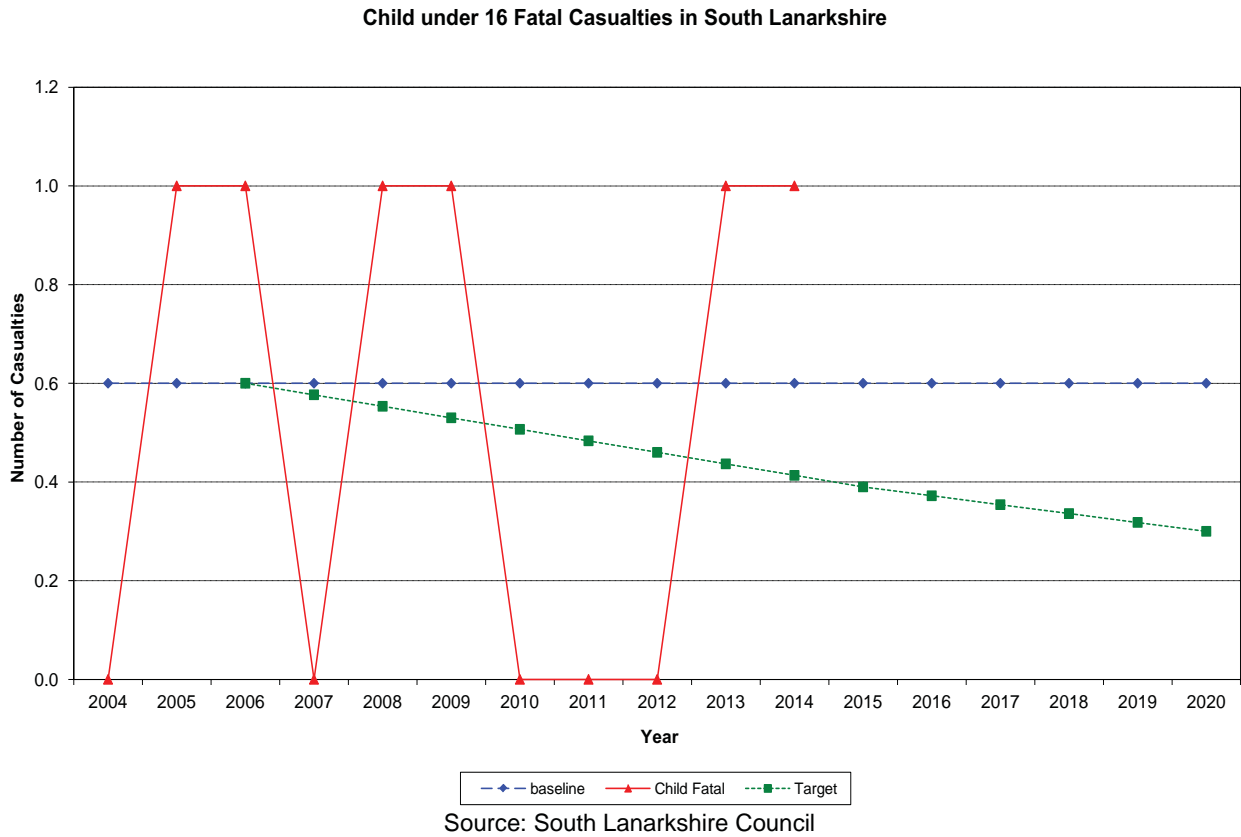
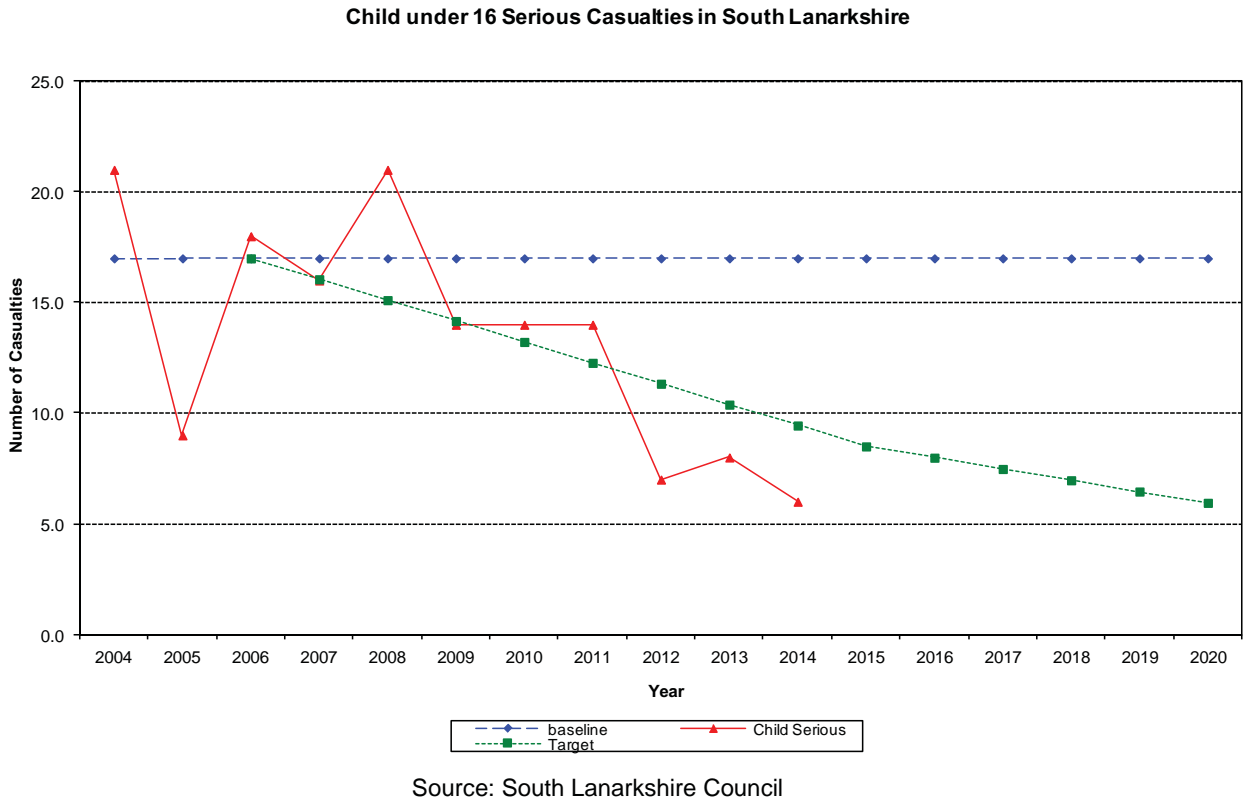


