SOUTH LANARKSHIRE COUNCIL

Community and Enterprise Resources

The State of South Lanarkshire's Environment 2017

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 fifth 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 continues to narrow. 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.

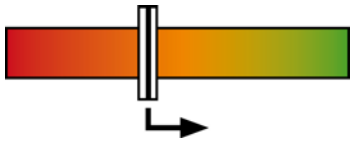
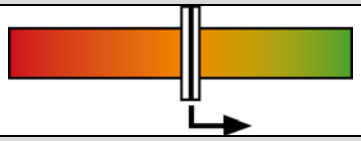
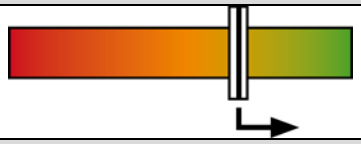
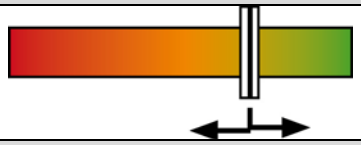
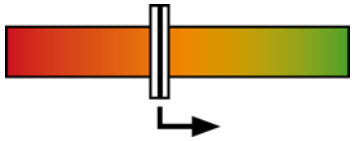
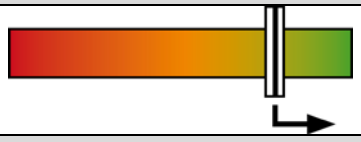
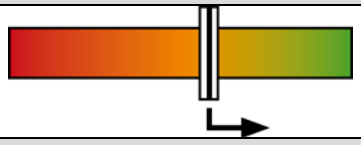
The quality of our water environment continues to improve. The Water Framework Directive illustrates the difficulties in achieving good status by some river networks. The main concerns for the water environment within South Lanarkshire are associated with diffuse pollution from historical industries 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. However, incidences of abandoned vehicles reported to the Council have significantly increased in recent years.

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 drugs related deaths, probable suicides 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. 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 reduction in both the amount of waste generated per household and the amount disposed of via landfill. Household waste which is recycled or composted continues to increase. South Lanarkshire maintained the third highest ranking in the national Street Cleanliness Score in 2015/2016.	
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 road traffic. In total, three Air Quality Management Areas have been declared across South Lanarkshire. Noise complaints, particularly related to domestic noise, have slightly increased in recent years.	
Water	
Water quality is generally good and improving. Changes in river flow patterns potentially increase the flooding risk in some areas. The condition of standing water requires to be monitored.	
Climate change	
Carbon emissions continue to decrease in South Lanarkshire and remain below the national average. Household energy consumption also decreased but is above the Scottish average. The area's renewable capacity continues to significantly increase.	
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.	

Contents

Introduction

This is the fifth 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.

Community Planning

The Community Empowerment (Scotland) Act, 2015 places a duty on the South Lanarkshire Community Planning Partnership to prepare and implement a Local Outcomes Improvement Plan (LOIP) and associated Locality Plans from 1 October 2017. The LOIP replaces the South Lanarkshire Community Plan and the Single Outcome Agreement.

> 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 principal aim of the LOIP is set out in the Partnership's vision, **'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'**. The overarching objective of the LOIP is to **'Tackle deprivation, poverty and inequality'**.

Many of the challenges and opportunities facing South Lanarkshire and its communities can only be delivered through a longer-term approach. The LOIP and Locality Plans will help 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 the LOIP and associated plans. 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 317,100 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.

Figure 1: South Lanarkshire

1 Population and human health

SEA objectives that relate to human health

- To protect and sustain human health.
- To improve human health and community wellbeing.

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, which have now been replaced with the Local Outcomes Improvement Plans. 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 317,100 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 has agreed the first Local Outcomes Improvement Plan for the area. This replaces the South Lanarkshire Community Plan 'Stronger Together' and the South Lanarkshire Single Outcome Agreement. The Partnership has identified eight strategic approaches to tackle deprivation, poverty and inequality, including an approach to 'Tacking health 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 Local Outcomes Improvement Plan, Vision

The strategic environment for health and social care has undergone significant change over recent years, mainly resulting from the impact of the Public Bodies (Joint Working) (Scotland) Act 2014, whereby elements of health and social care were required to integrate from the viewpoint of strategic planning and operational delivery. As a result, health and social care is now co-ordinated through the South Lanarkshire Integration Joint Board (IJB). Collectively, and under the direction of the IJB, the South Lanarkshire Health and Social Care Partnership have an agreed vision – 'Working together to improve health and wellbeing **in** the community – **with** the community'.

In order to improve our population's health, reduce local health inequalities and reduce service demand, the Partnership recognises the importance of working together to deliver initiatives that promote early intervention to prevent ill health and the unnecessary escalation of need. Working together with communities and supporting people to care for themselves will help to ensure resources are maximised and better used.

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 and is comparable with 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 is slightly lower than the Scottish average.
	P	↔	**Cancer** – Continues to be the main cause of death for those aged less than 75 years. Death rates are 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 is slightly higher than the Scottish average.
Alcohol Related Deaths	P	↔	The number of alcohol related deaths has slightly increased in recent years.
Healthy Lifestyles	F	↔	**Lifestyle** – No new data is available on the number of residents who report on their health condition/status.
	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 is continuous improvement in their rate of participation.

Baseline situation

Life expectancy is increasing in South Lanarkshire but remains slightly below 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. However, the proportion of deaths from cancer is lower than in Scotland overall. The number of deaths from alcoholic liver disease has increased slightly, mirroring the national picture. Drugs related deaths in South Lanarkshire continue to reduce as does the proportion relative to the national total.

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 2016 mid year estimate, South Lanarkshire is home to about **317,100 people**, a population which has grown over the past 20 years. This has been slower than the Scottish average and is forecast to increase to **321,287** by **2024** and **326,159** 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 2003 - 2005, life expectancy at birth has increased from 74.3 to **77.0 years** for men and from 79.1 to **80.8 years** for women. This compares to Scottish life expectancy of 77.1 years (74.2, 2003 - 2005) for men and 81.1 (79.1, 2003 - 2005) for women[2].

Density of habitation

Overall, South Lanarkshire has a population density of **179** persons per square kilometres. However, this varies considerably across the Council from a high of **2,374** persons per square kilometres in Rutherglen to **46** persons per square kilometres in Clydesdale[3].

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 2016, all in the Services industry, with distribution and garages accounting for just under a fifth of all jobs. Compared to Scotland as a whole, construction, distribution and garages, manufacturing and mining, quarrying and utilities are relatively more important here as sources of employment and agriculture, fishing and forestry, health and social work business serves and banking, insurance and 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 2015 and 2016, full time employment and sole traders rose by 1.3% and 43.4% respectively, with part time employment remaining static over this period. Agriculture, forestry and fishing, distribution and garages and business services were the only sectors where the number of sole traders increased. Full time employment increased in five industries and part time employment in six. In the transport and communications sector, full time employment increased, while part time employment fell. The opposite was the case for the public administration and defence sector, with full time employment falling and part time employment increasing.

The employment forecasts show that the number of jobs in South Lanarkshire is expected to grow over the 2016 to 2026 period by 2,400 to 134,000, an increase of 1.8%. This forecast is for slower growth, at just above half the growth rate for Scotland as a whole, of 3.3%. Both full time and part time employment is forecast to grow, with greater increases in part time employment, but self employment is forecast to significantly decline. In relation to gender, the forecasts indicate that, by

[1] National Records of Scotland, Population projections by administrative area, based on 2016 mid year estimates
[2] National Records of Scotland, Life expectancy for areas in Scotland 2013 - 2015
[3] National Records of Scotland, 2014

2022, more women will hold jobs in South Lanarkshire than men and that this gap will increase by 2026. 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 2,400 in South Lanarkshire jobs over the 2016 to 2026 period, it is estimated that an additional 50,900 job opportunities will be generated through retirements and a net figure of zero jobs through occupational mobility. This will create significant numbers of job opportunities in relation to professional occupations, associate professional and technician and managers and senior official occupations but a decline in selling occupations.

At an industry level, in absolute terms, the largest increase over the 2016 to 2026 period is forecast for business support services, up by 1,700, followed by an increase of 1,000 in residential care and social work and increases of 300 in financial and insurance, head offices and management consultancies, other professional services and real estate. The largest absolute falls are forecast for construction, down by 400, in other manufacturing (which includes Rolls Royce), agriculture, forestry and fishing, land transport, machinery and wholesale trade – all down by 300.

Over the 2016 to 2026 period, the largest increase in employment by occupation in South Lanarkshire is forecast to be in professional occupations, up by 3,500, with 2,200 more in associate professional and technical occupations and 1,700 more working in manager and senior official occupations. There is also a forecast increase of 300 in personal service occupations over the 2016 – 2026 period. In percentage terms, the largest rises are 16.8% for managerial and senior officer occupations, of 15% in professional occupations, of 12.4% for associate professional and technical occupations, and of 3.4% in personal service occupations. A total of 2,000 jobs are expected to be lost in elementary occupations in South Lanarkshire over this period, with a decline of 1,900 in the number in sales and customer service occupations and of 900 in process, plant and machine operative jobs. These represent declines of 23.5%, 14.2% and 8.6%, respectively.

In 2015, 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 166,300, the highest number ever recorded since 2004. This represented 64.3% of the total 16 years and over population of South Lanarkshire, equalling the second highest figure since 2004 and the highest figure since 2013. Of those aged 16 years and over who were economically active, 85,600 (51.5%) were men and 80,700 were women (48.5%).

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

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 idea 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 adulthood[5]. 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.

In general, the health of people living in South Lanarkshire and the Scottish population is similar. However, health inequalities can be significant when considered at smaller geographical levels. 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.

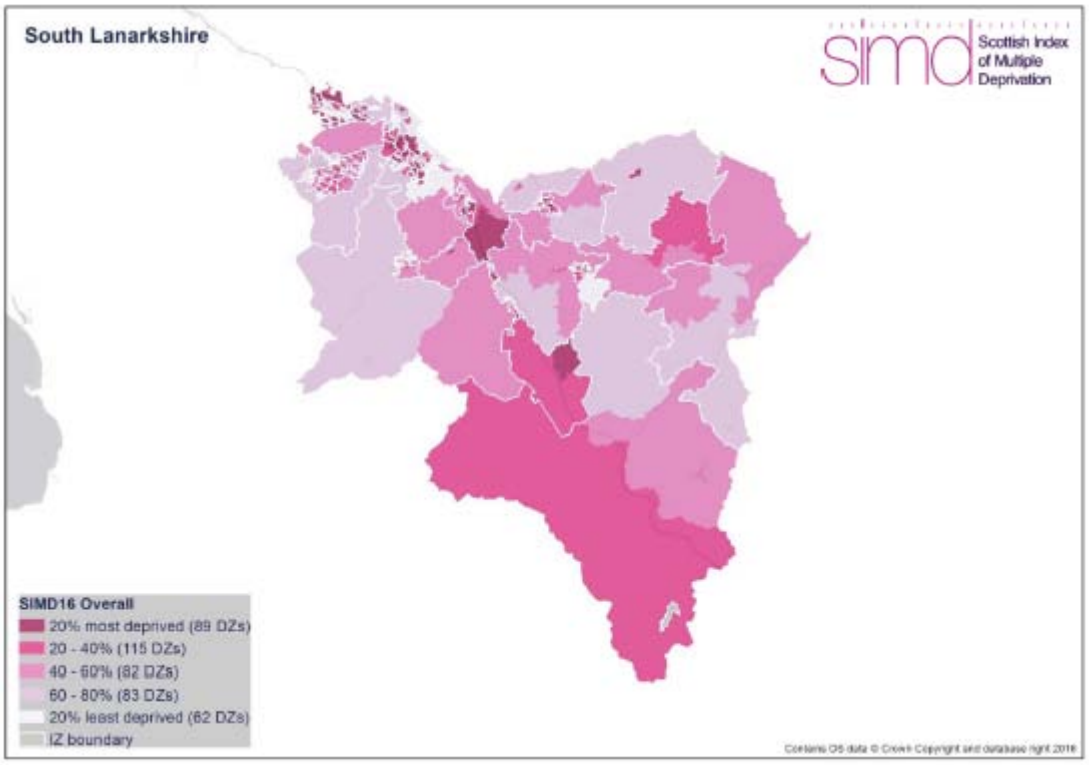
Deprivation is measured nationally using the Scottish Index of Multiple Deprivation (SIMD). The most recent SIMD produced in 2016 (**Figure 1.1**) analyses deprivation using indicators across seven key domains:

- Employment
- Income
- Education, skills and training
- Health and disability
- Housing

[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

- Access to services
- Crime.

Figure 1.1: National ranking on the SIMD of South Lanarkshire data zones, 2016



Key facts regarding South Lanarkshire:

- 6,971 data zones have been identified in Scotland of which 431 (6.18%) are in South Lanarkshire.
- SIMD 2016 shows that **62 (14.4%)** data zones in South Lanarkshire are among the 15% most deprived in Scotland. The majority of these are in the Hamilton area (17), followed by Rutherglen (15), Cambuslang (10), Blantyre and Larkhall (7 each). This accounts for **5.94%** of the worst 15% data zones in Scotland.
- South Lanarkshire had more datazones in the 5% most deprived in Scotland than in any other previous SIMD.

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.

In South Lanarkshire, life expectancy at birth in the 15% most deprived areas is **71.1** years for men. This is 6.6 years less than those born in the rest of the area (**77.7** years). No matter where men are born they are expected to have shorter lives than women.

South Lanarkshire Health and Social Care Partnership data indicates that the number of people with one or more long term health conditions (LTHC) in South Lanarkshire has increased:

- 7,565 people aged 65-74 had one LTHC in 2011/12 rising to 8,062 in 2013/14 or by 6.5%
- 5,324 people aged 75-84 had one LTHC in 2011/12 rising to 5,569 in 2013/14 or by 4.6%
- 1,710 people aged 85+ had one LTHC in 2011/12 rising to 1,755 in 2013/14 or by 2.6%

Within this, the long term health conditions with the most significant prevalence and projected increases between 2016 and 2021 were:

- People with coronary heart disease are projected to increase by 11.3%.
- The number of people affected by stroke is projected to increase by 9.2%.

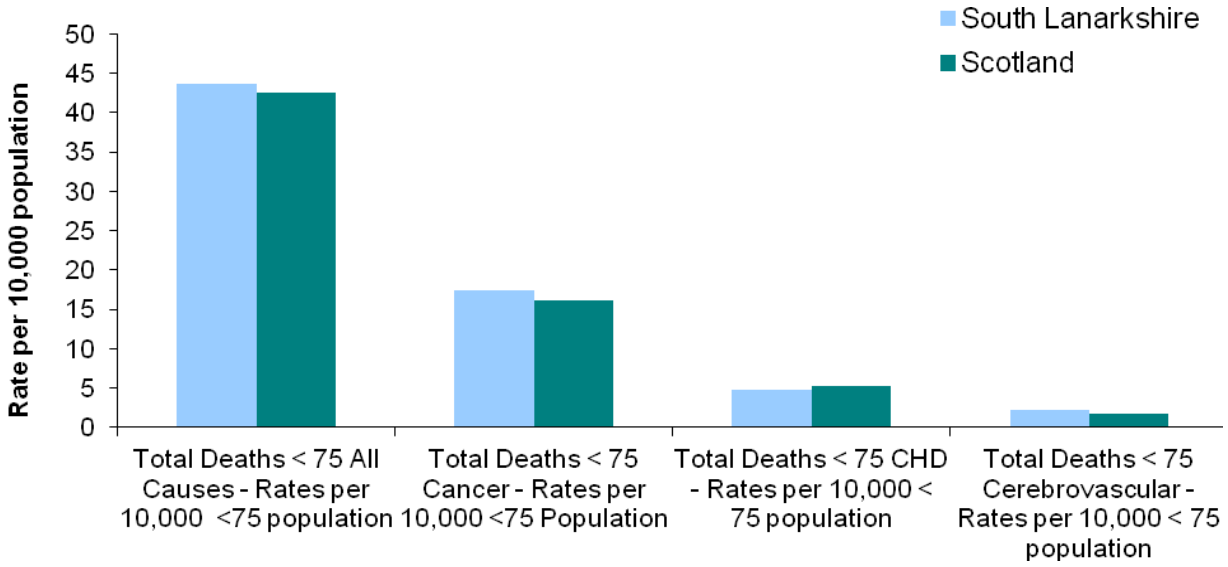
- The number of people with diabetes is projected to increase by 5.2%.
- The number of people with a physical disability is projected to increase by 5.1%.

1.3 Mortality

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 lower 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 cancers, cerebrovascular disease and deaths from all causes. This is shown in **Figure 1.2**.

Figure 1.2: Death rates for less than 75 years of age per 10,000 population, 2015



Source: National Records for Scotland

In 2014, the proportion of all deaths caused by stroke or cerebrovascular disease was greater in South Lanarkshire than in Scotland as a whole, 4.5% and 8.3% compared to 4.3% and 7.6% in Scotland as a whole. However, the proportion of all deaths in South Lanarkshire caused by cancer was lower at 27.7% compared to 29% in Scotland as a whole.

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 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.

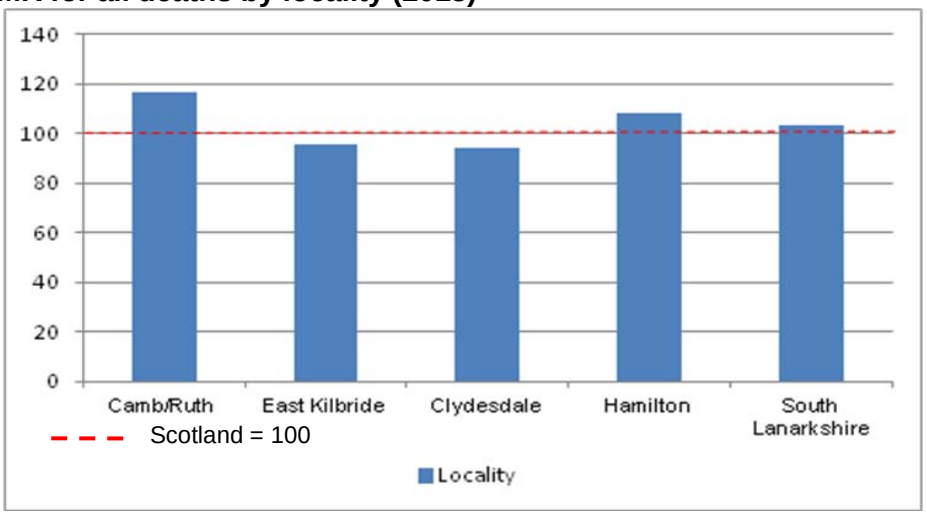
Inequalities across South Lanarkshire

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. Unfortunately, we are no longer able to calculate the SMR below the South Lanarkshire level.

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 increased from 2013 – 2015. This is reflected in **Table 1.2** which highlights that the proportion of such deaths in South Lanarkshire relative to the national total has also increased.

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
2014	82	1,152	7.1
2015	77	1,150	6.7

Source: National Records of Scotland

Drugs related deaths

The number of deaths related to drugs in South Lanarkshire has reduced since 2013. This is reflected in **Table 1.3** which highlights that the proportion of such deaths in South Lanarkshire relative to the national total also reduced.

Table 1.3: Drugs related deaths in South Lanarkshire

Year	South Lanarkshire	Scotland	% Scotland
2011	34	584	5.8
2012	29	581	5.0
2013	37	526	7.0
2014	34	613	5.6
2015	31	706	4.4

Source: National Records of Scotland

Probable Suicides

The number of deaths which are the result of 'intentional self-harm or events of undetermined intent' in South Lanarkshire has reduced since 2011, apart from an isolated increase in 2014. This is reflected in **Table 1.4** which highlights that the proportion of such deaths in South Lanarkshire relative to the national total has also reduced since 2011.

Table 1.4: Deaths related to probable suicide in South Lanarkshire

Year	South Lanarkshire	Scotland	% Scotland
2011	49	889	5.5
2012	46	830	5.5
2013	34	795	4.3
2014	40	696	5.8
2015	34	672	5.1

Source: National Records of Scotland

1.4 Mental health, learning disability, substance abuse and obesity

The prevalence of mental health, substance abuse and smoking is also more pronounced in more deprived areas. This results in impacts on the overall health and wellbeing outcomes for people who live there. For example, in 2014:

- The number of working age adults who had a mental health/learning disability in South Lanarkshire was **15,180** or **15.6%** of the adult population. This is significantly higher than the Scottish average (**12.2%)**.
- In the most deprived areas, **10%** of the population had prescriptions for anxiety and depression compared to **8%** in the least deprived areas.
- Smoking rates for mothers-to-be was **24.9%** in the most deprived areas, significantly higher than the rate of **5.8%** in the least deprived areas.
- More than 1,500 referrals are managed annually through the Lanarkshire Alcohol and Drugs Service for South Lanarkshire, with over 400 individuals being supported at any one time.

Obesity is associated with the development of a range of illnesses, including diabetes, coronary heart disease and cancer. It is a significant issue in South Lanarkshire, with over 65% of the population overweight or obese. It is projected that 40% of the adult population will be obese by 2035.

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.

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.

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

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 was repeated in 2016. Future surveys will take place in 2019 and 2022. Unfortunately, data is not available to local authority level.

The 2013 Survey found that 82% of the Scottish adult population had visited the outdoors for recreation in the twelve months prior to being interviewed. This is 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. The findings from the 2016 Survey were not published at the time of preparing this report.

South Lanarkshire Council, in partnership with North Lanarkshire Council and NHS Lanarkshire introduced a ‘Get Walking Lanarkshire’ initiative to improve the health and wellbeing of residents by getting more people walking more often. In 2015, **3,523** South Lanarkshire residents participated in these health walks, with **2,500** participants in 2016 and **3,295** participants at 9 November 2017.

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
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
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 Local Nature Reserve at Langlands Moss is in good condition. Considerable improvement was made to the Reserve in partnership with the Friends of Langlands Moss. Further potential LNR sites have been identified.
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 in the area of ancient semi natural woodland cover. There is limited data on the overall condition of this habitat. However, 36ha of Plantation has been removed from Council owned ancient woodland sites.
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.