Figure 10.4: Child under 16 serious casualties in South Lanarkshire (2004 – 2014)



The Council is making good progress towards the 2020 targets. However, these targets are challenging and our future policies must, therefore, continue to strive to reduce casualty numbers.

10.6 Public transport

Buses are the most important form of public transport in South Lanarkshire in terms of the number of passengers who use them. They are crucial to increase social inclusion through transportation. They are vitally important for people, especially those with no access to a car at the time they make the journey to get to the jobs and services they need. Unfortunately, the increase in car use has not only led to reduced numbers of bus passengers but the resultant congestion has also made bus journeys longer and less predictable.

Services are at their most frequent and buses of the best quality on the corridors into Glasgow. They are less frequent and convenient on links between the towns in South Lanarkshire and also for trips around the residential areas of larger towns such as East Kilbride. In rural areas there are often only infrequent bus services on the main routes.

Buses are not provided by the Council. Instead, most services are operated by private companies who receive no direct subsidy from the Government and so have to make a profit. The companies decide when and where buses run and the fares. Where a bus is not provided by a private company and a service is seen as socially necessary, one could be secured through subsidy from Strathclyde Partnership for Transport but they only have limited funds to do this. They have to decide how to fund such services all over Strathclyde which means that they cannot fund all the bus services that people in South Lanarkshire require.

In South Lanarkshire the rail network is based on two main lines; Glasgow to London (the West Coast Main Line) and Glasgow to Edinburgh via Carstairs. There are also local lines from Glasgow to East Kilbride and Motherwell, Lanark and Larkhall via Hamilton, as well as the Cathcart Circle. In total there is **120 km** of track and, apart from nine kilometres to East Kilbride, the entire track is electrified. South Lanarkshire has **19** railway stations, **17** of which have associated park and ride facilities and **5** offer bus and rail inter-links and many more have bus stops nearby.

Information on the use of public transport is collected in South Lanarkshire for the Scottish Household Survey. This is collated and published for local authorities biennially (**Table 10.2**).

Table 10.2: Public transport usage as main mode of transport (%)

	1999/ 2000	2001/ 2002	2003/ 2004	2005/ 2006	2007/ 2008	2009/ 2010	2011/ 2012	2013/ 2014
Bus	8	8	8	6	8	7	7	7
Taxi/minicab	3	3	2	2	1	2	2	3
Rail	1	2	2	2	2	2	2	2

Source: Scottish Household Survey

Between 1999 and 2014 the public transport patronage modal split in South Lanarkshire remained at **12%**. Fewer people travelled by bus, however, more travelled by rail. It should be noted that although **Table 10.2** shows no change in mode share this does not necessarily mean there was no change in passenger numbers.