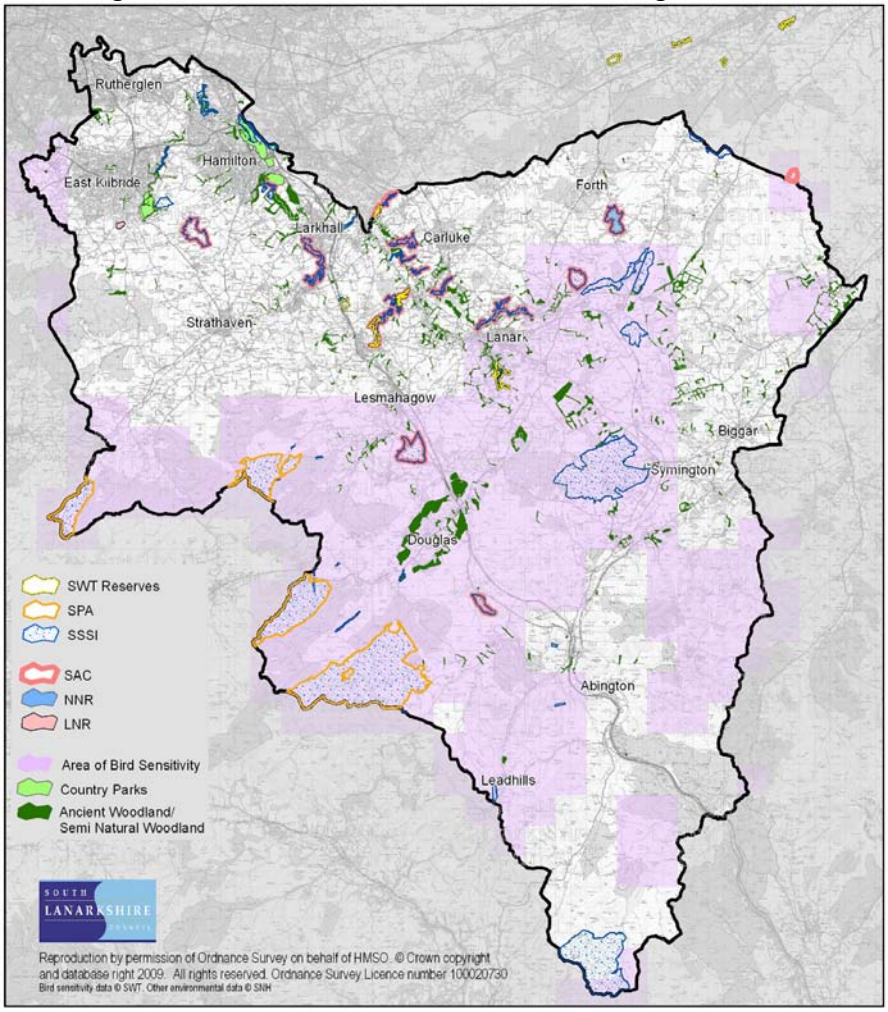
Special Protection Areas (SPAs)

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 (26,345 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): Unfavourable Declining (June 2015)**
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)

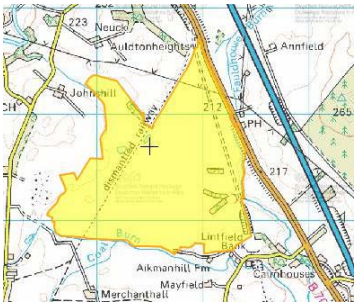
Special Areas of Conservation are areas designated under the European Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (1992), known as the Habitats Directive, set out to protect all forms of wildlife and their habitats. These sites, together with SPAs, are called Natura sites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

Braehead Moss (122.2ha). 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 (432.89ha) 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, mixed and yew woodland: Favourable Maintained (September 2002)



Coalburn Moss (223.65ha). 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.

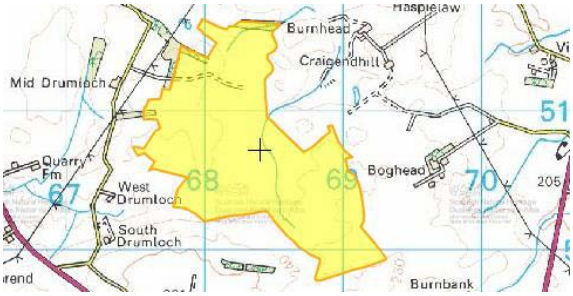
Site Condition: Dwarf Shrub Heath: Unfavourable No Change (May 2013)
Vascular Plants: Unfavourable No Change (October 2007)
Calcareous Grassland: Unfavourable Declining (May 2013)

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: Unfavourable No change (September 2014)
Degraded Raised Bog: Unfavourable Recovering (October 2002)

Red Moss (75.85ha). 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 (August 2015)



Waukenwae Moss (155.32ha). 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	Earth sciences	Favourable Maintained
Birkenhead Burn	3.73	Earth sciences	Favourable Maintained
Blantyre Muir	51.18	Raised bog	Unfavourable No change
Blood Moss and Slot Burn*	162.49	Blanket bog Earth sciences	Unfavourable No change Favourable Maintained
Bothwell Castle Grounds	71.38	Invertebrates Woodland	Favourable Declining Unfavourable No change
Braehead Moss	122.6	Intermediate bog (raised)	Unfavourable No change
Calder Glen	10.24	Earth sciences	Favourable Maintained
Cander Moss	29.58	Raised bog	Unfavourable No change
Carnwath Moss	145.46	Raised bog	Unfavourable No change
Carstairs Kames	160.27	Earth sciences	Favourable Maintained
Cartland Craigs	16.67	Woodland	Unfavourable No change
Cleghorn Glen	70.72	Invertebrates 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	Open water transition fen (wetland)	Unfavourable Declining
Craigengar*	303.5	Blanket bog; Upland habitat Vascular plants Spring-head, rill and flush (Upland) Sub-alpine dry 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	Earth sciences	Favourable Maintained
Cranley Moss	101.27	Raised bog	Unfavourable No change
Dunside	1.19	Earth sciences	Favourable Maintained
Falls of Clyde	18.07	Earth sciences Woodland	Favourable Maintained Unfavourable Recovering
Fiddler Gill	29.85	Invertebrates Woodland	Favourable Maintained Unfavourable No change
Garrion Gill*	39.75	Woodland	Favourable Maintained
Gills Burn and Mare Gill	8.73	Woodland	Favourable Maintained
Hamilton High Parks	30.77	Invertebrates Woodland (upland) 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	Woodland	Unfavourable No change
Kennox Water	16.8	Earth sciences	Favourable Maintained
Leadhills – Wanlockhead*	48.77	Earth sciences	Favourable Maintained
Millburn	14.01	Woodland	Unfavourable Recovering
Miller's Wood	12.75	Woodland	Unfavourable Declining
Milton-Lockhart Wood	11.89	Invertebrates	Favourable Maintained
Muirkirk Uplands*	18,660.29	Blanket bog Breeding bird assemblage Earth sciences 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 Woodland	Favourable Maintained Favourable Maintained
North Lowther Uplands*	7,833.3	Breeding bird assemblage Hen harrier (breeding) Upland assemblage Earth sciences	Unfavourable No change Unfavourable No change Unfavourable Declining Favourable Maintained
Raven Gill	6.52	Earth sciences	Favourable Maintained
Red Moss	75.86	Raised bog	Unfavourable Recovering
Ree Burn and Glenbuck Loch*	8.25	Earth sciences	Favourable Maintained
River Clyde Meanders	140.91	Earth sciences	Unfavourable No change
Shiel Burn	2.41	Earth sciences	Favourable Maintained
Shiel Dod*	1,187.78	Upland assemblage	Favourable Maintained
Tinto Hills	1,479.96	Earth sciences Sub-alpine dry heath Upland assemblage	Unfavourable Declining Unfavourable No change Favourable Maintained
Townhead Burn	11.07	Woodland	Favourable Maintained
Upper Nethan Valley Woods	76.82	Woodland (upland) Woodland (wet)	Favourable Maintained Favourable Maintained
Waukenwae Moss	155.49	Raised bog	Unfavourable No change
*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)	Earth sciences 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; ▪ 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. Wildlife Trusts and other nature conservation bodies, such as the RSPB, may also own and manage them. There is currently **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, awaits formal designation as a LNR. Improvements have been made to both sites in partnership with local community management groups.

The Main Issues Report of the Local Development Plan 2, identified **14** sites (**Table 2.3**) which have the potential to be designated as LNRs, as well as a proposed extension to Langlands Moss LNR. Designation of these sites is being progressed by discussing proposals with partners and writing site management plans.

Table 2.3: Potential Local Nature Reserves

Location	Location
• Backmuir Woods, Hamilton	• Blantyre, Bothwell and Uddingston
• Cadzow Glen, Hamilton	• Hamilton Low Parks, Hamilton
• Holmhills, Cambuslang	• James Hamilton Loch, East Kilbride
• Jock's Burn, Carluke	• Millheugh and Greenhall, Hamilton
• Milton, Carluke	• Mossneuk, East Kilbride
• Neilsland and Earnock, Hamilton	• Stonehouse Park, Stonehouse
• Udston and Glenlee, Hamilton	• Westburn Road, Cambuslang

Local Nature Conservation Sites

Local Nature Conservation Sites (LNCS) represent locally important biodiversity and/or geodiversity features. This includes sites previous named as Sites of Importance for Nature Conservation (SINC) and Wildlife Sites (identified by the Scottish Wildlife Trust). The current suite of sites in South Lanarkshire is outdated and does not reflect the current status of locally important habitats and species. This system is, therefore, under review. This involves determining site selection criteria and preparing a list of potential LNCS which will initially focus on urban and greenbelt land. Many local sites contain habitats or features that cannot be recreated and it is important to ensure they are afforded special consideration in relation to the local planning process.

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 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.

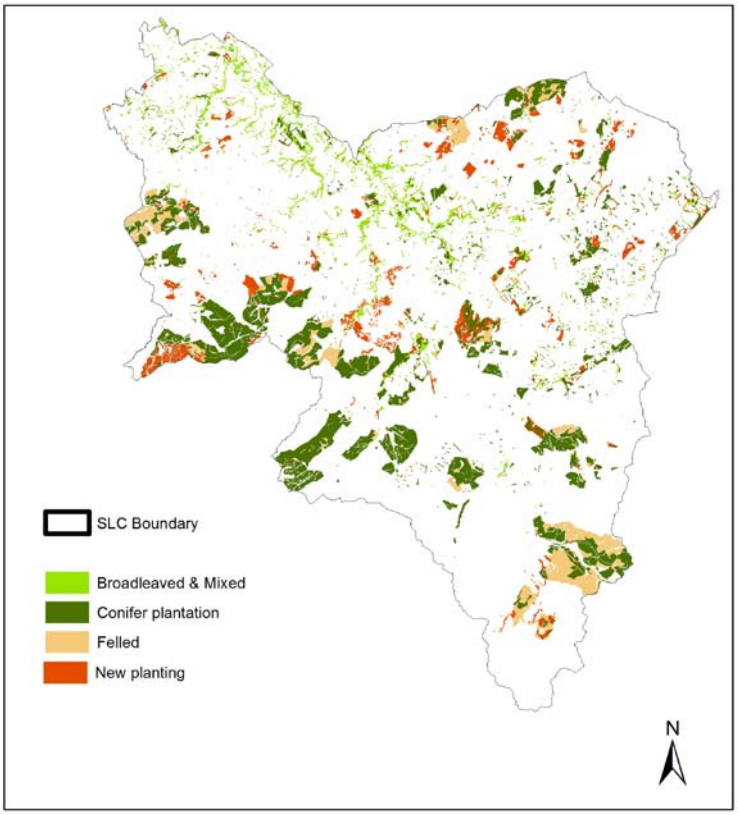
The National Forest Inventory 2014 shows South Lanarkshire as having a total of **38,281ha** of woodland. The percentage cover of commercial conifers has reduced to **54%**, due to the felling of some 8,257ha, mostly as part of wind farm developments. This has been compensated for to an extent by 4,846ha of new planting (**Table 2.4: Figure 2.2**).

Table 2.4: 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

Figure 2.2: Distribution of woodland types in South Lanarkshire



Source: South Lanarkshire Council

The Scottish Native Woodlands Survey (2014) indicates a total of **4,765ha** of native woodland in South Lanarkshire. This represents 99% of the total broadleaved woodland cover.

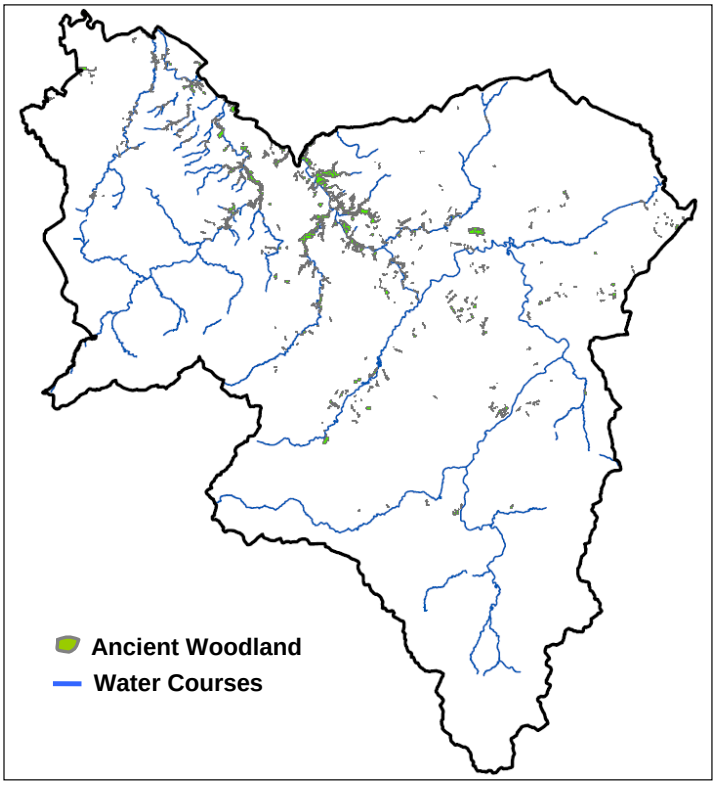
In South Lanarkshire, **1,528ha** of woodland is on the Ancient Woodland Inventory. Ancient, semi natural-woodland makes up **32%** of all native woodlands but less than 4% of the area's total woodland cover. There are 283ha of Plantation on Ancient Woodland Sites in South Lanarkshire and a reduction 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, 63ha is listed as PAWS, representing 22% of the South Lanarkshire total. Data on the Council's woodland holding will continue to be refined through the Greenspace Audit and the delivery of the Biodiversity Duty Implementation Plan (BDIP).

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**).

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



Source: South Lanarkshire Council

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.

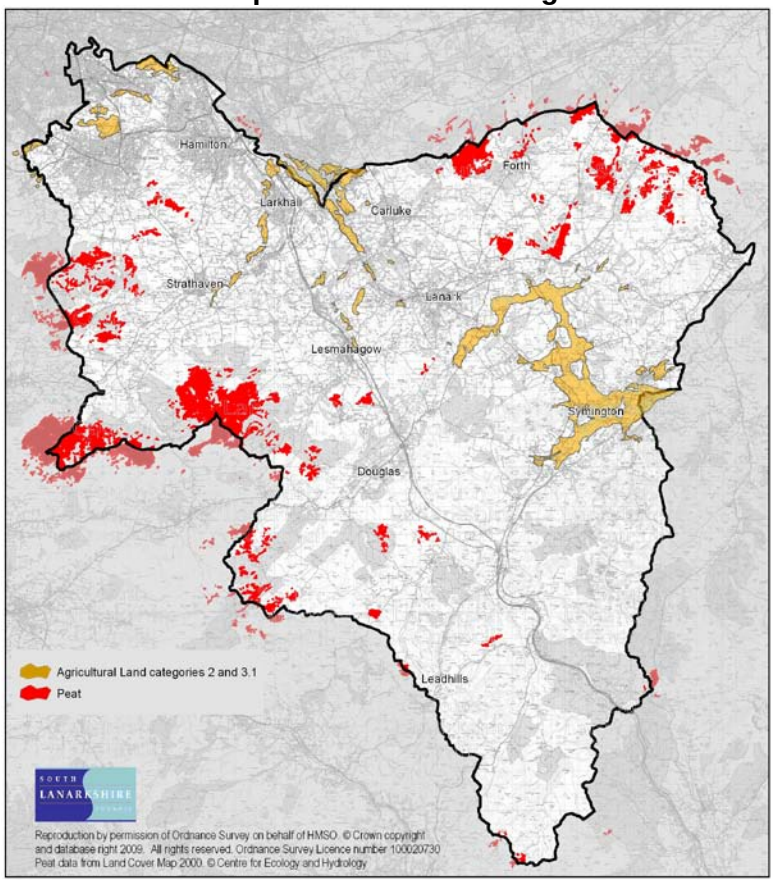
2.4 Peatland

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 South Lanarkshire Biodiversity Strategy, the Biodiversity Duty Implementation Plan, the Local Development Plan and the Sustainable Development and Climate Change 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 2.5**).

Table 2.5: 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
Cladence 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

Site name	Grid reference	Site name	Grid reference
Meadowhead (central)	NS649485	Kingshaw Moss	NS865518
Meadowhead (south)	NS649484	Gair Farm	NS873529
Rigfoot Moss	NS675471	Crawford	NS960218
Maidenburn (north)	NS680462	No data	NS948472
Maidenhead (south)	NS680458	Carnwath Moss	NS978480
Stewartfield (NW)	NS668542	Shodshill 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 UNESCO 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	↑	There is no change to the number of Scheduled Monuments and conservation areas since the last report. Listed buildings and buildings on the 'Buildings at Risk' register have slightly reduced.
Gardens and Designed Landscapes	G	↔	The number of Gardens and Designed Landscapes areas in South Lanarkshire has slightly reduced because Hamilton Palace was removed from the Inventory in 2016.
Archaeological sites	F	↑	The number of archaeological sites recorded across South Lanarkshire continues to increase year on year.
Battlefields	G	↔	The number of registered battlefields on the Inventory of Historic Battlefields remains the same as the previous report.
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 (September 2017)

Designation	Total
Scheduled Monuments	**180**
Historic Gardens and Designed Landscapes	**6**
Conservation Areas	**30**
Listed Buildings	**1,403**
▪ Category A	146
▪ Category B	696
▪ Category C	561
Total designated sites	**1,619**

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.

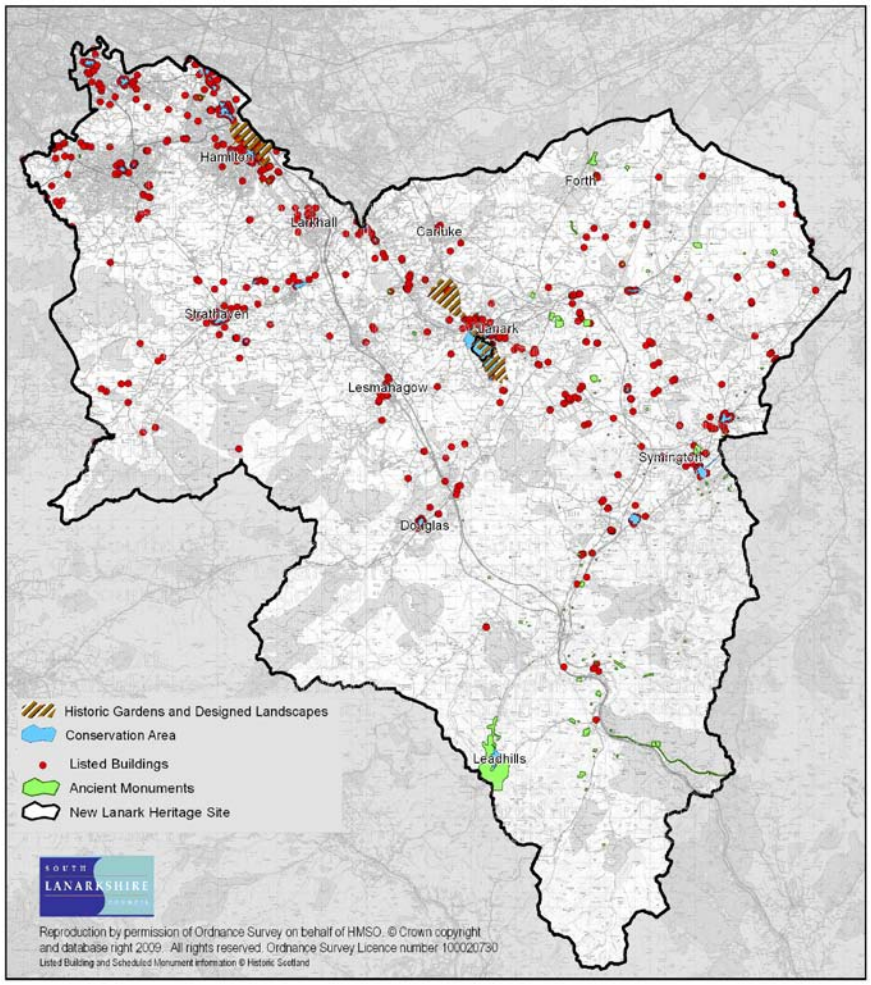
At September 2017, there are **1,403** listed buildings across South Lanarkshire. **Table 3.2** shows the listed buildings by category and area. Of these records, **56%** are in Clydesdale, **24.9%** in Hamilton, **14.3%** in East Kilbride and **4.7%** in Cambuslang and Rutherglen.

Table 3.2: Listed Building records by category, September 2017

Category	A	B	C	Total
Cambuslang/Rutherglen	4	44	19	67
Clydesdale	107	378	301	786
East Kilbride	10	95	96	201
Hamilton	25	179	145	349
Total	**146**	**696**	**561**	**1,403**

Source: Historic Environment Scotland: South Lanarkshire Council

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



Source: South Lanarkshire Council

Scheduled 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 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.

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 the Historic Environment Scotland Policy Statement 2016.

Historic Environment Scotland records indicate that in September 2017 there were **180** scheduled monuments in South Lanarkshire (**Table 3.3**).

Table 3.3: Ancient Monuments in South Lanarkshire by category, September 2017

Category	No.	%
Prehistoric ritual and funerary	41	22.8
Prehistoric domestic and defensive	76	42.2
Roman	13	7.2
Crosses and carved stones	3	1.7
Ecclesiastical	3	1.7

Category	No.	%
Secular	32	17.8
Industrial	10	5.6
20th century military and related	1	0.6
Uncategorised (Bothwell Castle)	1	0.6
Total	**180**	**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 2017, **103** buildings across South Lanarkshire were listed on the Buildings at Risk Register (**Table 3.4**). Of the buildings at risk in South Lanarkshire, **46 (45%)** are in urban locations, **26 (25%)** are in rural locations, **13 (17%)** within small town locations and **18 (17%)** are in rural settlements.

Table 3.4: Buildings at Risk in South Lanarkshire

Listed Status	March 2011	March 2013	March 2015	March 2017
A	19	18	19	18
B	38	36	37	38
C	13	12	12	12
Unlisted	42	39	38	35
Total	**112**	**105**	**106**	**103**

Source: Historic Environment Scotland

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 **(8.7%)** 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 **(23.3%)** 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, **20 (19.4%)** are classed as 'moderate' risk, **48 (46.6%)** as 'low' risk and the remaining **2 (1.9%)** buildings are considered to be at 'minimal' risk.

In South Lanarkshire, **35.0%** of buildings on the Buildings at Risk Register are classed as being in fair condition and **1.0%** in good condition. **40.8%** are classed as being in poor condition, **9.7%** in very poor condition and the remaining **13.6%** as ruinous.

3.2 Gardens and Designed Landscapes

At March 2017, there are **6** 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. Hamilton Palace was removed from the Inventory of Gardens and Designed Landscapes in April 2016 as it was determined that the site no longer met the criteria for inclusion.

Table 3.5: Historic Gardens and Designed Landscapes in South Lanarkshire (March 2017)

Site	Area (Ha)	Site Description
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 (Stonypath)	**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)

In October 2017, according to the West of Scotland Archaeology Service (WoSAS) Historic Environment Record, there are **4,916** 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 2016, WoSAS were consulted on 580 planning applications. During that period, 163 applications were approved with archaeological conditions, representing more than a third (36.3%) of applications. **Table 3.6** illustrates these annual consultations.

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
2015	78	66	29	43.9
2016	83	72	33	45.8
*Excludes those withdrawn, refused or not determined.				

Source: South Lanarkshire Council

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%.

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 Bothwell Bridge 22 June 1679 (UKFOC 275) (BTL5)	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.
Battle of Drumclog 1 June 1679 (UKFOC 276) (BTL21)	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.

Source: Battlefields Trust; Historic Scotland

3.5 Historical heritage

South Lanarkshire's rich historical heritage is represented with **12** 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		
Albion Museum and Albion Motors Archive	The Biggar Albion Foundation is responsible for the Albion Club, the Albion Archive, the Biggar Rally and the Albion Museum at North Back Road which houses a collection of historic Albion vehicles and units.	Not known
Biggar Gasworks	Historic Environment Scotland. First small town gasworks to open in Scotland and among the last to close.	Not known
Biggar and Upper Clydesdale Museum	The Biggar Museum Trust. Depicts the history of the area.	Not known
Brownsbank Cottage, Biggar	The home of the poet Hugh MacDiarmid.	Not known
Greenhill Covenanters' House	Reconstructed 17th Century farmhouse tells the story of 'the killing time' and the Covenanters.	Not Known
Crawfordjohn Heritage Venture	Located in the former 18th 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, Blantyre	Illustrating Livingstone's life from his childhood in the Blantyre Mills to his explorations in the heart of Africa.	2010 - 19,937 2012/13 – 24,677 2014/15 – 20,939 2015/16 – 20,412
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, Hamilton	Features permanent displays and a programme of temporary displays on the history of South Lanarkshire. 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 2015 – 34,377 2016 – 25,371
National Museum of Rural Life, East Kilbride	Provides an insight into past farming life and how that shaped the countryside we know today.	2011 - 72,326 2012 – 71,583 2013 – 73,444 2014 – 82,573 2015 – 93,099 2016 – 102,708
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 life on the Hamilton Estate.	**Visitor Centre:** 2008 - 119,487 2009 – 131,934 2010 – 126,149

Attraction Site	Description	Visitor Nos.
		2011 – 151,640 2012 – 162,225 2013 – 206,152 2014 – 141,550 2015 – 608,907 2016 – 602,401
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 10th Duke of Hamilton between 1845 and 1858 and is famous for having the longest echo in the world at 15 seconds.	2011 - 1,423 2014 – 1,476 2015 – 1,476 2016 – 902

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.'

UNESCO World Heritage Site

Inscribed as an UNESCO 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. The village was founded in 1785 by David Dale and co-owned by the philanthropist and social reformer Robert Owen. New Lanark Conservation Trust, formed in 1974, is an independent registered charity dedicated to the restoration and development of the site.

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** Country Parks in South Lanarkshire (**Table 3.9**).

Table 3.9: Visitors to Country Parks in South Lanarkshire, 2008 - 2016

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 2015 – 896,427 2016 – 1,069,223
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 2015 – 608,096 2016 – 602,501
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	Not known*

Country Parks	Description	Visitor numbers
	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.	
*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
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
Vacant and derelict land	G	↑	The area of vacant and derelict land decreased by 34% in the last decade through re-development. The number of these sites 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, 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	↔	The importance of quality landscapes in the area continues to be recognised and protected through the local planning process.
Minerals	F	↔	Minerals remain an economically important resource across South Lanarkshire. Closed sites are being 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.

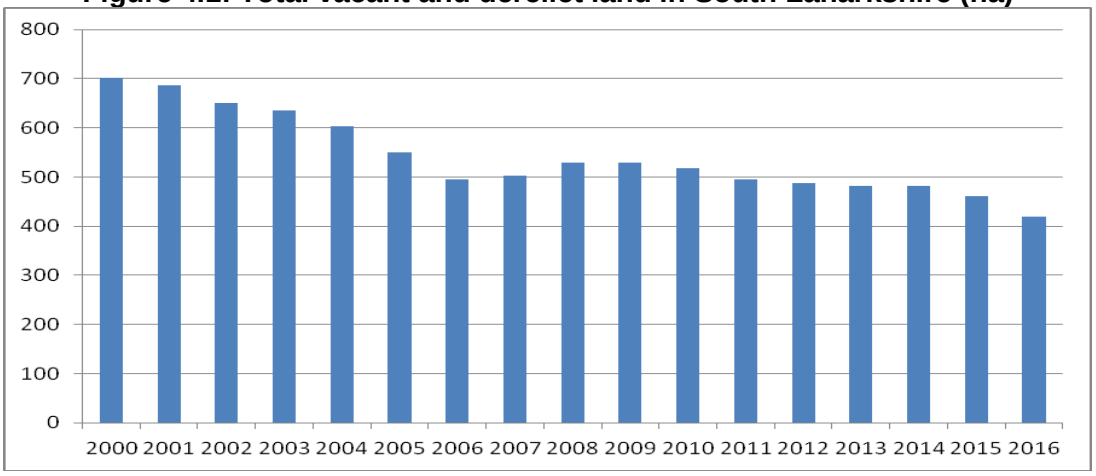
South Lanarkshire has areas of dense population, where development poses a risk to the very landscape that provides the area with its local characteristics. It is important that the green belt, local recreational and greenspace networks are maintained and appropriate vacant and derelict land developed.

4.1 Vacant and derelict land

There can be a blighting effect on the local environment associated with vacant and derelict land. One of the main environmental objectives considered in 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 habitat, providing their own beneficial effects on the local environment.

Between 2003 and 2016, vacant and derelict land decreased by 14.6% in Scotland and decreased by **34%** in South Lanarkshire (**Figure 4.1**). The Scottish increase is largely due to the inclusion of former open cast coal sites in East Ayrshire. In 2003, there were **269 sites**, totalling **635 ha** in South Lanarkshire. In 2016, this decreased to **235 sites** and a total of **419 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 (60**%**) 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. In 2016, seven rural sites with an area of 15 hectares in total were taken off the register as they had become naturalised.

Table 4.1: Vacant and derelict land (ha) in South Lanarkshire, 2016

	Urban	Rural	Total	% Total Area
Clydesdale	41.43	143.36	**184.7**	44.1
East Kilbride	45.44	0	**45.44**	10.8
Hamilton	70.24	21.64	**91.88**	21.9
Cambuslang/Rutherglen	95.79	1.46	**97.25**	23.2
South Lanarkshire	**252.81**	**166.46**	**419.27**	**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 2016, **295.95 ha** of previously vacant and derelict land have been taken forward for development or greening in South Lanarkshire. The 2016 take up figure includes a 19.5 ha site at Redlees Quarry which has been transformed into an informal recreation and green network area on the edge of settlement of Blantyre.

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, providing a total of **123** plots.

- Allers Allotments, East Kilbride – There are **105** plots, covering an area of **17,500 m^2**.
- Richmond Place, Rutherglen – There are **18** plots, covering an area of **4,059 m^2**.

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.

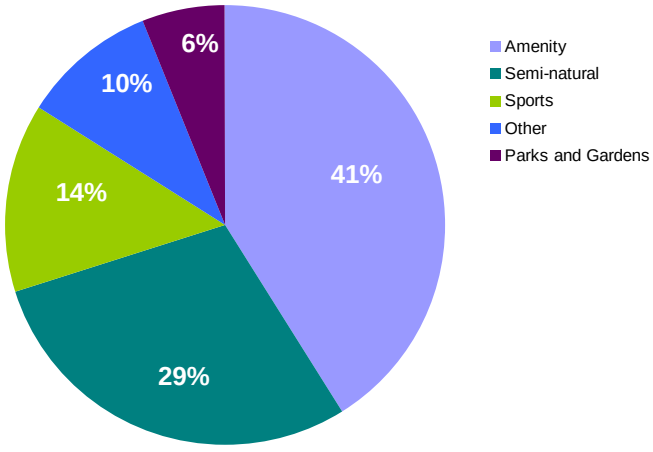
Table 4.3: Provision of greenspace ha/1,000 population within settlements (2008)

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 **342** recorded Rights of Way across South Lanarkshire, representing **500 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 **774 km**. In addition, it identifies a network of aspirational core paths extending to **232 km**, **1,211 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 **2,341 km** (**Table 4.4**).

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

Category	Area	Length (km)
Core path	Clydesdale	342
	East Kilbride	178
	Hamilton	187
	Cambuslang/Rutherglen	67
	Total core path length	**774**
Aspirational core path	Clydesdale	148
	East Kilbride	56
	Hamilton	21
	Cambuslang/Rutherglen	7
	Total aspirational core path length	**232**
Wider network	Clydesdale	747
	East Kilbride	254
	Hamilton	149
	Cambuslang/Rutherglen	61
	Total wider network path length	**1,211**
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 2016. 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 – 2017)

Year	Clyde Walkway							Biggar	Tinto Hill	Douglas
					Falls of Clyde					
	Rosebank	Crossford	West Brownlee	Lanark	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	9,000	-	-	-	-
2015	16,000	27,000	12,000	-	99,500	10,000	27,000	-	-	-
2016	10,000	26,500	10,000	-	111,000	9,000	27,000	-	-	-
2017	1,500 (January–March)	-	3,000 (January – March)	-	12,000 (January – February)	1,500 (January – March)	5,500 (January – March)	-	-	-

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	-	-	4,000 (November-December)	-	-	-	-	-
2014	66,000	83,000	17,000	158,000	90,000	18,000	22,000	6,500 (July – December)
2015	65,000	90,000	31,000	153,500	46,500	18,000	13,000	12,000
2016	61,500	64,500	26,000	170,000	77,000	16,000	16,000	15,000
2017	18,000 (January – March)	16,000 (January – March)	7,500 (January – March)	45,000 (January – March)	16,000 (January – March)	4,000 (January – March)	4,500 (January – March)	4,500 (January – March)

Year	Forth	Lower Nethan Reserve (Crossford)	Redlees 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 (September – December)	8,500 (July – December)	874,000	28,000
2013	-	6,000	11,000	22,000	926,000	-
2014	-	-	8,000	25,500	907,500	51,500
2015	-	-	19,000	27,000	884,000	47,000
2016	-	2,500 (June – December)	25,000	23,500	1,050,000	42,000
2017	-	1,000 (January – March)	5,000 (January – March)	3,500 (January – March)	-	16,000 (January – April)

Year	The Kerse Lesmahagow	Ashgill Path Ashgill	Clatty Brae Rosebank	Goose Pond South Haugh, Hamilton	Law	The Ditches Nemphlar
2014	2,500 (July – December)	-	-	-	-	-
2015	4,000	-	-	-	-	-
2016	5,000	4,000 (May – December)	1,000 (April – December)	26,000 (April – December)	8,000 (May – December)	1,500 (June – December)
2017	-	1,000 (January to March)	250 (January – March)	7,000 (January – March)	3,000 (January – March)	500 (January – March)

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, often known as the NCN, is a series of safe, traffic-free paths and quiet on-road cycling and walking routes that connect to every major town and city. The Network passes within a mile of half of all UK homes and now stretches over 14,000 miles across the length and breadth of the UK. Almost 5 million people use the NCN, and despite its name, it is also popular with walkers, joggers, wheelchair users and horse riders.

The 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 include:

- Completion of the National Cycle Route (NCR) 74, with the final section installed south of Lesmahagow.
- Design and implementation of further phases of the East Kilbride Cycle Network.
- Design of further phases of the Rutherglen and Cambuslang Cycle Network.
- New cycle shelters in Hamilton, Burnbank, East Kilbride and Rutherglen.
- New cycle shelters at a further 12 primary schools.
- Installation of 12 automatic cycle/pedestrian counters.
- Publication of the South Lanarkshire Cycling Strategy 2015 – 2020.

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 2016-2017 total £1.488m and is summarised in **Table 4.6**.

Table 4.6: Capital access projects undertaken by South Lanarkshire Council (2016/2017)

Project	Expenditure (£)
Cambuslang and Rutherglen cycle network. Minor alterations to scheme completed last year. Development of a Cycle Network blueprint.	32,000
East Kilbride Cycle Network Phase 3 construction of part of the town's cycle network.	422,500
National Cycle Route 74 Lesmahagow. Completion of the construction of the route south of Lesmahagow to Happendon.	703,500
National Cycle Route 74 Lesmahagow. Minor alterations to scheme completed last year, including footway widening.	30,000
Cycle Counter monitoring equipment, Phase 2	30,500
Cycle parking facilities. Continue programme to introduce cycle parking facilities within town centres, on cycle routes and at schools.	34,500
Footbridge inspection and repair programme	20,000
Clyde and Avon Valley Landscape Partnership, 'Connecting Communities' (access project implementation)	220,000
Clyde Walkway maintenance	25,000
Core Path network management small scale repair works	5,000
Access network route signage programme	4,000
Total	**1,527,000**

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

Nursery and Primary schools

The Council has **124** primary schools for children aged 5-12 years throughout South Lanarkshire. Many of the schools contain integrated nursery class provision and some have bases to help provide support for children with additional needs. In addition, there are **15** standalone nursery establishments, providing care for children and babies aged 0-5 years. There are just over **25,000** children of primary age currently attending primary school in the area.

A major modernisation programme to upgrade all primary school is nearing completion and by 2019 this project will have modernised the entire primary and nursery estate. Plans are also underway to build an additional primary school in the near future in Jackton, on the outskirts of East Kilbride.

Secondary schools

The Council has **17** secondary schools which cater for about 18,500 pupils aged 12 to18 years. The secondary estate has also undergone a major school renewal programme which was completed in 2012, providing a modern environment for our young people to learn.

Additional support schools

In addition to support bases within schools, the Council has **7** dedicated additional support needs schools as part of its provision. Some of these share a campus with other schools and provide specialist support 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 provides a modern 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 and recently opened as a new shared campus with Halfmerke Primary.

Community learning and development

Adult and Family Learning is delivered by the Community Learning and Home School Partnership Service. Four area teams comprising Community Learning and Home School Partnership staff deliver on four of the five service priorities; adult learning, English as a second or foreign language (ESOL), family learning and strengthening communities/volunteering. Adult literacy is delivered by staff from across two bases. A range of community based venues and schools are used to ensure the accessibility of services.

The **Youth Learning Service** operates a network of **10** dedicated youth centres and **1** support-base delivering a wide range of learning activities and supporting youth engagement in raising and taking forward youth issues, through South Lanarkshire Youth Council and the Scottish Youth Parliament. Many activities are provided using community halls, schools and recreational facilities. In addition the Youth Trust supports a further **3** youth bases.

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 **1** mobile library and a home delivery service for housebound readers.

Museums

South Lanarkshire is rich in heritage, reflected in the **12** museums across the area.

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:

- **22 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 **148,000** 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

Tenure	Clydesdale	East Kilbride	Hamilton	Rutherglen/ Cambuslang	South Lanarkshire	
Council	16.6%	12.8%	19.8%	17.9%	25,000*	16.9%
Registered Social Landlord	5.2%	2.8%	4.3%	7.5%	7,000	4.7%
Private Rented	9.2%	11.3%	10.3%	11.3%	15,750	10.6%
Owner occupied	69.0%	73.1%	65.7%	63.3%	100,250	67.8%
All tenures	**29,500**	**40,750**	**49,250**	**28,500**	**148,000**	**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 Household Estimates and Projections; National Landlord Registration Database; Local Housing Management Information System

The Local Housing Strategy (LHS) sets out the Council's plans for the development and improvement of housing and related services in the area. The LHS links closely and aligns with other key plans and strategies including the Local Development Plan, the Health and Social Care Strategic Commissioning Plan and the Sustainable Development and Climate Change Strategy.

The main purpose for the LHS is to ensure that we have an effective local housing system which is defined as 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 LHS priority outcomes are integrated and overlapping. They contribute towards meeting a wide range of national objectives with housing suitability and sustainability at the core of the strategy. For example, actions on housing quality and energy efficiency whilst important for addressing climate change, also contribute towards improving health and wellbeing and tackling potential fuel poverty and inequality.

4.6 Landscape

South Lanarkshire's landscape is diverse. A mixture of rolling farmland and river valleys stretch across the majority of South Lanarkshire, the Lowther hills dominate its southern fringes and more urbanised landscapes are prevalent in the north of the area. The landscape and its subsequent components give South Lanarkshire its distinctive character. Landscapes enhance the quality of people's lives and provide attractive settings which promote community wellbeing, local biodiversity and contribute to social development and the local economy.

Landscape is a significant asset and it is important to assess and understand our landscape resource to ensure their distinct identity, diverse character and scenic quality is safeguarded and enhanced. The South Lanarkshire Landscape Character Assessment (LCA) documents the individual characteristics of the area and provides a baseline to develop policies for the care, enhancement and sustainable use of the landscape. The Local Development Plan and other strategies and plans, such as forestry, agricultural and design, must take cognisance of the LCA which can be used for more detailed assessment of the sensitivity of landscapes to specific developments. The LCA is an important tool in understanding the landscape and the relationship with change and landscape management.

It is important to guide and manage change in the landscape, to safeguard the qualities of landscapes in accordance with broad principles:

- Landscapes evolve but change should be guided.
- Landscape change should be positive in effect.
- All landscapes deserve care.
- Some landscapes warrant special safeguard.
- Quality should be the goal.
- Landscapes are a shared responsibility.

An understanding and awareness of the landscape features and special qualities that make specific place distinctive is vital in giving communities a 'sense of place'. Special Landscape Areas are part of this approach.

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 different landscape character types and **Table 4.8** provides a summary of the area covered by each landscape character type. 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 covered by individual landscape character types 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

Landscape designations

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

Special Landscape Areas

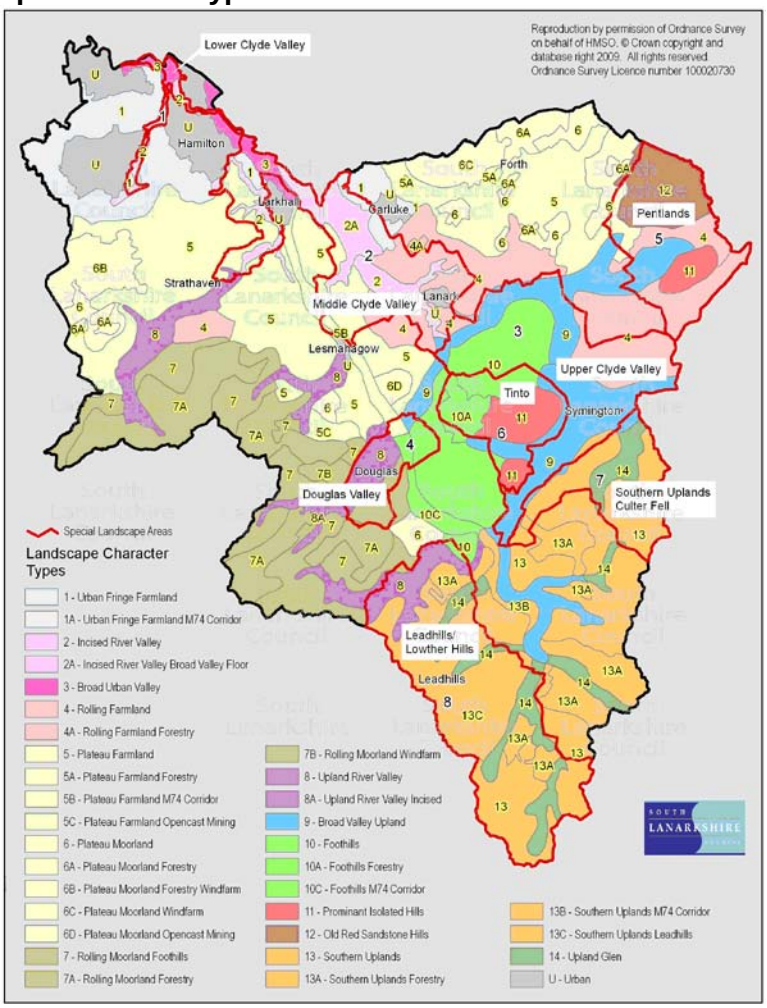
A landscape designation serves three main purposes which are interrelated:

- Recognises quality: recognition that a specific area has special importance or value and should be celebrated and/or promoted.
- Identifies policy priorities and objectives: recognition that decisions need to be made about the acceptability of landscape change.
- Management tool: recognition of the need to prioritise effort and resources for management.

In 2010, the Council approved a review of local landscape designations in South Lanarkshire. This review identified **6** Special Landscape Areas (SLA) (**Figure 4.3**) 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 AGLV. However, a new SLA was identified at Lower Clyde and Calderglen which recognised the local landscape value of the river valleys in the area. The Special Landscape Areas in South Lanarkshire are:

- Lower Clyde and Calderglen
- Upper Clyde Valley and Tinto
- Pentland Hills and Black Mount
- Middle Clyde Valley
- Douglas Valley
- Leadhills and the Lowther Hills

Figure 4.3: Landscape character types across South Lanarkshire



Source: South Lanarkshire Council

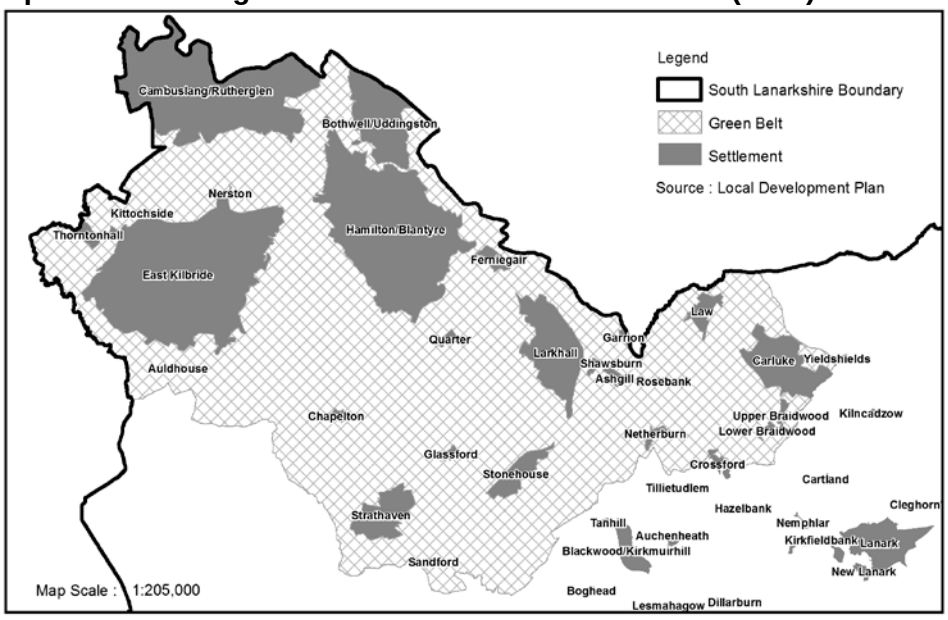
Approximately half of the land area of South Lanarkshire is designated as Special Landscape Areas, the majority concentrated in the west and south including most of upper Clydesdale.