There is evidence that substantially more South Lanarkshire residents are travelling by train. The Office of Rail Regulation compiles a list of the number of passengers using railway stations in South Lanarkshire, (**Table 10.3 and Table 10.5**).

Rail patronage in South Lanarkshire increased by more than **4.8 million** journeys between 2002/2003 and 2013/2014, an increase of **119%**. This indicates that the policies and investment, for example, park and ride by the Council and its partners such as Strathclyde Partnership for Transport, Scotrail and Network Rail are having a significant impact in encouraging more people to travel by train with the subsequent benefits for the environment.

Table 10.3: Rail patronage for all South Lanarkshire Stations (entries/exits)

Station	2013/2014	2012/2013	2011/2012	2010/2011	2009/2010
Blantyre	602,544	560,532	527,094	490,204	459,820
Burnside	270,748	318,628	337,054	328,082	312,644
Cambuslang	716,608	777,400	757,576	689,836	655,394
Carluke	369,582	345,766	328,270	313,882	282,252
Carstairs	33,398	20,610	13,548	10,680	11,098
Chatelherault	66,948	62,526	59,538	57,116	49,830
Croftfoot	194,964	196,202	188,794	172,158	169,136
East Kilbride	1,079,531	988,832	985,456	909,914	855,950
Hairmyres	692,092	569,386	542,390	492,028	464,910
Hamilton Central	815,322	892,228	873,178	845,704	803,932
Hamilton West	904,785	885,286	845,188	798,816	756,516
Kirkhill	76,282	88,316	91,828	93,878	98,280
Lanark	304,640	337,896	350,014	347,128	328,594
Larkhall	406,074	342,704	327,070	317,462	323,080
Merryton	111,384	113,088	106,308	102,650	103,972
Newton	505,286	523,554	515,760	481,146	440,916
Rutherglen	1,030,290	977,418	894,434	796,568	734,707
Thorntonhall	18,394	21,624	19,348	18,290	20,492
Uddingston	769,654	784,600	7695,18	731,600	702,484
Total	8,968,526	8,806,596	8,532,366	7,997,142	7,574,007

Source: Office of Rail Regulation

Table 10.4: Rail patronage for all South Lanarkshire Stations (entries/exits)

Station	2008/2009	2007/2008	2006/2007	2005/2006	2004/2005	2002/2003
Blantyre	460,462	410,401	382,883	340,118	272,911	207,174
Burnside	309,398	289,795	281,779	273,199	265,978	249,715
Cambuslang	660,234	604,899	579,420	557,494	481,858	419,258
Carluke	291,128	274,252	267,376	253,635	225,687	189,146
Carstairs	13,860	13,261	13,766	14,589	12,329	9,407
Chatelherault	40,958	23,480	17,266	3,763	0	0
Croftfoot	161,094	161,982	155,627	139,821	120,186	116,041
East Kilbride	879,678	794,173	762,508	730,105	696,940	579920
Hairmyres	478,732	411,756	373,428	334,077	300,602	218,263
Hamilton Central	815,296	746,393	705,089	671,803	569,780	482,025
Hamilton West	739,282	617,736	575,226	593,672	492,942	375,474
Kirkhill	92,426	94,049	98,180	93,651	87,733	81,056
Lanark	342,050	301,167	289,541	278,915	257,628	218,994
Larkhall	334,308	307,910	268,707	0	0	0
Merryton	99,506	97,588	81,114	19,998	0	0
Newton	425,634	384,594	367,045	336,806	282,912	179,094

Station	2008/2009	2007/2008	2006/2007	2005/2006	2004/2005	2002/2003
Rutherglen	711,480	6139,83	579,169	526,337	422,752	308,164
Thorntonhall	19,654	17,766	18,166	14,961	13,963	13,444
Uddingston	723,332	647,248	615,598	580,677	533,333	446,373
Total	7,598,512	6,812,433	6,431,888	5,763,621	5,037,534	4,093,548

Source: Office of Rail Regulation

10.7 Walking and cycling

Walking and cycling are the most sustainable forms of transport and can also be enjoyable leisure activities. It is also a crucial form of access to public transport. A high proportion of journeys in South Lanarkshire are made on foot. South Lanarkshire Council maintains an extensive path and footway network but there are limited opportunities for walking and cycling between communities, especially in the rural areas.

The Council's Outdoor Access Strategy supports the core paths network and aims to expand a path network throughout the area, focussing specifically on both recreational and functional use by walkers, cyclists and equestrians and those seeking to access water bodies.

Information on walking and cycling is collected biennially in South Lanarkshire for the Scottish Household Survey. The 2007/2008 baseline data is shown in **Table 10.5**, along with information from previous years.