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.

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 km^2** (**Figure 4.4**). This is a slight reduction from the coverage of 219 km^2 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 (2017)



Historic Gardens and Designed Landscapes

Historic Gardens and Designed Landscapes are formally recognised for their local historic and cultural importance. There are 6 designated 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 2017 suggest that South Lanarkshire is producing **1.5 Mt** of sand and gravel per annum from **7** operational sites, which is an increase on the **1.45 Mt** produced in 2000/01. The consented sites are estimated to have **18.2 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 have 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 1.6 **Mt** of aggregate per annum, with the sites estimated to have **55.5 Mt** in reserve.

Coal

There are two main areas of coal deposits which, when taken together, account for approximately **40%** of Scotland's remaining surface coal resources. However, without the security of a local market (previously coal was used by the Longannet Power Station which closed in 2016) the future of coal extraction in South Lanarkshire remains unclear. In 2017, there are no sites extracting coal within South Lanarkshire and all works related solely to site restoration.

Of the **4** sites that remain un-restored following liquidation of Scottish Coal, **2** (Glentaggart and Broken Cross South) have now been restored and are entering into their aftercare period. The

restoration bond monies have been secured for the remaining **2** sites (Broken Cross North and Mainshill) with restoration work expected to start on both sites in 2017. Total economic coal reserves in South Lanarkshire are estimated at about **27 Mt**. Two 'minded to approve' planning permissions exist for coal surface mines at Glentaggart East, Glespin and Hardgatehead, Forth.

Peat

Although there are extensive areas of peat across South Lanarkshire, extraction is limited to **4** sites, one located near East Kilbride, one close to Douglas Water and two near Carnwath. The peat is principally used within the horticulture sector. These sites currently extract about **40,000** cubic metres **(m^3)** of peat per annum.

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.

Within South Lanarkshire, there are **2** mineral recycling facilities, providing recycled mineral-based material, at Quay Industrial Estate, Rutherglen and Dovesdale Farm, Stonehouse. Proposals have been put forward for a further mineral recycling facility at Wellbrae Reservoir, Hamilton. This is currently under consideration.

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. There are **25** bings across South Lanarkshire, and these provide an additional mineral resource within the area. There are **4** bings with planning permission for the extraction of their mineral content, (Cadzow Bing in Hamilton, Ross Tip at Ferniegair, Douglas Water Bing near Rigside and Auchlochan Bing No. 9, Coalburn). Ross Tip, Ferniegair is the only bing being worked at this time and work is expected to be completed in 2017.

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 how it is treated is a 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 essential for minimising these environmental impacts and protecting human health. Waste can be regarded as a potential resource, with increased levels of reuse, recycling and energy recovery contributing to sustainable development.

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. 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.

In June 2010, the Scottish Government published its Zero Waste Plan (ZWP). 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)**

The majority of the waste collected by the Council is municipal waste 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 the amount being disposed of to landfill. It is important that the methods used to manage waste do not negatively impact on the environment. Poorly managed 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 offensive odours.
- 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 Zero Waste Plan targets by reducing the amount of waste being disposed of to landfill and increasing re-use, recycling and composting rates.

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
Waste generation	G	↑	The level of waste generated in the area continues to reduce with individual households now producing an average of 1.03 tonnes per annum.
Waste treatment	G	↑	The level of recycling and composting of waste has continually increased across South Lanarkshire, with more than half of all household waste recycled or composted in 2016/2017. Waste disposed via landfill continues to reduce.
Waste management	G	↑	Recycling services continue to improve with residents now able to recycle a full range of key materials at the kerbside.
Environmental waste	G	↑	Street cleanliness in the area continues to improve with South Lanarkshire maintaining the third highest ranking of all Scottish local authorities in the Street Cleanliness Score in 2015/2016.

Baseline situation

Since 2001/2002 the amount of waste generated and collected in South Lanarkshire continues to reduce at the same time as the growth in the number of households. Household recycling rates continue to increase year on year with a wider range of waste being collected and recycled. There has been a significant increase in the number of flytipping enquiries and the number of abandoned vehicles reported to the Council. The Council's response has resulted in more prosecutions being taken in respect of flytipping and more abandoned vehicles being uplifted.

5.1 Waste generation

Waste generated in South Lanarkshire has reduced significantly since 2001/2002 despite a steady increase in South Lanarkshire's population (**Table 5.1** and **Figure 5.1**). The economic downturn is likely to have been a factor in the reduction of waste generation. During 2016/2017, the Council managed a total of **166,938 tonnes** of waste.

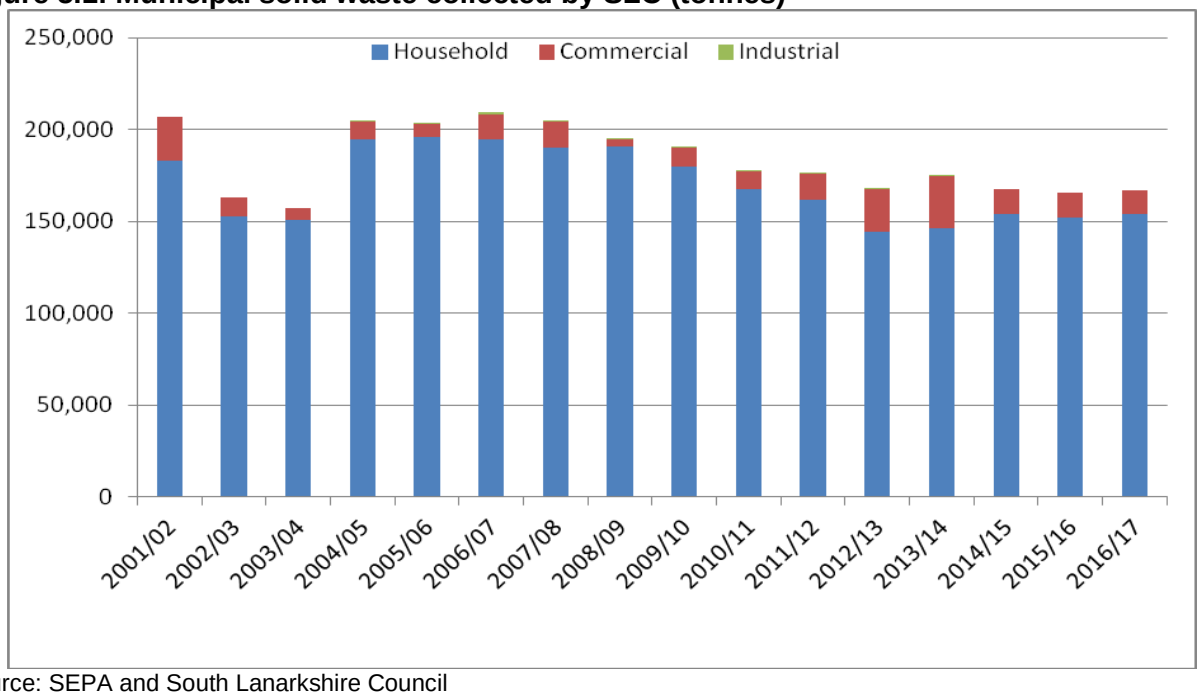
Table 5.1: Municipal solid waste collected by SLC (tonnes)

	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
2015/2016	148,396	**165,588**	152,032	13,566	-	1.03
2016/2017	149,236	**166,938**	154,045	12,938	-	1.03

Source: South Lanarkshire Council

Figure 5.1 shows the municipal waste collected by the Council over recent years. In the ten year period between 2007/2008 and 2016/2017, the amount of municipal solid waste collected by the Council fell by over 37,000 tonnes, an average of 3,757 tonnes per annum. As well as the economic downturn, other factors such as national initiatives to reduce packaging waste in the manufacturing sector and legislative drivers such as charges for single use carrier bags has contributed to the reduction in the amount of waste produced.

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



Source: SEPA and South Lanarkshire Council

Household waste

South Lanarkshire Council collected **154,045 tonnes** of household waste in 2016/2017 (**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 **1.03** tonnes in 2016/2017. The increase in the amount of household waste collected in recent years can be attributed to the introduction of a food and garden waste collection service by the Council.

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 other 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.

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, 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. Up to date data on construction and demolition waste managed in South Lanarkshire is unavailable.

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. There is no data available specifically for South Lanarkshire.

5.2 Waste treatment

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). The Council commenced the roll out of new waste and recycling services to comply with the obligations of the Waste (Scotland) Regulations 2012 in April 2015. The rollout was completed in December 2016. The majority of households in South Lanarkshire now make use of a four bin service where 'fibres', 'containers' and co-mingled food and garden waste are collected alongside residual (non-recyclable) waste.

Improved kerbside collection recycling coverage and other initiatives have led to a significant improvement in the Council's household recycling rate since 2014/2015 (**Table 5.3**). These initiatives are successfully diverting waste away from landfill.

Table 5.3: Household recycling rates (financial years)

Year	Rate (%)
2011 - 2012	35.7
2012 - 2013	37.4
2013 - 2014	39.7
2014 - 2015	47.4
2015 - 2016	48.8
2016 - 2017	53.1

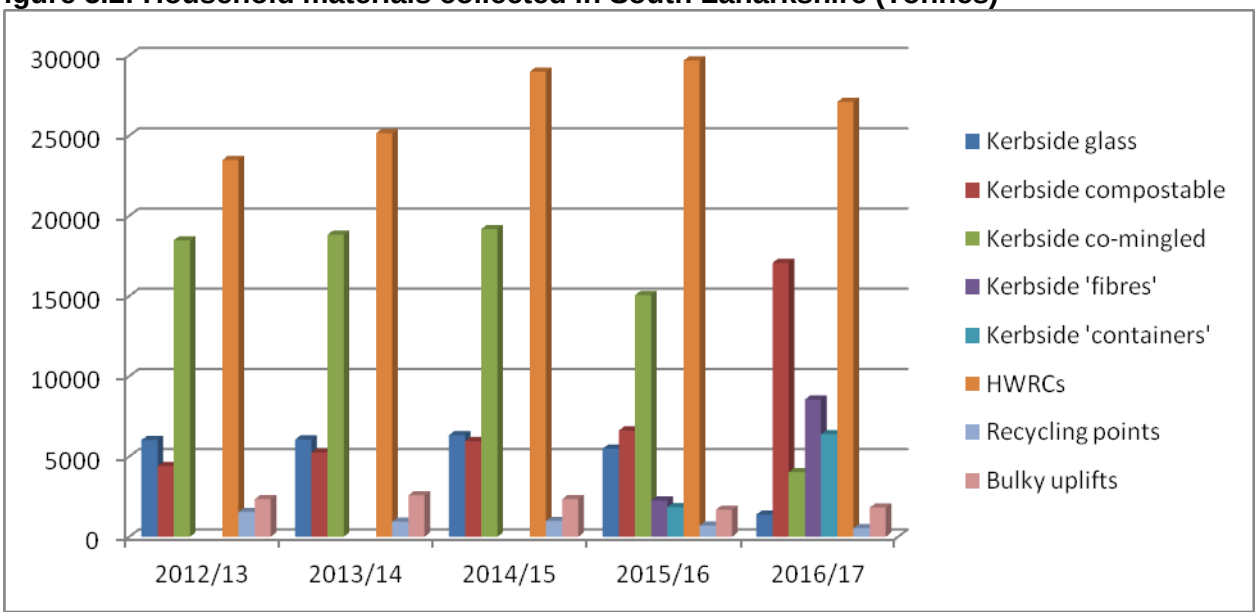
Source: South Lanarkshire Council

Table 5.4 and Figure 5.2 shows the breakdown of household materials recycled or composted in South Lanarkshire since 2012/2013. The majority of dry recyclable material ends up at a Materials Recovery Facility where it is sorted and baled for onward transportation.

Table 5.4: Household materials recycled or composted in South Lanarkshire (Tonnes)

Material	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Kerbside glass	6,023	6,058	6,330	5,490	1,384
Kerbside compostable	4,400	5,240	5,957	6,619	17,068
Kerbside co-mingled	18,475	18,822	19,176	15,061	4,020
Kerbside 'fibres'	-	-	-	2,260	8,553
Kerbside 'containers'	-	-	-	1,848	6,388
Household Waste Recycling Centres	23,480	25,149	28,984	29,679	27,103
Recycling points	1,540	944	983	705	537
Bulky uplifts	2,338	2,582	2,346	1,681	1,813
Total	**56,256**	**58,795**	**63,776**	**63,343**	**66,866**

Figure 5.2: Household materials 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 5.5**). 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 **39,973** tonnes of waste in 2016/2017, of which **27,103** tonnes were recycled or composted. This provides a recycling rate of **67.8%** for all sites.

Table 5.5: 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 as well as food and drinks cans. Car batteries and electronic equipment are also accepted at the site.

Source: South Lanarkshire Council

Bring sites

In May 2017, the Council removed the ‘bring sites’ for glass, cans and paper as the majority of homes in South Lanarkshire now have recycling at the kerbside.

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. In June 2015, the Council commenced the roll out of a new food and garden waste collection service. The food and garden waste collected is sent to an In-Vessel Composting facility where it is turned into PAS100 compliant compost. The service was introduced to comply with the Council’s statutory duty to provide a domestic food waste collection service as set out by the Waste (Scotland) Regulations 2012. The introduction of this service has seen a significant increase in the amount of material being composted and a decrease in the amount of waste being sent to landfill since 2015. In 2016/2017, the Council composted a total of **25,537 tonnes** of material. The introduction of the food and garden waste service has seen an increase in the amount of materials composted between 2014/2015 (13,412 tonnes) and 2016/2017. This represents a significant increase of 90%.

Energy recovery

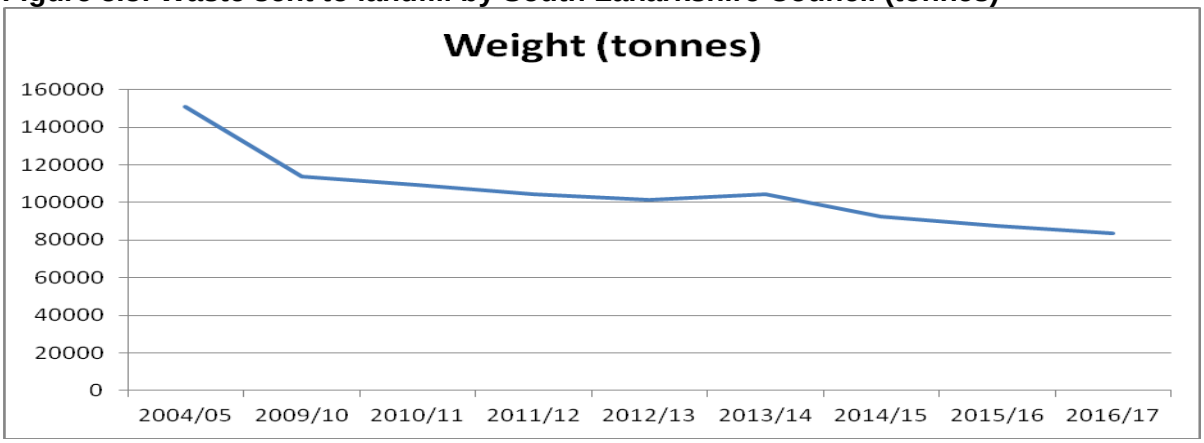
As a consequence of the stringent landfill diversion targets contained within the Zero Waste Plan and the forthcoming ban on the landfilling of biodegradable municipal waste, the Council awarded a contract for the treatment of its residual waste in 2016. From 2018, the Council's residual waste will be transported to an Energy from Waste facility in Dunbar where it will be thermally treated to produce heat and electricity.

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. Up to March 2017, the Council disposed its residual waste at two sites, Rigmuir and the Levenseat landfill site near Forth. From April 2017, residual waste is only disposed of at Rigmuir. The amount of waste landfilled by the Council 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 2015/2016, the results of which are shown in **Table 5.6**.

Table 5.6: 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
2015/2016	97.9

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.

In the last three years there has been a steady increase in enquiries relating to waste and flytipping received by the Council's Environmental Crime Team. There has also been a significant increase in fixed penalty notices issued and alleged offenders reported to the Procurator Fiscal (**Table 5.7**).

Table 5.7: Waste and flytipping enquiries

	Enquiries	Fixed penalty notices	Reported to Procurator Fiscal
2014/2015	1893	53	15
2015/2016	2277	102	57
2016/2017	2356	79	59

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.

There has been a significant increase in the number of abandoned vehicles reported to the Council during the periods 2015/2016 and 2016/2017 (**Table 5.8**). Similarly, the number of vehicles uplifted by the Council also increased from 6 in 2014/2015 to **64** in 2016/2017. The increase in the number of reports of abandoned vehicles has been attributed to the falling value of scrap metal which means that owners are finding it more difficult to dispose of vehicles. The scrap metal value for cars reduced from £85 - £100 per tonne in January 2015 to £18 - £30 per tonne in October 2015. While prices recovered during 2016, reaching a high of £65 - £80 per tonne in November 2016, predictions are that the scrap metal value for cars will remain below the January 2015 for some time to come.

Table 5.8: 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
2015/2016	344	266	25
2016/2017	716	524	64
Total to date	**3,058**	**1,643**	**305**

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 – about 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
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
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.
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, 29% 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.

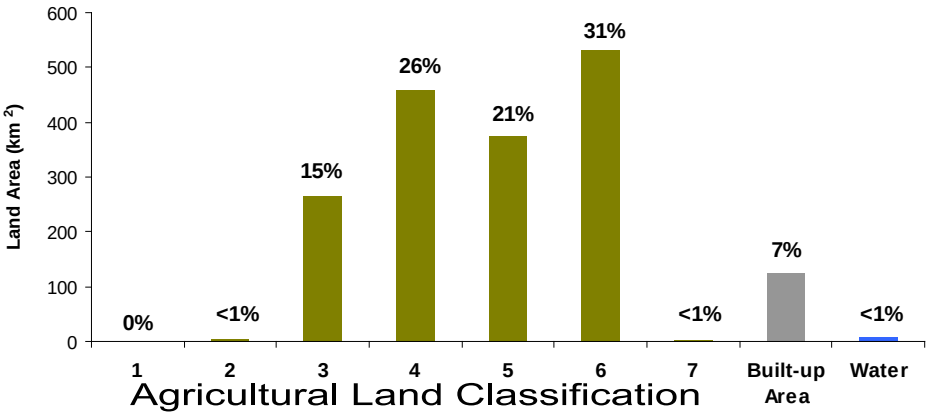
The Scottish Government has collected agricultural census statistics on a national and regional basis since 1982. There are no South Lanarkshire area specific figures and efforts should be made to close this identified data gap. These statistics will indicate whether soil capacity is changing (the amount 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'

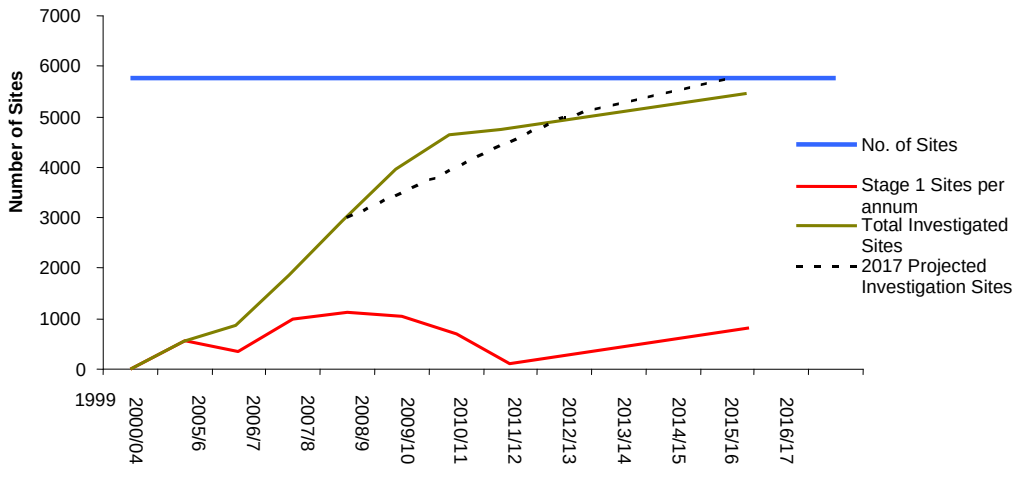
The Council has a statutory duty to investigate its land area specifically to find and resolve contaminated land issues which relate to harm to people, pollution to the water environment or damage to property. Soil quality is improved through the remediation of sites by reducing its ability to cause 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 – 2016, some **1,697** sites (**29%** of the total) have been, in whole or part, investigated and remediated under the planning system. Initial investigation is expected to continue until 2018/2019 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.

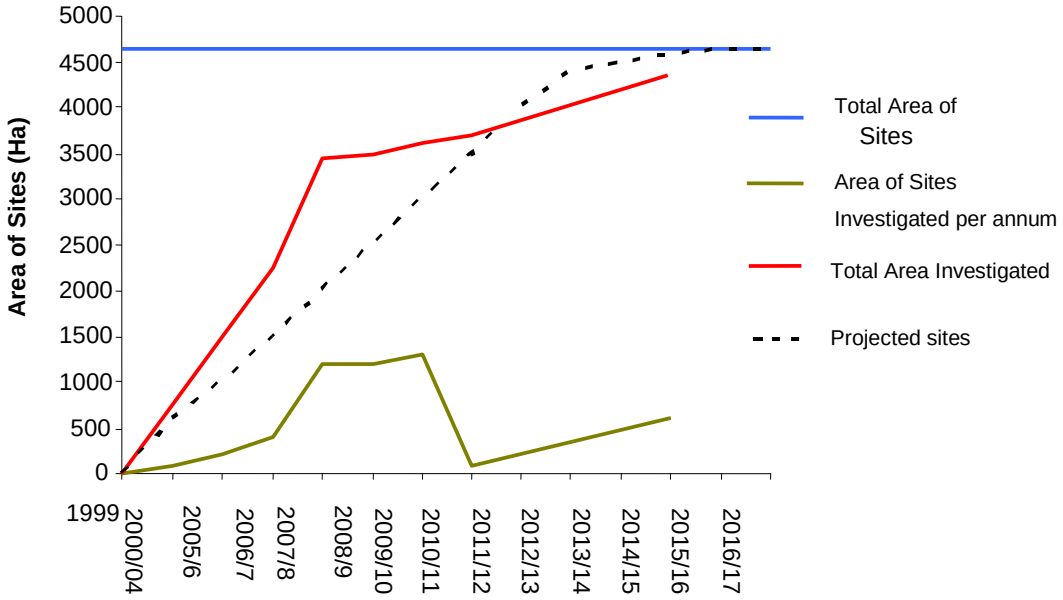
Figure 6.2: Progress on Environmental Protection Act 1990 (Part IIA) site investigations



Source: South Lanarkshire Council

Similarly, the physical area investigated will decline each year as the larger sites are investigated leaving the smaller sites (sub 100m^2) 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 (SO_2), volatile organic carbons (VOCs) and particulates (including PM_{10} and $PM_{2.5}$) and the subsequent secondary pollutant generated, such as ozone (O_3) 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. Two new Air Quality Management Areas have been declared since the last Report.
Point source emissions	F	↔	There has been an increase in the number of permits issued for industrial activities in South Lanarkshire by SEPA.
Long-range pollutants	P	↑	There are no identified long range pollutant emitters in South Lanarkshire. Long-range pollutants originating outwith South Lanarkshire remain a concern.
Airborne nuisance	G	↔	Airborne nuisance complaints remain low and variable. Odour remains the main nuisance reported to the Council.
Noise	F	↔	The number of noise complaints has increased slightly in recent years. The majority of complaints relate to domestic noise. Two areas in South Lanarkshire have 'Quiet Area' status.
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 µg m^{-3}	Running annual mean	31 December 2003
Scotland and N. Ireland	3.25 µg m^{-3}	Running annual mean	31 December 2010
1,3-Butadiene	2.25 µg 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 µg m^{-3}	Annual mean	31 December 2004
	0.25 µg m^{-3}	Annual mean	31 December 2008
Nitrogen dioxide	200 µg m^{-3} not to be exceeded more than 18 times a year	1-hour mean	31 December 2005
	40 µg m^{-3}	Annual mean	31 December 2005
Particles (PM_{10})	50 µg m^{-3}, not to be exceeded more than 35 times a year	Daily mean	31 December 2004
	50 µg m^{-3}, not to be exceeded more than 7 times a year	Daily mean	31 December 2010
Scotland	18 µg m^{-3}	Annual mean	31 December 2010
Particles ($PM_{2.5}$)*	25 µg m^{-3} (target)	Annual mean	2020
	15% cut in urban background exposure	Annual mean	2010 – 2020
Scotland	12 µg m^{-3} (limit)	Annual mean	2010
	10 µg m^{-3} (limit)	Annual mean	2020
Sulphur dioxide	350 µg m^{-3}, not to be exceeded more than 24 times a year	1-hour mean	31 December 2004
	125 µg m^{-3}, not to be exceeded more than 3 times a year	24-hour mean	31 December 2004
	266 µg m^{-3}, not to be exceeded more than 35 times a year	15-minute mean	31 December 2005
* Not currently assessed by Scottish local authorities.			

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 following adoption of South Lanarkshire's Air Quality Action Plan when it is finalised in 2017. 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 (NO_2). Although NO is not considered to be harmful to health, NO_2 can induce respiratory problems. Both NO_2 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 PM_{10}, with the finer fractions such as $PM_{2.5}$ and PM_1 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 PM_{10}, where the objective is 18 $\mu g\ m^{-3}$ in Scotland, compared with 40 $\mu g\ m^{-3}$ for the rest of the UK.

To date, three Air Quality Management Areas (AQMAs) have been declared. The first AQMA was declared at Whirlies Roundabout, East Kilbride on the basis of exceedance of the Scottish PM_{10} objective concentration. The second AQMA for Rutherglen was also declared due to exceedance of the PM_{10} objective. The town of Lanark was also declared an AQMA due to exceedance of the NO_2 objective.

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. PM_{10} and NO_2 are continuously monitored at **7** sites using automatic monitoring units. $PM_{2.5}$ monitoring is now undertaken at six of the seven sites. Diffusion tubes are also used to monitor NO_2 at **40** 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 three portable, battery operated NO_2 monitors have been deployed. The NO_2 monitoring network has expanded from the 37 locations in 2015 to **43** reflecting the priority afforded to air quality monitoring within the Council.

Particulates

Particulates (PM_{10}) are periodically monitored at various locations within South Lanarkshire. Automatic monitoring for PM_{10} is ongoing at all seven sites with recent investment within the network undertaken to upgrade the majority of sites to monitor the smaller fraction of particulate matter ($PM_{2.5}$). Monitoring at the Raith Interchange, Hamilton, is the only site remaining which has not been upgraded to allow $PM_{2.5}$ monitoring. **Table 7.2** shows the results from the automatic monitoring sites against the 18 $\mu g\ m^{-3}$ objective.

Table 7.2: PM_{10} concentrations across automatic monitoring sites, 2012 – 2016

Site ID	Site Type	Valid Data Capture Monitoring Period (%)	Valid Data Capture 2016 (%)(2)	PM10 Annual Mean Concentration ($\mu g\ m^{-3}$)(3)				
				2012	2013	2014	2015	2016
Cambuslang	Roadside	98	98	-	-	-	16	15
East Kilbride	Roadside	96	96	13	14	18	16	16
Hamilton	Roadside	6	6	-	13*	16	17	-*
Lanark	Kerbside	100	100	-	-	-	15*	11
Rutherglen	Roadside	94	94	18	19	20*	18	17
Uddingston	Roadside	94	94	-	-	-	11	9
Raith** now Raith Interchange 2	Roadside	-	-	26	21*	22*	-	-
Raith Interchange 2	Roadside	52	52	-	-	-	-	^16

Notes: Exceedance of the PM10 annual mean objective of 18 $\mu g\ m^{-3}$ are shown in bold.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (for example, if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been annualised.

*Very low PM10 data capture of 6% due to technical issues. PM_{10} monitor unable to operate for significant part of 2016.

^Data annualised

Source: Environmental Services, South Lanarkshire Council

There are variations in the level of PM_{10} 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 $\mu g\ m^{-3}$ PM_{10}**). However, levels reduced in 2015 and 2016. The annual mean PM_{10} for Rutherglen Main Street remained above the air quality objective between 2012 and 2015, however, the annual mean level was below the objective in 2016. Monitoring commenced in Cambuslang in 2015 and the Raith monitor has been relocated to a new local location in the vicinity of the upgraded motorway intersection.

Nitrogen dioxide

All monitoring locations monitor NO_2. 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, 2017. This report reviews all the air quality data collected by the Council and assesses trends in the areas monitored.

Measurements over the last five years indicate a downward trend in measured NO_2 concentrations at most of the automatic sites, with the exception of Rutherglen and Cambuslang where concentrations have increased. During 2016, NO_2 annual mean concentrations in excess of the 40 $\mu g\ m^{-3}$ objective were measured at two automatic monitoring locations within South Lanarkshire. However, distance correction calculations indicate that objectives are not being exceeded at the nearest location of relevant exposure.

During 2016, NO_2 annual mean concentrations greater than the 40 $\mu g\ m^{-3}$ annual mean objectives were measured at five diffusion tube monitoring locations (**Table 7.3**). An exceedance was measured at Tube location 12 at Farmeloan, Rutherglen measuring 41 $\mu g\ m^{-3}$. This location is within the existing AQMA declared for PM_{10} within Rutherglen, however, this location is not representative of relevant exposure and distance calculations were undertaken. The estimated NO_2 annual mean at the closest relevant exposure to Tube 12 is 39 $\mu g\ m^{-3}$.

Table 7.3: Continuous monitors in South Lanarkshire

Site ID	Site name	Site type	Monitor type	Data capture 2016 (%)[2]	No2 Annual Mean Concentrations (µg m^{-3})[3]				
					2012	2013	2014	2015	2016
	Cambuslang	Roadside	Automatic	98	-	-	-	33*	40 (25)
	East Kilbride	Roadside	Automatic	68	34#	29*	35	33	37**
	Hamilton	Kerbside	Automatic	42	42	35	37	35	34**
	Lanark	Roadside	Automatic	95	29	25	22	21	24
	Rutherglen	Roadside	Automatic	92	39	36	40.6#	37	48
	Uddingston	Roadside	Automatic	100	31	27	29	29	29
	Raith Interchange** now Raith Interchange 2	-	-	-	56	51	46.3*	-	-
	Raith Interchange 2	Roadside	Automatic	66	-	-	-	-	31**
1	3 London Street, Larkhall	Roadside	Diffusion tube	75	28.0	29.7	23.7	32.3	26
2	4 Machan Road, Larkhall	Roadside	Diffusion tube	92	-	-	-	-	18
3	4 Kirkton Street, Carluke	Roadside	Diffusion tube	83	33.0	33.2	30.6	36.2	46 (37)
4	4 St Leonard Street, Lanark	Roadside	Diffusion tube	83	-	-	-	34.0	34
5	32 Friars Lane, Lanark	Roadside	Diffusion tube	92	-	-	-	6.6	12
6	4 Bloomgate, Lanark	Roadside	Diffusion tube	92	34.0	40.3 (38.0)	34.1 (32.1)	38.2	36
7	14 Scott Hill, East Kilbride	Roadside	Diffusion tube	83	18.0	19.4	14.8	18.5	19
11	West Mains/East Mains, East Kilbride	Roadside	Diffusion tube	100	-	-	-	21.7	25
12	20 Farmeloan Road, Rutherglen	Roadside	Diffusion tube	100	38.0	39.2	32.6	37.2	41 (39)
13	254 Main Street, Rutherglen	Roadside	Diffusion tube	100	-	-	-	28.8	31
14	12 Mill Street, Rutherglen	Roadside	Diffusion tube	92	27.0	29.2	27.3	27.9	31
15	25 Burnside Road, Rutherglen	Roadside	Diffusion tube	100	-	-	-	19.6	18
16	1 Rodger Drive (opp), Rutherglen	Roadside	Diffusion tube	100	-	-	-	-	32
17	262 Cambuslang Road, Cambuslang	Roadside	Diffusion tube	100	-	-	-	-	30
18	281 Stonelaw Road, Cambuslang	Roadside	Diffusion tube	92	-	-	-	27.4	33
19	Blackswell Lane, Hamilton	Roadside	Diffusion tube	100	-	-	-	32.4	37
20	4 Annsfield Road, Hamilton	Roadside	Diffusion tube	100	-	-	-	19.8	28
21	109 Caird Street, Hamilton	Roadside	Diffusion tube	92	-	-	-	26.2	33
22	79 Union Street, Hamilton	Roadside	Diffusion tube	100	-	-	-	14.6	31
23	134 Almada Street, Hamilton	Roadside	Diffusion tube	100	-	-	-	31.6	35
24	Almada Street-Muir Street, Hamilton	Roadside	Diffusion tube	100	-	-	-	31.2	30
25	Technology Avenue, Hamilton	Roadside	Diffusion tube	92	-	-	-	14.4	23
26	24 Low Patrick Street, Hamilton	Roadside	Diffusion tube	100	-	-	-	44.6 (40.8)	52 (47)
27	10 Gateside Street, Hamilton	Roadside	Diffusion tube	92	32.0	34.1	39.5	35.3	36
28	28 Low Quarry Gardens, Hamilton	Roadside	Diffusion tube	100	13.0	12.2	12.5	17.8	14
29	5 Wordsworth Way, Bothwell	Roadside	Diffusion tube	83	18.0	21.5	19.4	20.0	21
30	93 Main Street, Bothwell	Roadside	Diffusion tube	100	-	-	-	30.9	40 (29.2)

Site ID	Site name	Site type	Monitor type	Data capture 2016 (%)[2]	No2 Annual Mean Concentrations (μg m^{-3})[3]				
					2012	2013	2014	2015	2016
31	25 Main Street, Bothwell	Roadside	Diffusion tube	83	-	-	-	-	31
32	233 Glasgow Road, Blantyre	Roadside	Diffusion tube	67	-	-	-	-	56** (55)
33	283 Glasgow Road, Blantyre	Roadside	Diffusion tube	100	-	-	-	28.8	33
34	1 Hunthill Road, Blantyre	Roadside	Diffusion tube	100	-	-	-	24.8	27
35	65 Old Mill Road, Uddingston	Roadside	Diffusion tube	100	-	-	-	18.4	22
36	Crofthead Road Park, Uddingston	Roadside	Diffusion tube	92	-	-	-	-	23
37	Burnpark Avenue, Uddingston	Roadside	Diffusion tube	92	31.0	29.8	36.5	24.0	28
38	81 Main Street, Uddingston	Roadside	Diffusion tube	92	29.0	33.3	32.8	31.5	33
39	North British Road, Uddingston	Roadside	Diffusion tube	92	30.0	27.5	24.6	22.1	27

Notes:
Exceedances of the NO_2 annual mean objective of 40 μg m^{-3} are shown in **bold.**
NO_2 annual means exceeding 60 μg m^{-3}, indicating a potential exceedance of the NO_2 1 hour mean objective are shown in **bold** and underlined.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
(2) Data capture for the full calendar year (for example, if monitoring was carried out for six months, the maximum data capture for the full calendar year is 50%).
(3) Means for diffusion tubes have been corrected for bias. All means have been 'annualised' if valid data for the full calendar year is less than 75%.
\# Where annual data capture is less than 25% an annual mean has not been calculated.
() Distance corrected NO_2 annual mean concentrations are presented in brackets.
** Data annualised

The other locations where concentrations in excess of the annual mean objective were measured during 2016 are all outwith areas currently declared as an AQMA. These were:

- Tube 3: 4 Kirkton Street, Carluke (46 μg m^{-3})
- Tube 26: 24 Low Patrick Street, Hamilton (53 μg m^{-3})
- Tube 30: 93 Main Street, Bothwell (40 μg m^{-3})
- Tube 32: 233 Glasgow Road, Blantyre (56 μg m^{-3}).

These results were adjusted for distance drop off to estimate the annual mean concentrations at the nearest location of relevant exposure. The following NO_2 annual mean concentrations were calculated:

- Tube 3: 4 Kirkton Street, Carluke (37 μg m^{-3})
- Tube 26: 24 Low Patrick Street, Hamilton (47 μg m^{-3})
- Tube 30: 93 Main Street, Bothwell (29 μg m^{-3})
- Tube 32: 233 Glasgow Road, Blantyre (55 μg m^{-3}).

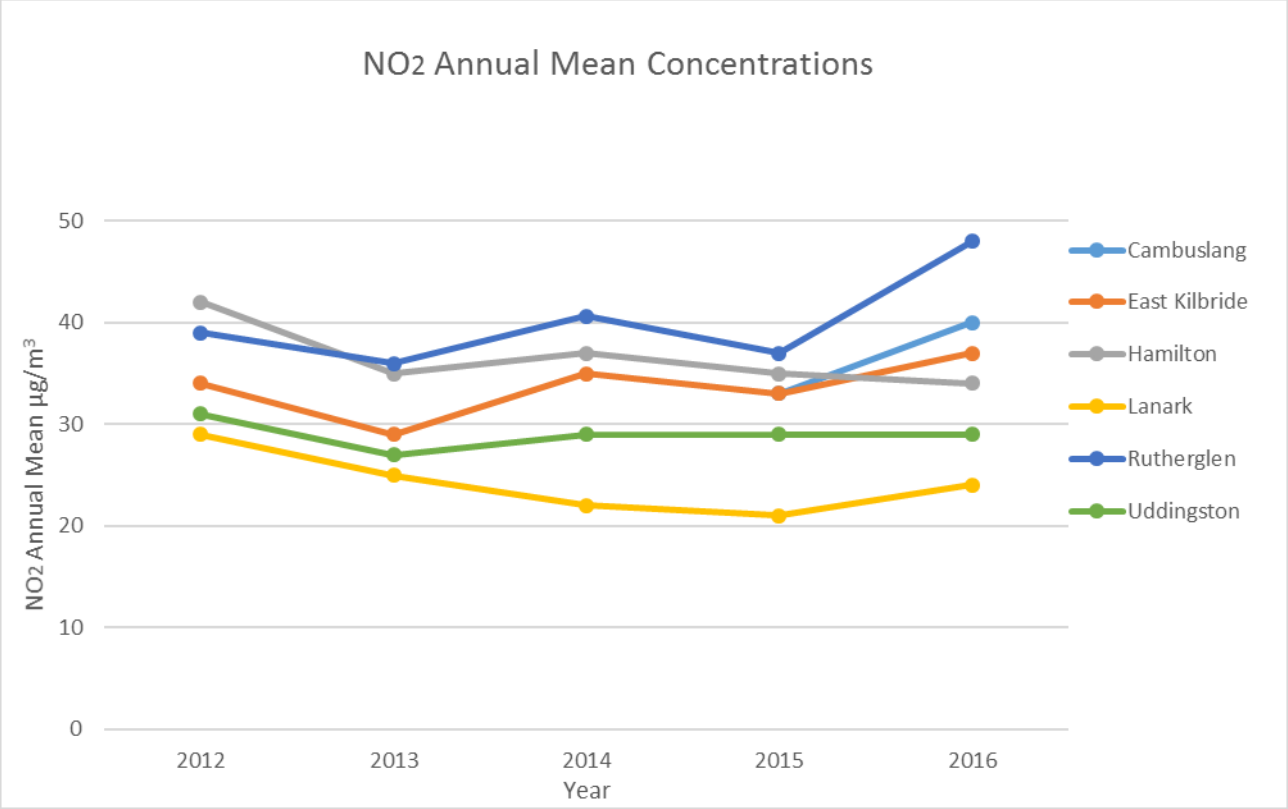
Following distance correction, two diffusion tubes measured exceedances of the NO_2 annual mean objective. These were Tube 26 at Low Patrick Street, Hamilton and Tube 32 at Glasgow Road, Blantyre.

Hamilton was subject to a Detailed Assessment within the Town Centre in 2013, which concluded that no exceedances of the NO_2 annual mean objective were occurring at locations where relevant exposure is present. Although the distance corrected concentration at Low Patrick Street is in excess of the 40 μg m^{-3}, the previous dispersion modelling indicated that concentrations were well within the 40 μg m^{-3} objective at first floor height where relevant exposure is present. The annual

mean measured in 2013 was 51 μg m^{-3}. The Council intends to continue to monitor at this location to establish if a continued upward trend will require an updated Detailed Assessment.
The exceedance measured at Blantyre is likely to have been affected by traffic diverting from the M74 during extensive roadworks. The Council intends to continue to monitor and include additional monitoring NO_2 sites at this location, with a view to conducting a Detailed Assessment, when all works on the M74 have been completed and normal traffic patterns return.

Data collected across other monitoring sites in South Lanarkshire were all below the 40 μg m^{-3} NO_2 Air Quality Objective threshold (**Figure 7.1**). Although the majority of these sites were roadside locations, the traffic on these roads is not a 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 issues. Examination of the trend in annual means measured across the South Lanarkshire network indicated that NO_2 levels have increased and decreased almost equally across all monitored locations.

Figure 7.1: NO_2 Annual Mean Concentrations



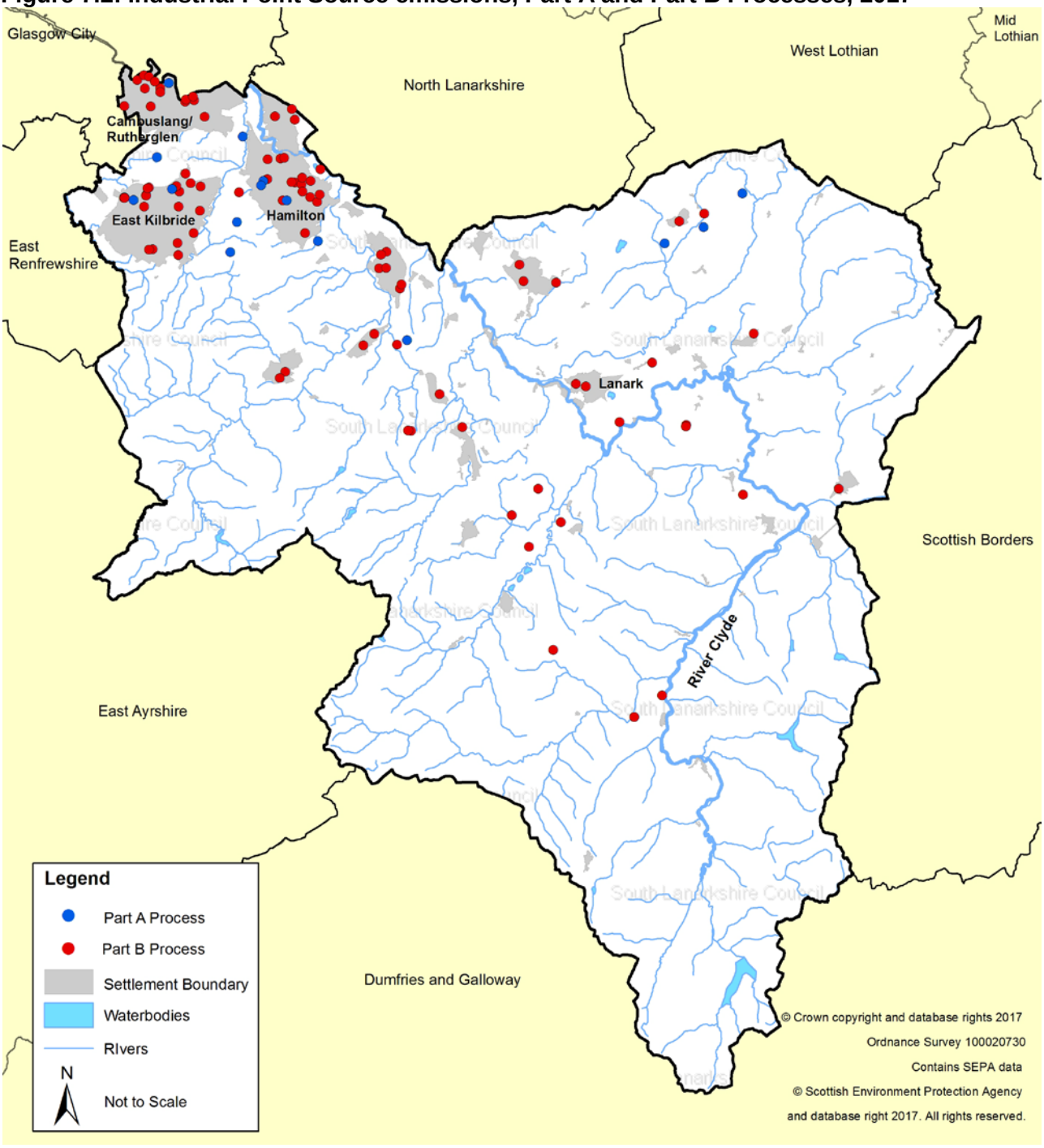
Source: Environmental Services, South Lanarkshire Council

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).

At May 2017, in South Lanarkshire there were **15** Part A sites and **99** Part B sites (**Figure 7.2**).

Figure 7.2: Industrial Point Source emissions, Part A and Part B Processes, 2017



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 (O_3) irritates the airways of the lungs, increasing the symptoms of those suffering from asthma and lung diseases and disrupts plant growth and development. O_3 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 O_3 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 7.4**).

The SNIFFER project also modelled the potential level of exceedance within SSSI sites across the UK, including the 31 SSSI sites in South Lanarkshire designated with priority habitats sensitive to atmospheric pollutants (**Table 7.5**). 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 7.4: 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.								