Table 10.5: People who walk or cycle as main mode of transport (%)

	1999/ 2000	2001/ 2002	2003/ 2004	2005/ 2006	2007/ 2008	2009/ 2010	2011/ 2012	2013/ 2014
Walking	16	16	12	10	19	13	23	19
Bicycle	0	0	0	0	0	0	1	1

Source: Scottish Household Survey

There may appear to be a substantial increase in the percentage of people walking since 2007/2008. However, prior to 2007, only journeys over a quarter of a mile or five minutes on foot were recorded. Since 2007 all journey lengths are recorded. There is no obvious explanation for the decline in walking in 2009/2010.

In 2013, Cycling Scotland published their National Assessment of Local Authority Cycling Policy in which they promoted the establishment of Cycling Partnerships. The South Lanarkshire Cycling Partnership was formed in January 2014 to ensure that partners could maximise the benefits cycling can bring to the area's residents. Alongside this, the Council has prepared its first Cycling Strategy for South Lanarkshire which is expected to be implemented from autumn 2015. This accords with key aims within the Scottish Government's Cycle Action Plan for Scotland.

10.8 Travel patterns of schoolchildren

The Council encourages active travel in schoolchildren as a means of creating a lifelong change in residents' travel habits through the promotion of school travel plans. In 2003, the Council employed two travel plan co-ordinators to encourage schools to develop and implement school travel plans to encourage more children to walk and cycle to school and to reduce the number of pupils travelling by car. Fifteen schools had developed travel plans by 2005 and by May 2015 this increased to **64** schools and a further **59** schools had travel plans in development. As part of a national travel study, mode share data was collected from over 36,800 children, who attended school in South Lanarkshire, in September 2014 (**Table 10.6**).

The survey results demonstrate that walking to school is the most popular mode of transport with **42%** of pupils choosing this method and a further **8%** walking part of their journey. **2.2%** of pupils

cycled to school, **23%** of trips are children being wholly driven to school and travelling by bus accounts for **21%**.

Table 10.6: School pupils' journey to school

Year	Walk	Cycle	Scooter/ Skate	Park and Stride	Driven	Bus	Taxi	Other	Sample Size
Primary Pupils									
2008	49.5%	2.0%	0.9%	5.5%	29.4%	10.0%	2.5%	0.2%	18,496
2009	45.5%	1.3%	0.5%	9.0%	31.7%	9.4%	2.2%	0.2%	17,358
2010	45.0%	2.1%	0.4%	10.6%	31.9%	7.4%	2.2%	0.3%	17,370
2011	45.7%	1.9%	0.7%	10.7%	29.6%	9.3%	2.0%	0.2%	20,000
2012	44.1%	2.3%	1.2%	9.7%	29.5%	11.0%	2.1%	0.1%	19,556
2013	43.1%	3.3%	3.8%	9.0%	26.2%	12.0%	2.4%	0.1%	20,894
2014	41.4%	3.6%	3.3%	9.0%	26.6%	13.6%	2.3%	0.1%	20,275
Secondary Pupils									
2008	35.7%	0.3%	0.2%	3.2%	12.5%	46.1%	1.1%	0.9%	10,308
2009	41.2%	0.3%	0.2%	8.5%	14.4%	33.2%	1.2%	1.0%	10,758
2010	43.1%	0.2%	0.1%	7.0%	15.4%	31.7%	1.7%	0.9%	9,859
2011	42.1%	0.2%	0.1%	6.6%	17.2%	30.9%	1.7%	1.2%	11,827
2012	39.1%	0.3%	0.3%	6.5%	17.0%	34.2%	1.1%	1.6%	12,575
2013	42.2%	0.3%	0.2%	6.5%	14.5%	33.5%	1.5%	1.2%	12,684
2014	44.6%	0.1%	0.2%	6.8%	15.2%	30.5%	1.5%	1.1%	13,379
All Pupils									
2008	43.7%	1.4%	0.7%	4.7%	24.3%	22.9%	2.0%	0.5%	29,398
2009	43.2%	0.9%	0.4%	8.7%	25.6%	18.7%	2.0%	0.5%	28,605
2010	43.2%	1.4%	0.2%	9.2%	26.6%	16.5%	2.3%	0.5%	27,968
2011	43.6%	1.2%	0.5%	9.1%	25.4%	17.7%	2.1%	0.5%	32,425
2012	41.0%	1.5%	0.8%	8.3%	25.3%	20.4%	2.1%	0.7%	33,081
2013	41.8%	2.2%	2.4%	8.0%	22.3%	20.3%	2.5%	0.5%	34,347
2014	41.7%	2.2%	2.0%	8.1%	22.7%	20.5%	2.2%	0.5%	34,467

Source: South Lanarkshire Council; Sustrans

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