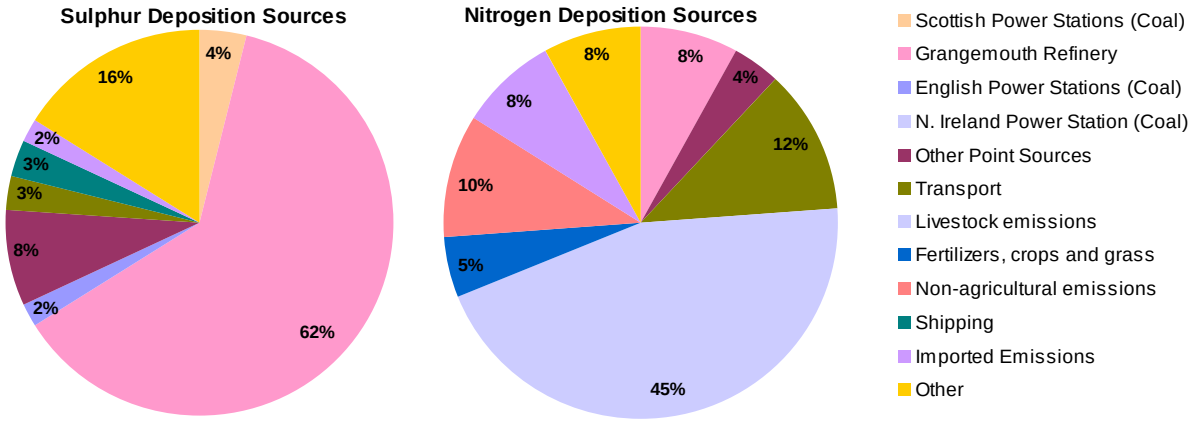
Table 7.5: SSSI that exceed critical loads for both acid and nutrient deposition in South Lanarkshire

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

SSSI Site	Site critical load exceedance			
	Acidification		Nutrient enrichment	
	2005	2020	2005	2020
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
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 7.3** illustrates the source contribution of these pollutants to Cranley Moss SAC, in 2010.

Figure 7.3: 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 7.6** displays the

number of complaints and their reasons received by the Council between 2005 and 2017. Odour is the main reason of complaint during each recording period. The number of complaints received has increased for all pollutants since 2005/2006, with the exception of dark smoke.

Table 7.6: Complaints received by South Lanarkshire Council 2005/2006 to 2016/2017

	Dust/grit	Smoke	Fumes	Dark smoke	Garden bonfires	Odour
2005/2006	7	24	20	15	24	214
2006/2007	5	24	14	21	37	186
2007/2008	12	30	34	23	31	189
2008/2009	5	31	32	21	32	154
2009/2010	15	23	19	17	44	203
2010/2011	5	45	18	9	33	170
2011/2012	9	34	5	7	54	164
2012/2013	9	41	23	3	27	157
2013/2014	8	51	31	4	44	133
2014/2015	15	58	34	8	29	170
2015/2016	8	50	35	11	42	138
2016/2017	10	45	26	9	37	120

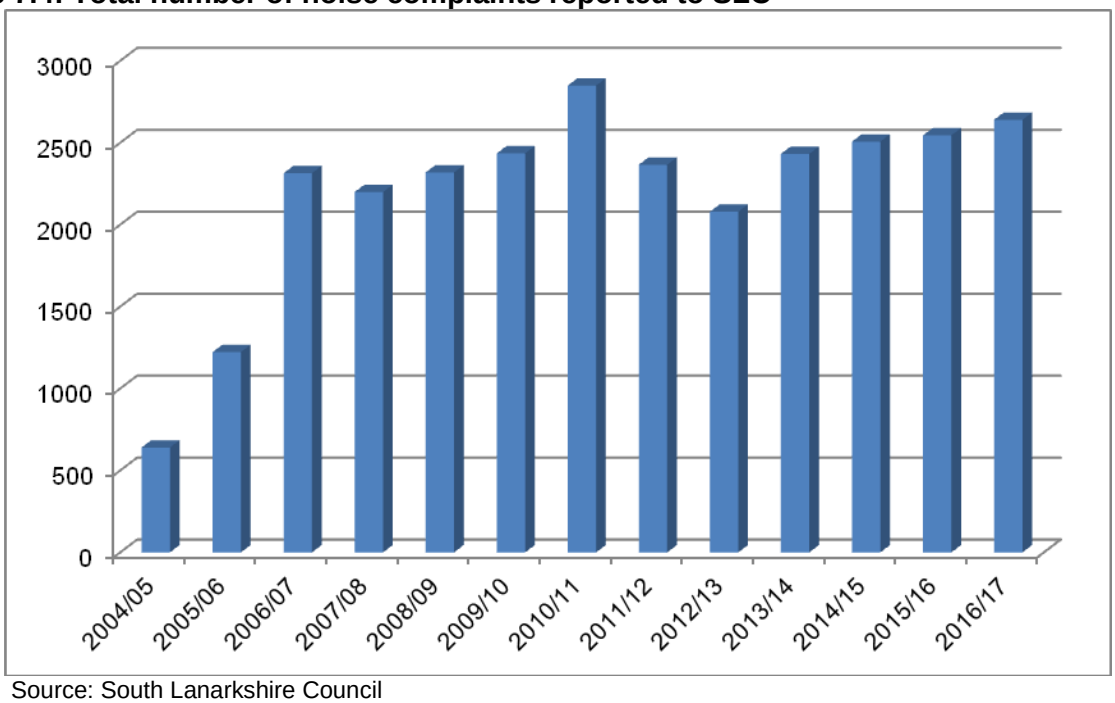
Source: South Lanarkshire Council

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 2016/2017. Overall, **2,640** noise complaints were received by the Council during 2016/2017, reflecting a steady increase since 2010/2011. However, this is 7% lower than the peak seen in 2010/2011. 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 7.4 and Table 7.7**).

Figure 7.4: 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 7.7**).

Table 7.7: Noise complaints reported to SLC by area

	East Kilbride	Rutherglen	Clydesdale	Hamilton	Unspecified	Total
2004/2005	125	53	69	163	230	640
2005/2006	301	133	114	349	325	1,222
2006/2007	631	309	259	635	480	2,314
2007/2008	594	307	258	630	410	2,199
2008/2009	598	332	272	752	375	2,319
2009/2010	664	359	290	805	317	2,435
2010/2011	766	410	319	745	609	2,849
2011/2012	640	279	302	684	431	2,366
2012/2013	443	297	282	611	446	2,079
2013/2014	552	410	283	716	471	2,432
2014/2015	537	411	283	796	480	2,507
2015/2016	593	417	360	759	416	2,545
2016/2017	647	471	318	874	330	2,640

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 increased in 2016/2017, particularly with regards to noise from dogs (**Table 7.8**). Other types of complaint remained consistent or reduced. 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 7.8: Type and number of complaints received regarding residential noise

	Domestic noise	Alarms (intruder)	Dogs	Total
2004/2005	148	31	176	355
2005/2006	661	35	233	929
2006/2007	1,499	34	344	1,877
2007/2008	1,313	52	418	1,783
2008/2009	1,427	33	412	1,872
2009/2010	1,497	63	481	2,041
2010/2011	1,834	68	526	2,428
2011/2012	1,646	53	351	2,050
2012/2013	1,340	53	338	1,731
2013/2014	1,463	52	581	2,096
2014/2015	1,516	64	563	2,143
2015/2016	1,539	68	533	2,140
2016/2017	1,513	53	686	2,252
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 7.9**).

Table 7.9: Type and number of complaint received regarding environmental noise

	Commercial premises	Licensed premises	Construction noise	Industrial	Street noise	Traffic	Total
2004/2005	45	68	26	5	17	35	**196**
2005/2006	52	103	25	5	26	78	**289**
2006/2007	65	143	25	19	29	90	**371**
2007/2008	79	133	24	65	16	73	**390**
2008/2009	83	126	17	79	25	82	**412**
2009/2010	102	86	22	36	20	72	**338**
2010/2011	102	90	92	21	48	13	**366**
2011/2012	88	61	84	10	53	12	**308**
2012/2013	108	65	92	8	44	25	**342**
2013/2014	107	68	76	9	40	27	**327**
2014/2015	107	58	113	5	58	16	**357**
2015/2016	111	64	119	9	72	23	**398**
2016/2017	85	77	157	16	38	9	**382**
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 development planning 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, 19, 24 and 11 complaints relating to artificial light pollution for each year from 2012/2013 to 2016/2017, 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	↔	There has been a slight decrease in the proportion of rivers achieving High/Good status under the Water Framework Directive (WFD).
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 continues to improve. The data available on ponds and wetlands remains limited.
Water pollution	G	↑	Point source pollution remains a threat to the quality of the water environment. This is closely monitored by SEPA. Licensed activities continue to increase year on year.
Flooding	P	↑	Severe weather events have resulted in increased flood incidents in the area. 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 although the proportion of surface water bodies with an overall status of high or good has slightly declined since the previous report. Annual water flow rates remain high and consistent in line with increasing precipitation across the region.

The number of flooding occurrences reported to the Council has significantly decreased since 2012 although there was a sharp rise in reported occurrences and flood scouting actions in 2015.

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 slopes 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 the huge Dalquhandy Opencast Coal Site. A tributary of the River Nethan, the Logan Water, is used to fill the Logan and Dunside reservoirs.

Principal watercourse	Span (km)	General information
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/West
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**). SEPA is the Enforcement Authority for these reservoirs under the Reservoirs (Scotland) Act, 2011, responsible for ensuring the Statutory Undertakers (owners) comply with their statutory requirements. 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 Cowgill Upper Reservoir	**0.03** **0.09**	Provides drinking water to the Lothians
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.

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.

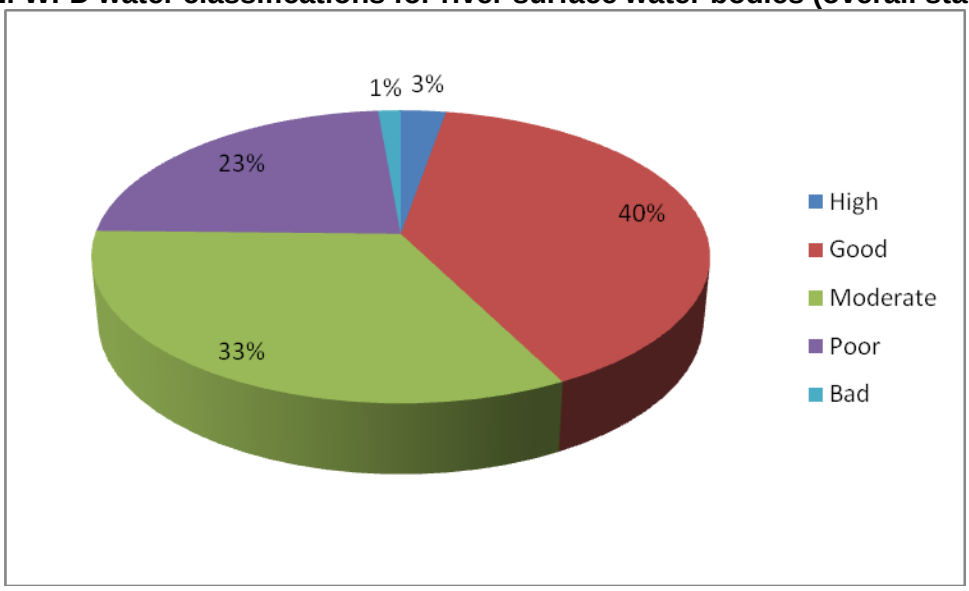
The WFD classification data for rivers across South Lanarkshire has been divided into Surface Water bodies and Heavily Modified Water bodies (HMWB) (**Table 8.5** and **Table 8.8** respectively). For surface water bodies, **43%** were classified with an overall status of either high or good, with **23**% being assessed as poor and only **1** recorded as bad (Malls Mire Burn/ Polmadie Burn/ City Burn on the River Clyde). The physico-chemical classification recorded **84%** of river 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 elements, with **53%** recorded as either high or good, **22%** as moderate and **23%** with a poor status. In terms of hydromorphology classification, **57** surface water bodies achieved either high or good status (**78%**). However, **1** was recorded as bad. These findings are further reflected in **Figure 8.1**.

Table 8.5 WFD water classifications for river surface water bodies (overall status), 2015

	Overall status		Physico-chemical		Biological element		Hydromorphology	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
High	**2**	**3**	48	66	19	26	8	11
Good	**29**	**40**	13	18	20	27	49	67
Moderate	**24**	**33**	9	12	16	22	15	21
Poor	**17**	**23**	3	4	17	23	0	0
Bad	**1**	**1**	0	0	1	1	1	1

Source: SEPA

Figure 8.1: WFD water classifications for river surface water bodies (overall status), 2015



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 HWMB, 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 2015 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, 2015

ID	Name	ID	Name
10002	Kittoch Water	10040	River Clyde (North Calder to Tidal Weir)
10043	Daer Water	10071	Wellshaw/Earnock Burn
10107	Culter Water	10108	Cow Gill/Eastside Burn/Duncan Gill
10117	Camps Water	10408	Avon Water/Glengavel Water
10930	Malls Mire Burn/Polmadie/Burn/Cityford Burn		

Of the river water bodies designated as heavily modified, **2** achieved good ecological potential in 2015 (Culter Water and Cow Gill). Malls Mire Burn was assessed as having bad ecological potential and Kittoch Water and Avon Water were both assessed as having poor ecological potential (**Table 8.7**).

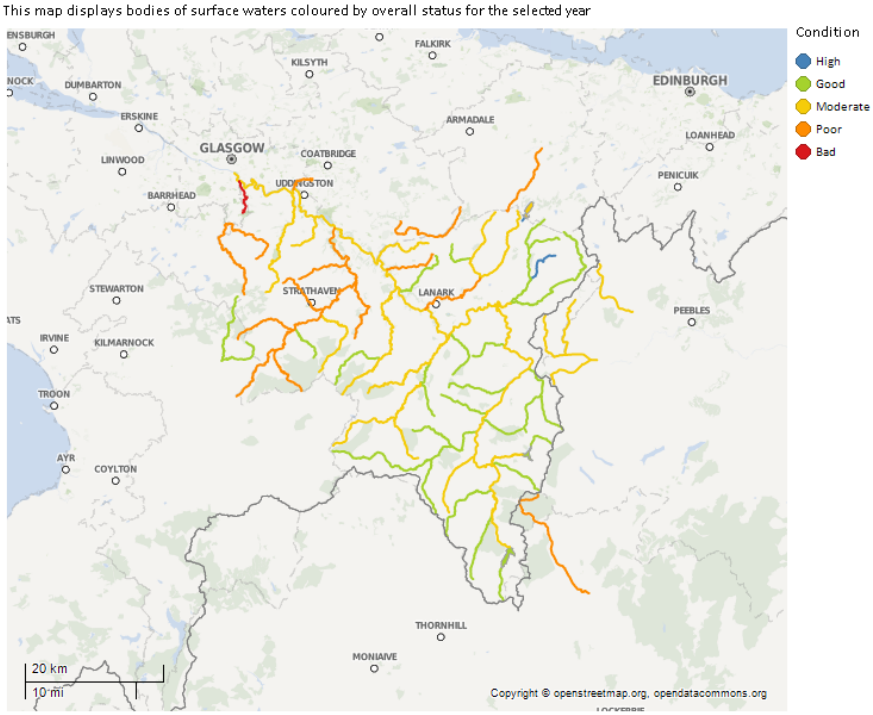
Table 8.7: WFD water classifications for HMWB in South Lanarkshire, 2015

Class	Overall Status (ecological potential)	Physio-chemical	Biological element	Hydromorphology
High	**0**	**0**	**2**	**0**
Good	**2**	**0**	**0**	**1**
Moderate	**4**	**1**	**4**	**7**
Poor	**2**	**2**	**2**	**0**
Bad	**1**	**0**	**1**	**1**

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 2015, in South Lanarkshire 2 water bodies achieved high status and **29** achieved good status/good ecological potential, while **56%** 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 water bodies in South Lanarkshire, 2015



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 km^2 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 been classified as having good ecological potential. Both reservoirs have poor hydromorphology, 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 good status for physico-chem, with Daer Reservoir being classed as having good biological elements and the Camps Reservoir being classified as high.

Table 8.8: WFD classifications in South Lanarkshire, 2015

Reservoir	Overall status	Physico-chem	Biological elements	Hydro-morphology
Daer	Good EP	Good	Good	Poor
Camps	Good EP	Good	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 Happendon	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 (Station no. 84005), near Bothwell and the upper contributory Duneaton Water at Maidencots (Station no. 84022), 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 km^2), allowing a greater degree of buffering.

Table 8.10: Annual mean water flow rates

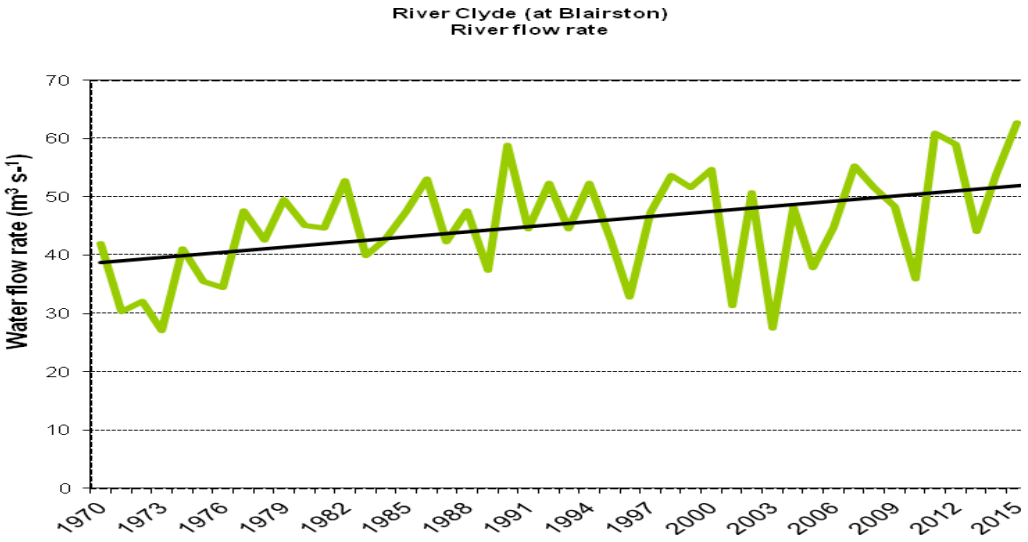
Year	River Clyde at Blairston		Duneaton Water at Maidencots	
	Annual flow (m^3 s^{-1})	Annual rainfall (mm)	Annual flow (m^3 s^{-1})	Annual rainfall (mm)
1970	42.00	1198	3.06*	1375
1971	30.36	936	2.55*	1060
1972	32.12	952	-	-
1973	27.09	875	2.02	1038
1974	41.13	1209	2.93	1637
1975	35.42	985	2.26*	1254
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

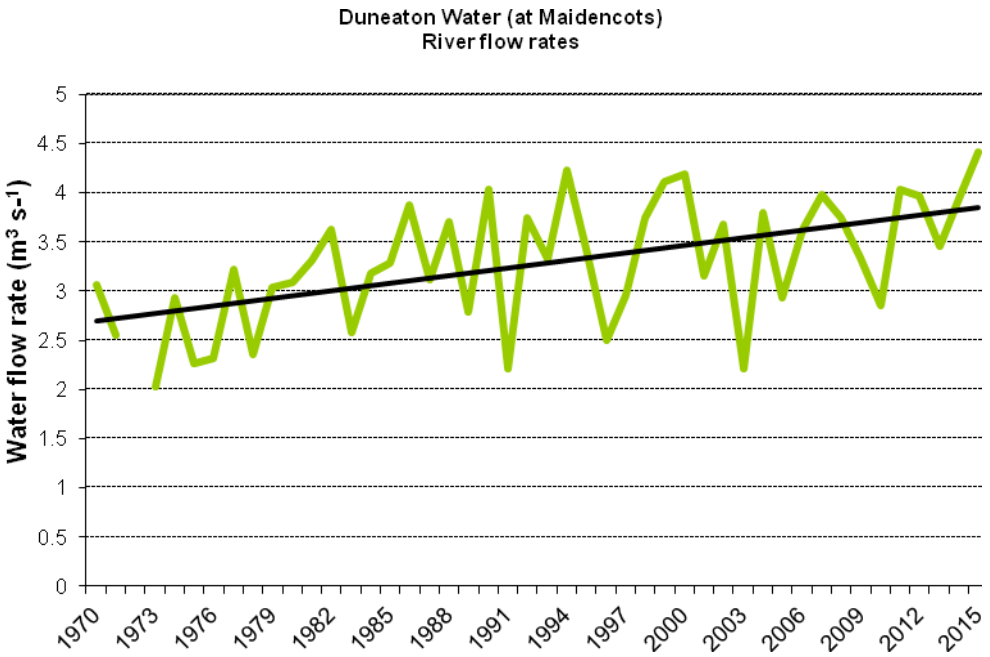
Year	River Clyde at Blairston		Duneaton Water at Maidencots	
	Annual flow (m^3 s^{-1})	Annual rainfall (mm)	Annual flow (m^3 s^{-1})	Annual rainfall (mm)
1987	42.32	1124	3.12	1285
1988	47.55	1221	3.71	1475
1989	37.37	1077	2.79*	1292
1990	58.80	1527	4.03	1783
1991	44.58	1211	2.21*	1430
1992	52.33	1366	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	35.89	924	2.85	1162
2011	60.91	Unavailable	4.03	Unavailable
2012	58.95	Unavailable	3.97	Unavailable
2013	44.09	Unavailable	3.46	Unavailable
2014	53.84	Unavailable	3.94	Unavailable
2015	62.70	Unavailable	4.41	Unavailable
2016	53.72**	Unavailable	3.21***	Unavailable

*Annual mean flow calculated using monthly mean data – limitations in data due to missing monthly data
** To 31 July 2016
***To 30 September 2016

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

Figure 8.3: Trends in annual mean water flow rates





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

8.4 Groundwater and wetlands

Groundwater

Groundwater is water under the surface of the land. At 2015, there were **37** groundwater water bodies within or intersecting South Lanarkshire which vary in area from just under 7km^2 to over 800km^2. Of these, **25** have an overall status of good, while the remaining **12** are classified with a poor status. This trend has remained consistent since 2012.

Ponds

The Countryside Survey defines ponds as 'a body of water between 25 m^2 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 and their further amendments:

- **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 2017, there are around **2,049** CAR authorisations in South Lanarkshire covering a range of operations and licensed activities. These include **1,709** Registration level activities, **194** simple licenses and **146** complex license activities. This includes authorisations held by Scottish Water for a number of discharges ranging from village septic tanks, waste water treatment works and their associated sewerage networks (**Figure 8.4)**.

Diffuse pollution

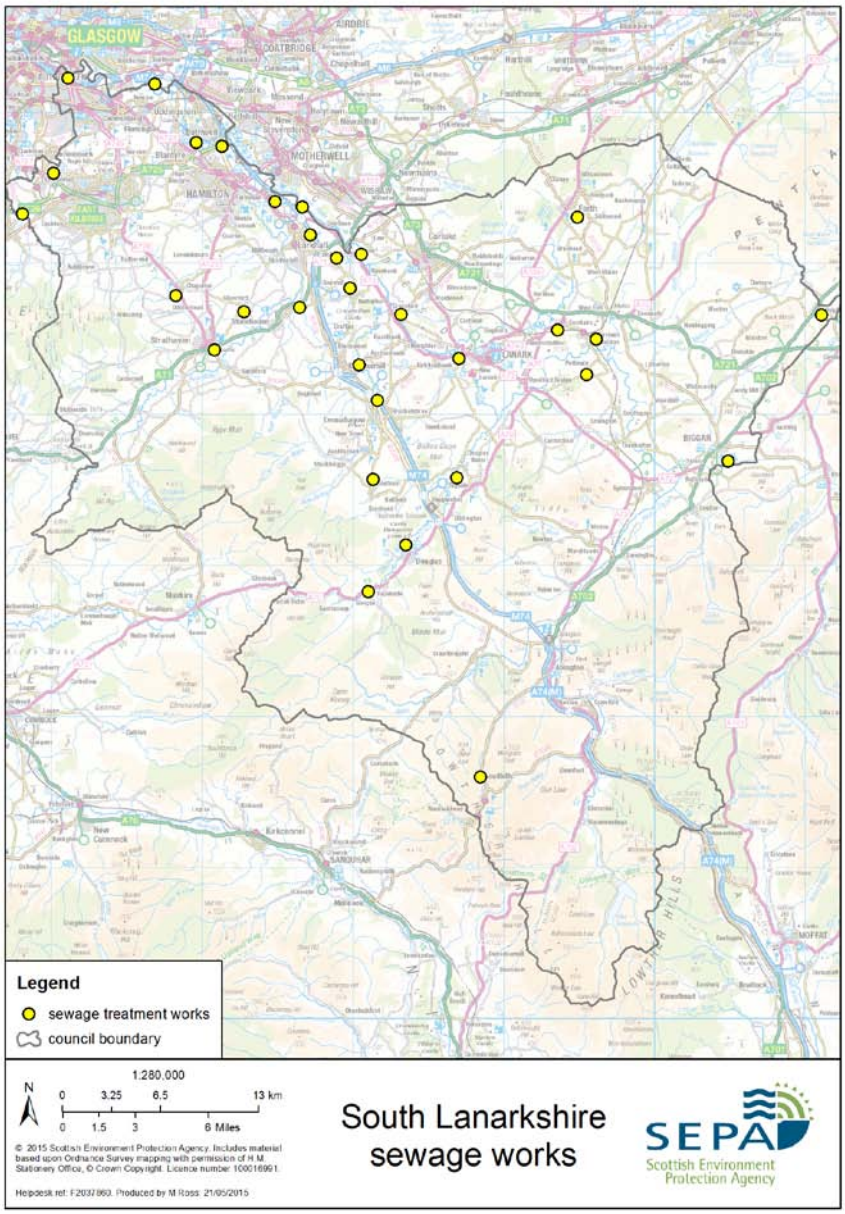
Diffuse pollution into water bodies (including ground-waters) is usually associated with land use, with agricultural activity and urban runoff the most significant causes. Diffuse pollution from agriculture is derived from heavy and inappropriate fertiliser use including ammonia release, field runoff 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.

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. In Scotland, there are five designated NVZs. None of these are in South Lanarkshire, however, the area does fall within zones identified for the catchments that drain to nutrient sensitive areas.

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



Source: SEPA

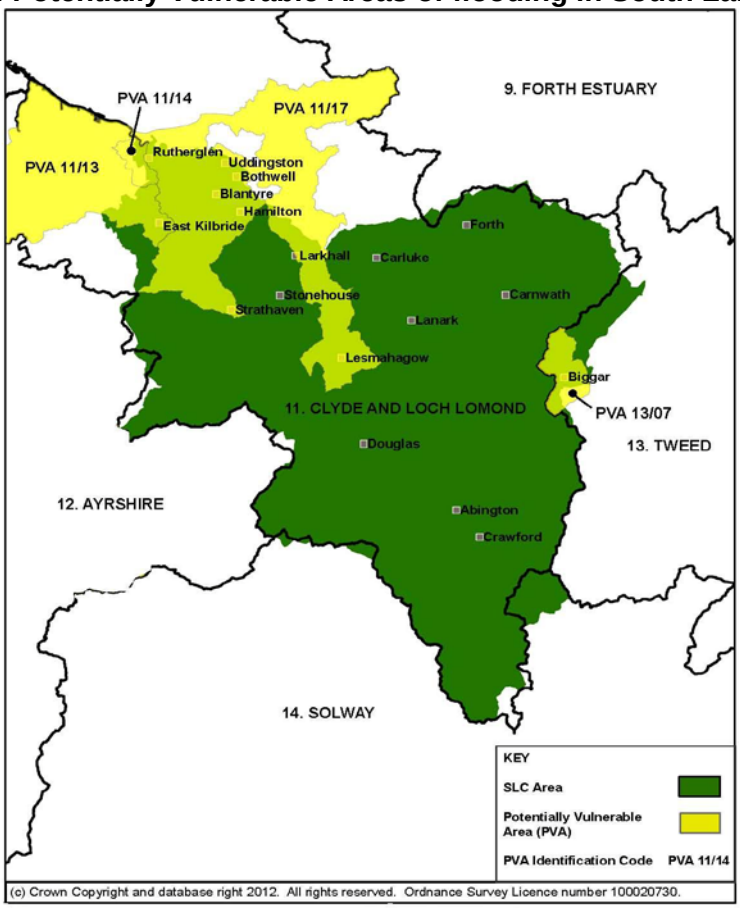
8.6 Flooding

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.

Figure 8.5: Potentially Vulnerable Areas of flooding in South Lanarkshire



Source: SEPA and South Lanarkshire Council

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.

Flooding incidents

In the nine years between 2007 and 2015 there have been 6,104 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 2015

	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**
2015	379	222	57	0	**658**

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 has 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. These procedures are activated by the Council's senior management in response to local weather conditions. From 1 April 2015 the thresholds for activating the Response to Flooding procedure were amended due to improvements in our flooding infrastructure and remote monitoring capabilities. The activation of the procedure is still dependent on forecast weather conditions. However, the level of action required at many sites has reduced due to these improvements.

Flood 'scouting' actions undertaken by the Council increased significantly between 2005 and 2009 before returning to more typical levels from 2010, There was a substantial rise in actions in 2015 (81) **(Figure 8.6)**.

Figure 8.6: Annual flood scouting actions undertaken by SLC 2000 – 2015

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:

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
Greenhouse gas emissions	G	↑	Carbon emissions continue to decrease in South Lanarkshire year on year. Emissions per capita are notably below the Scottish average.
Energy consumption	F	↑	Although both gas and electricity consumption continue to decrease in South Lanarkshire, the domestic consumption per household remains above the national average.
Transport emissions	P	↔	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	G	↑	South Lanarkshire's renewable energy capacity increased by 85% since 2011. The area is an energy exporter.
Environmental awareness	G	↑	The Council is preparing a new Sustainable Development and Climate Change Strategy. All schools are registered with the Eco-Schools programme and work to promote environmental awareness and sustainability in schools continues.

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 (CO_2), 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 an ambitious reduction target for greenhouse gas emissions for which South Lanarkshire must contribute as well as preparing and adapting to the impacts of climate change and enabling sustainable lifestyles.

Sustainable lifestyles in South Lanarkshire are supported in various ways, including through the Council's Sustainable Development and Climate Change Strategy, the Carbon Management Plan and the work of the Learning About Sustainability in Schools 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

At the United Nations Climate Conference in Paris in December 215, world leaders reached a landmark agreement to combat climate change and to accelerate and intensify actions and investments needed for a sustainable low carbon future. This agreement is known as 'The Paris Agreement'. The central aim of the Paris Agreement is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2^{o}C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5^{o}C. Additionally, the agreement seeks to build resilience and reduce vulnerability to the adverse effects of climate change.

The Climate Change (Scotland) Act, 2009 includes ambitious carbon reduction targets of 42% by 2020 and 80% by 2050 compared to 1990 levels. It places a requirement for Scotland to develop long term measures to adapt to changes in the climate which, according to the Intergovernmental Panel on Climate Change (IPCC), can be expected to occur even if global efforts to curb emissions are successful.

The Scottish Government is committed to delivering on the Paris Agreement and has announced proposals for a new Climate Change Bill, including a new ambitious 2020 target of reducing Scottish emissions by at least 56% and a 2050 target of 90%, based on 1990 levels.

The public sector has a crucial leadership role in the delivery of Scotland's climate change ambitions. The Climate Change Act places duties on public bodies to:

- Contribute to carbon emissions reduction targets.
- Contribute to climate change adaptation.
- Act sustainably.

Further to the duties contained the Act the Scottish Government introduced annual statutory reporting in 2016 for public bodies on their compliance with the climate change duties. The new reporting platform has improved the quality and consistency of climate change information reported across the public sector in Scotland. The reports and analysis are publicly available, thereby increasing accountability and transparency. The standardised format makes it easier for the public and other parties to understand an organisation's climate performance. This, in turn, is helping to improve leadership and engagement, while raising awareness of the impact of climate change with senior management in public bodies, ensuring climate change objectives are integrated into corporate business plans and actions embedded across whole public organisations.

The Council is a partner within Climate Ready Clyde. This is cross sector initiative which brings partners together to work strategically to minimise risks and seize opportunities climate change presents for the economy, society and environment in Glasgow and the Clyde Valley. Its aims are:

- People and communities benefit from actions to adapt to climate change.
- Adaptation helps to secure existing investment and generates new opportunities.
- To protect the area's natural environment and uses it to help adapt to climate change.

Climate Ready Clyde was established in 2016 and will operate until 2019. It is leading the development and co-ordination of a Climate Change Adaptation Strategy and Action Plan for Glasgow and the Clyde Valley. Funding is provided by the Scottish Government and eleven local partners, including healthcare providers, universities, transport providers and local authorities.

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 CO_2 and other Greenhouse gases 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%.

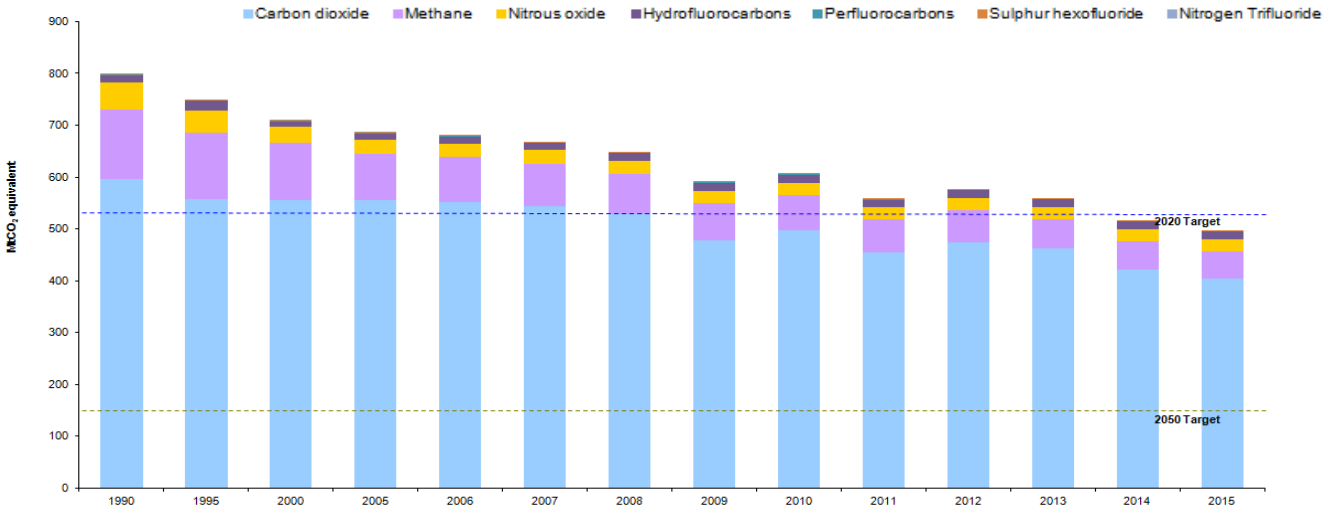
UK emissions

In 2015, UK emissions of the seven greenhouse gases covered by the Kyoto Protocol were estimated to be **495.7 million tonnes**[6] carbon dioxide equivalent. This was 3.8% lower than the 2014 figure of **515.1** million tonnes**.** Carbon dioxide, (CO_2) is the main GHG, accounting for 81% of total UK emissions in 2015, compared to 74% in 1990 (**Figure 9.1**). By sector, the energy supply sector accounted for 29% of emissions, transport (24%), business (17%), residential (13%) and 10% of emissions were from agriculture. The remaining 7% of emissions are attributable to the waste management, industrial processes and the public sector. The land use, land use change and forestry sector acted as a net sink in 2015 so emissions were effectively negative.

The largest decrease in emissions was in the energy supply sector (-12.3%) between 2014 and 2015 due to a large decrease in power station emissions, a decrease in the use of coal and more use of nuclear and renewables. There was a decrease in the waste management sector (-7.1%) because of a reduction in emissions from landfill sites.

The UK has met its emissions reductions targets for the first commitment period of the Kyoto Protocol (2008 – 2012) and is on track to meet its 2020 commitment.

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



Source: Department of Energy and Climate Change, 2017

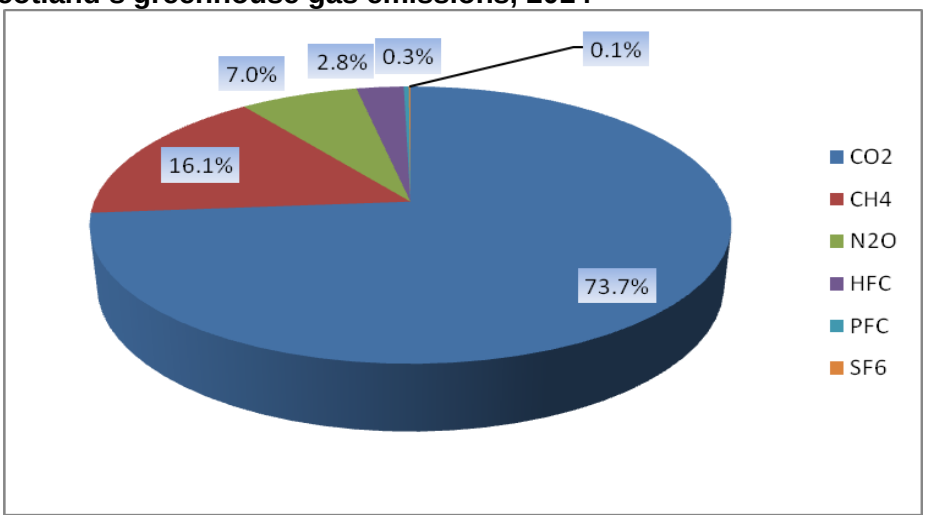
[6] Final UK greenhouse gas emissions national statistics: 1990-2015, Department of Energy and Climate Change, February 2017

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.

Scotland has an 8.6% share of total net greenhouse gas emissions in 2014. Its net emissions were estimated to by 46.7 million tonnes of carbon dioxide equivalent ($MtCO_2e$), 8.6% lower than 2013 and 39.5% below the 1990 level. Emissions in Scotland are also dominated by CO_2 (73.7%) with significant contributions from Methane (CH_4) (16.1%) and Nitrous oxide (N_2O) (7.0%). The contributions from Hydrofluorocarbons (HFC) (2.8%), Perfluorocarbons (PFC) (0.3%) and Sulphur hexafluoride (SF_6) (0.1%) are relatively small (**Figure 9.2**).

Figure 9.2: Scotland's greenhouse gas emissions, 2014



Source: The Scottish Government

In Scotland the main source of greenhouse gas emissions is energy supply, which seen a sharp fall in 2013 (15.98 $MtCO_2e$) and 2014 (13.85 $MtCO_2e$). This is partly due to the closure and mothballing of power stations which resulted in energy supply emissions being 0.9 $MtCO_2e$ higher than emissions from transport (including aviation and shipping). There has been a small overall reduction between 1990 and 2014 of emissions from transport. Residential emissions in 2014 (5.88 $MtCO_2e$) were the lowest since 1990 (7.95 $MtCO_2e$), related to the warmer external temperatures in that year. Overall, there has been a 30.5 $MtCO_2e$ (39.5%) decrease in net emissions between 1990 and 2014 and a 4.4 $MtCO_2e$ (8.6%) decrease in net emissions between 2013 and 2014.

South Lanarkshire emissions

There are no local data sources that provide information for all the GHG emissions within South Lanarkshire. The local CO_2 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 26.1% from 2,376.6 kt Co_2 in 2005 to **1,756.7 kt Co_2** in 2015. Over the same period, emission per capita fell by 27.3% from 7.7 tCO_2 to **5.6 tCO_2** (**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.

Domestic emissions are directly related to household energy consumption which accounts for **34.1%** of the local CO_2 emission estimates (**598.9 kt CO_2**). 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 2015 of **34.9%**. The levels of CO_2 emissions from the transport sector have not fallen significantly with reduction in emissions of only **6.5%** from 2005 to 2015.

Table 9.1: Local CO_2 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	806.5	861.2	701.8	7.2	2,376.6	**7.7**	9.0
2006	835.3	864.9	703.9	2.8	2,407.0	**7.8**	9.0
2007	793.4	846.5	712.1	-8.1	2,343.8	**7.6**	8.8
2008	787.8	855.3	681.5	-25.3	2,299.3	**7.4**	8.5
2009	639.6	768.4	666.2	-26.3	2,047.9	**6.6**	7.6
2010	666.0	814.9	660.4	-10.3	2,131.0	**6.8**	8.0
2011	600.7	723.7	646.2	-11.8	1,958.8	**6.2**	7.4
2012	622.2	775.7	647.2	-5.7	2,039.4	**6.5**	7.7
2013	586.1	750.6	642.8	-24.1	1,955.4	**6.2**	7.2
2014	511.5	623.6	648.4	-35.1	1,748.3	**5.5**	6.2
2015	525.2	598.9	656.3	-23.8	1,756.7	**5.6**	6.1
% reduction (2005- 2015)	**-34.9%**	**-30.5%**	**-6.5%**	**230.6%**	**-26.1%**	**-27.3%**	**-32.2%**
*overall carbon removal from soils, forestation and land use							

Source: DECC

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 CO_2 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	795.9	2.6	861.2	2.8	397.8	1.3	**2,055.0**	**6.7**
2006	824.8	2.7	864.9	2.8	406.1	1.3	**2,095.8**	**6.8**
2007	782.3	2.5	846.5	2.7	411.1	1.3	**2,039.8**	**6.6**
2008	779.5	2.5	855.3	2.7	390.9	1.3	**2,025.6**	**6.5**
2009	630.5	2.0	768.4	2.5	384.8	1.2	**1,783.7**	**5.7**
2010	657.6	2.1	814.9	2.6	382.2	1.2	**1,854.6**	**5.9**
2011	591.8	1.9	723.7	2.3	371.7	1.2	**1,687.1**	**5.4**
2012	614.4	1.9	775.7	2.5	364.7	1.2	**1,754.8**	**5.6**
2013	573.5	1.8	750.6	2.4	359.8	1.1	**1,683.9**	**5.3**
2014	502.7	1.6	623.6	2.0	363.8	1.1	**1,490.1**	**4.7**
2015	516.9	1.6	598.9	1.9	366.7	1.2	**1,482.4**	**4.7**
% decrease 2005-2015	**-35.1%**	**-38.5%**	**-30.5%**	**-32.1%**	**-7.8%**	**-7.7%**	**-27.9%**	**-29.9%**

Source: DECC

Emissions within this subset decreased by **29.9%** between 2005 and 2015 compared to a reduction of **27.3%** for Scotland over the same period. On a per capita basis emissions have also significantly decreased from **6.7 t CO_2** in 2005 to **4.7 t CO_2** in 2015, notably lower than the Scottish per capita of 5.5 t CO_2 in 2015.

The transport sector has not demonstrated the same level of reductions as others, with emissions only reducing by **7.8%** since 2005. The biggest reduction has taken place within the industry and commercial sector (-**35.1%**).

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 2016 – 2017 were **110.894 tCO_2**, 28.9% 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	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Buildings (electricity, gas, oil)	69,427	64,901	70.857	64.902	59,821	59,162	56,271
Waste (municipal)	61,320	46,741	45.334	46.724	41,392	39,072	37,297
Fleet	10,418	9,704	9,338	9,760	9,789	9,511	9,148
Street lighting	13,005	12,986	13.020	13.841	13,509	11,895	7,549
Employee travel	1,795	924	891	789	692	635	630
Total	**155,965**	**135,256**	**139.441**	**136.015**	**125,202**	**120,276**	**110,894**
Tonnes saved from baseline	-	20,709	16,524	19,950	30,762	35,689	45,071
Variation to baseline		**-13.3%**	**-10.6%**	**-12.8%**	-19.7%	-22.9%	-28.9%
Employee numbers	16,521	14,800	15.188	15.055	14,737	14,670	14,459
CO_2 tonnes/ employee	9.4	9.1	9.2	9.0	8.5	8.2	7.7

9.3 Energy

Scottish production

Electricity generation from the combustion of fossil fuels is a major contributor to CO_2 emissions in Scotland. In order to deliver its 80% reduction target for CO_2 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.

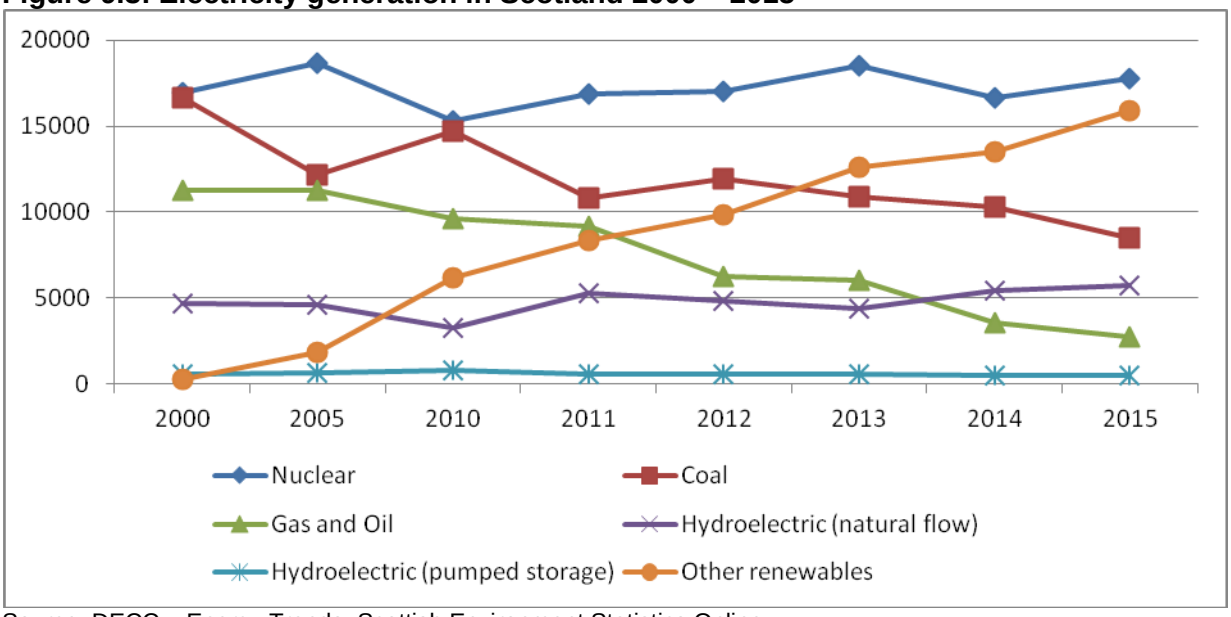
In 2013, for the first time, the main sources of electricity generated in Scotland were renewable, including wind, wave and solar energy (**17,569 GWh**). In 2015, Scotland generated **51,200 GWh** of electricity (**Table 9.4**). Of this total, **22,150 GWh** (**43.3%)** was generated from renewable sources, an increase of 4.3% from 2014. The combustion of fossil fuels accounted for **22.0%**, with coal, gas and oil providing **11,287 GWh**, a significant reduction of 10% from 2013 **(Figure 9.3**).

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

Source	2000	2005	2010	2011	2012	2013	2014	2015
Nuclear	16,918	18,681	15,293	16,892	17,050	18,498	16,633	17,763
Coal	16,624	12,158	14,730	10,793	11.934	10,862	10,310	8,538
Gas and oil	11,275	11,270	9,601	9,195	6,242	6,035	3,546	2,749
Hydroelectric (natural flow)	4,665	4,613	3,256	5,319	4,838	4,363	5,436	5,757
Hydroelectric (pump storage)	613	643	779	604	610	620	494	523
Other renewables	306	1,874	6,209	8,367	9,847	12,586	13,526	15,870
Total generated	**50,401**	**49,246**	**49,867**	**51,170**	**50,520**	**52,963**	**49,944**	**51,200**

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

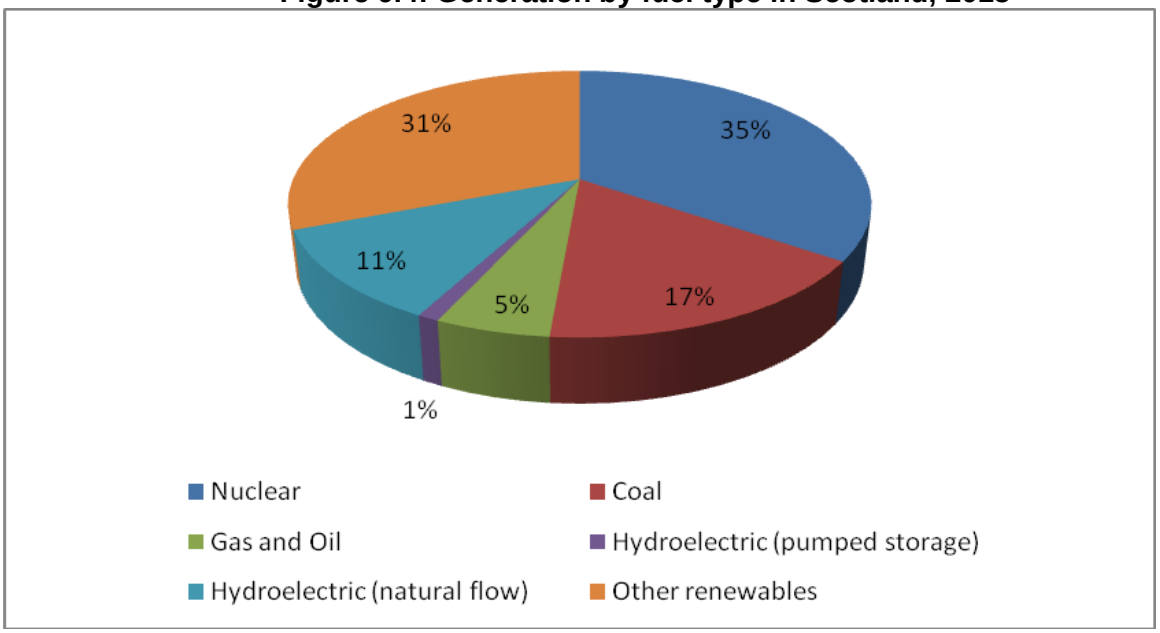
Figure 9.3: Electricity generation in Scotland 2000 – 2015



Source: DECC – Energy Trends: Scottish Environment Statistics Online

Scotland generated **43.3%** of electricity from renewable sources (including hydroelectric pumped storage) in 2015 (**Figure 9.4**). This is a significant increase from 2009 (25%), 2011 (28%) and 2013 (33.1%).

Figure 9.4: Generation by fuel type in Scotland, 2015



Source: DECC

Local consumption

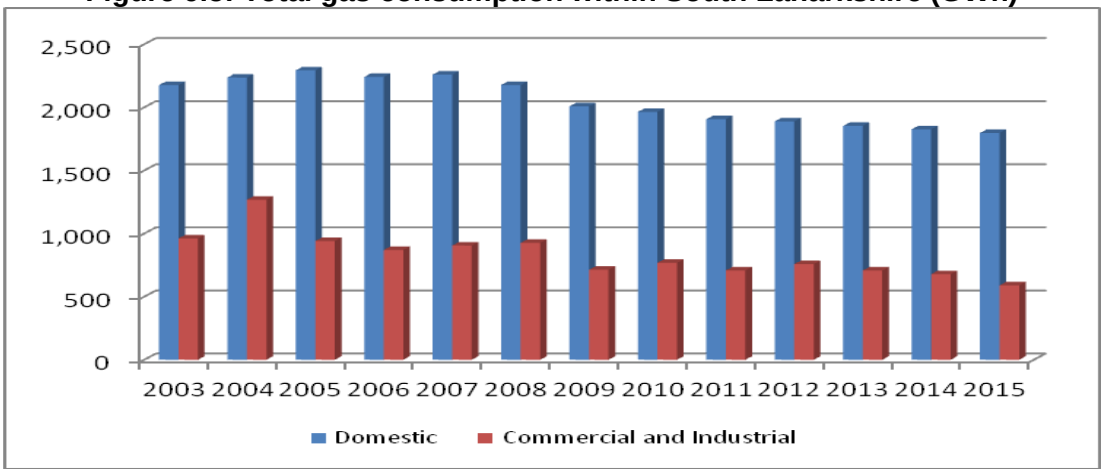
Local CO_2 emission estimates for South Lanarkshire demonstrate that energy use through the consumption of gas, electricity or transport fuel are the main emitting sources for greenhouse gas emissions. Therefore, it is essential to consider these sources within the context of South Lanarkshire's contribution to climate change. One element of reducing greenhouse gas 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 **17.4%** in gas consumption between 2003 and 2015. In the industrial and commercial sector, the decrease has been greater at **38.6%**. In 2015, South Lanarkshire's domestic gas consumption rate fell again to **1,797 GWh**. However, the domestic consumers are the 5th largest users in Scotland, illustrating a high dependency for gas in heating homes across the area.

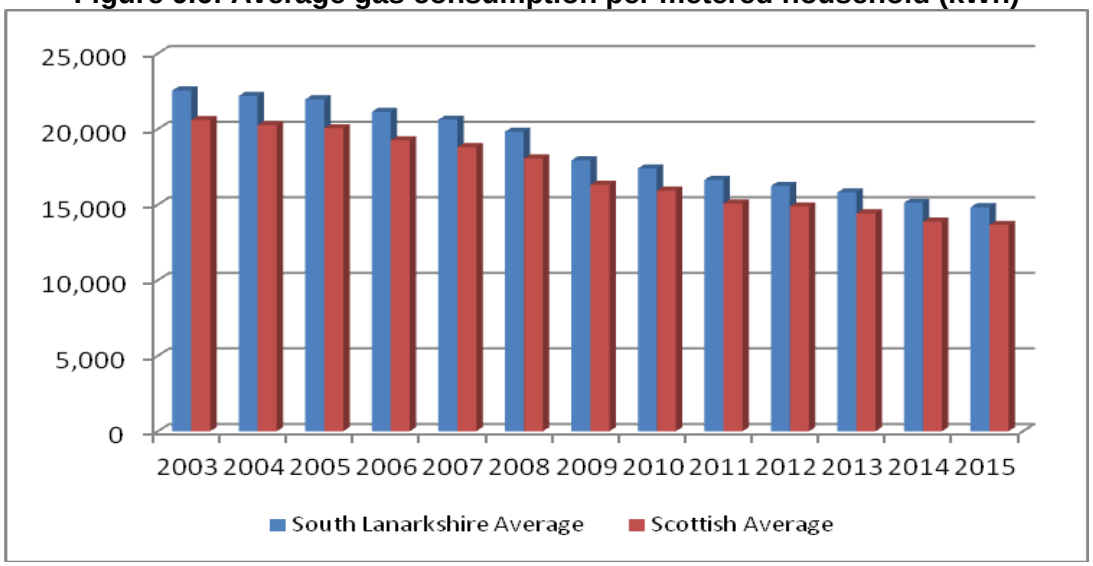
Figure 9.5: Total gas consumption within South Lanarkshire (GWh)



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 2015, there has been a reduction of **34%** in gas consumption both locally and nationally to current consumption levels of **14,819 kWh** and **13,655 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)

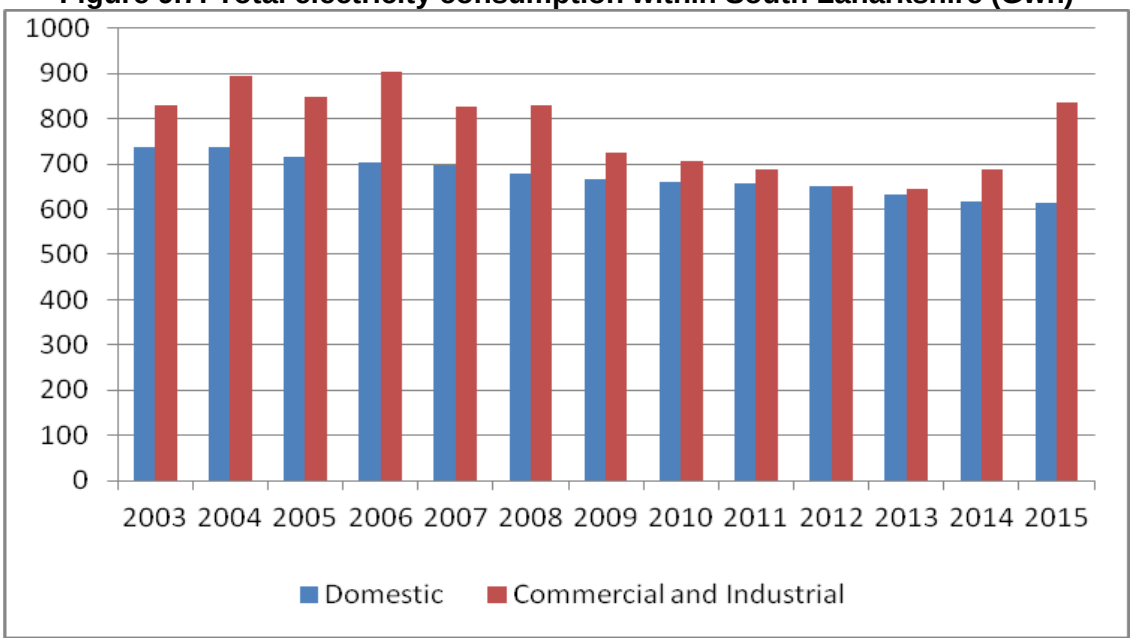


Source: DECC

Electricity

Electricity consumption in South Lanarkshire has steadily reduced in the domestic sector since 2003 as set out in **Figure 9.7**. This trend was also evident in the industrial and commercial sector to 2013. In 2012, the gap between the industrial and commercial and the domestic sectors had all but closed but in 2014 and 2015 there was a sharp increase in consumption in the industrial and commercial sector. In the domestic sector there has been a decrease of 16.6% in electricity consumption between 2003 and 2015. In the industrial and commercial sector there has been an overall increase of 0.6% in the same period.

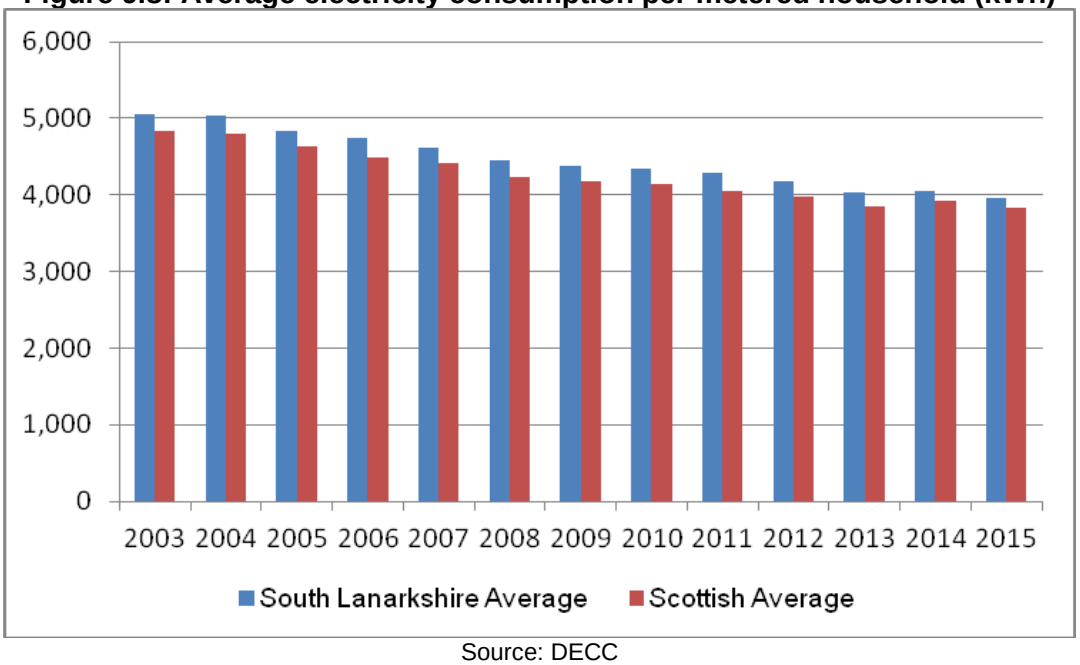
Figure 9.7: Total electricity consumption within South Lanarkshire (Gwh)



Source: DECC

In 2015, the South Lanarkshire average domestic consumption rate per metered household (**3,966 kWh**) was higher than the Scottish average of **3,836 kWh** (**Figure 9.8**). The overall trend for electricity consumption continues to be a reduction in usage, although there was a slight increase in 2014. In 2015, South Lanarkshire had the 16th highest consumption rates of all Scottish local authorities.

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

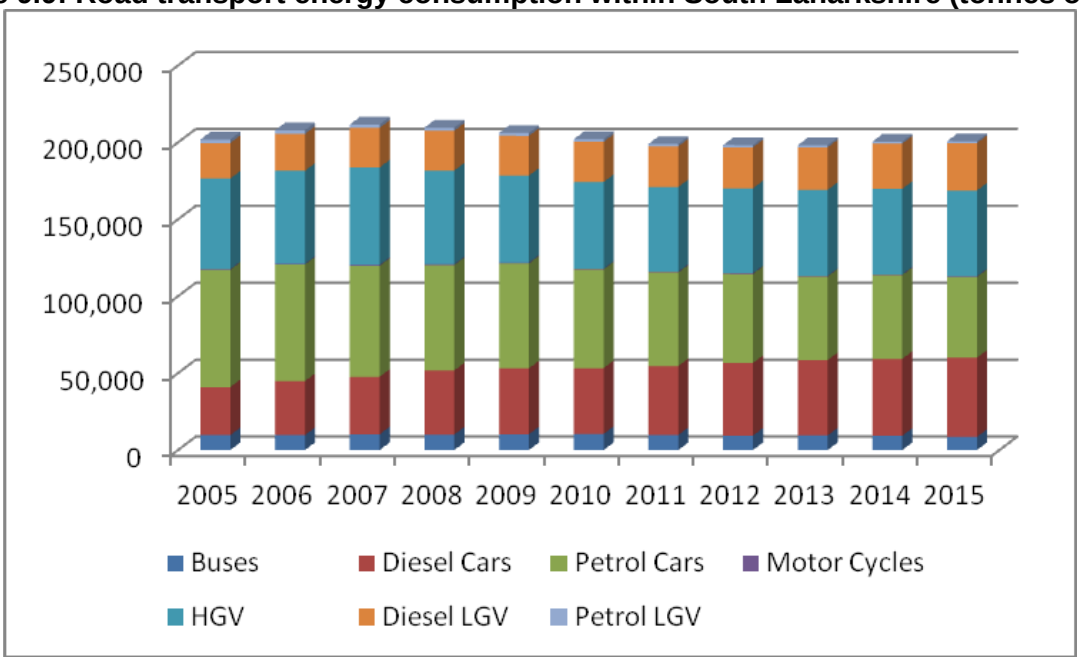


Source: DECC

Road and transport fuel

Vehicle emissions are a major source of atmospheric pollutants including nitrogen oxides (NO_x), carbon monoxide (CO) and CO_2. The total road and transport fuel consumption in South Lanarkshire fell by **0.6%** from **201,929 t** in 2005 to **200,788 t** in 2015 and by **5.1%** between 2007 (**211,633 t**) and 2015 **Figures 9.9 and 9.10**).

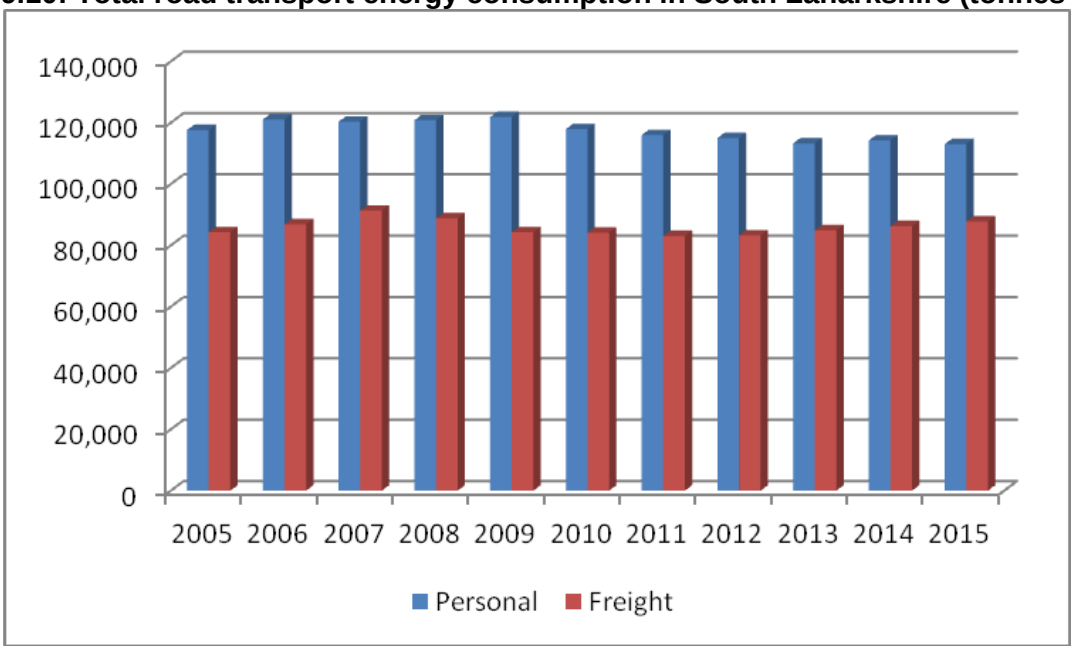
Figure 9.9: Road transport energy consumption within South Lanarkshire (tonnes of fuel)



Source: DECC

Diesel fuel consumption in private cars increased significantly from **31,236 t** in 2005 to **51,471 t** in 2015 **(+65.8%)**. At the same time, petrol fuel consumption from private cars reduced significantly from **76,220 t** in 2005 to **52,485 t** in 2015 **(-31.1%)**. Overall, however, private car fuel consumption fell by **3%** between 2005 and 2015. During the same period fuel consumption by buses significantly decreased by **11.8%** whereas fuel consumption by freight increased by **4.1%**.

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 CO_2 emissions. The Scottish Government has set clear targets for renewable electricity, with 100% of Scottish electricity consumption supplied from renewable sources by 2020. In 2011, electricity generated in

Scotland by renewable sources equated to 28%, rising to 49.6% in 2014. In 2016, the Scottish Government reported that provisionally, renewable sources generated **54.0%** of gross electricity consumed, meaning that the 2015 50% renewable energy target was achieved.

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 24% of total UK renewable generation in 2016 (previously 32% in 2013 and 29% in 2014). The amount of electricity generated in Scotland by renewable sources continues to increase. Indeed, since 2006, annual renewable electricity generation has more than trebled.

Other key renewable electricity generation figures for Scotland at 2016[7] are:

- Renewable electricity generation in Scotland was 19,658 GWh, down 9% from 21,627 GWh in 2015 which was a previous record year for renewables.
- Wind generation was 12,539 GWh, down 9.0% on 2015 (previous record year for wind). This is more than six times the level of wind generation in 2006.
- Hydro generation in 2016 was 4,945 GWh, down 14% on 2015 (previous record year for hydro).
- At March 2017, there was 9,309 MW of installed renewable electricity capacity in Scotland, an increase of 16% (1,253 MW) from March 2016 and an increase of 25% compared to March 2015.

At March 2017, Scotland had 9.3 GW of installed renewable electricity generation capacity, with an additional 6.3 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 21.1 GW, over double the level currently deployed.

South Lanarkshire area's capacity

Government legislation, national greenhouse gas 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 photovoltic 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.

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

There are **5** hydro-electric stations within South Lanarkshire, comprising of the Lanark Hydro-electric Scheme (Bonnington and Stonebyres Power Stations) and the smaller hydro stations at Blantyre, Camps Reservoir and Dripps Mill. The total operating capacity from hydro-electric in South Lanarkshire is currently **18,048 MW** (**Table 9.5**).

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
Camps Mini Hydro Power Station	Camps Reservoir, Camps Water Treatment Works, near Crawford	Scottish Water	0.043
Dripps Mill	Dripps Mill, Waterfoot Road, Thorntonhall	Alexander's Discretionary Trust	0.030
Total Operating Capacity			**18.048**

Source: www.scottishpower.co.uk/www.natwindpower.co.uk/South Lanarkshire Council

South Lanarkshire has proved to be an attractive location for wind energy developments. At December 2017, there were **17** operational or under construction wind farms and **10** schemes with planning consent, which, in total, could deliver an output of **1,555MW (Table 9.6)**. In addition, there are undetermined applications with the potential output of 1**55MW**.

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	11	34
Clyde Windfarm	South East of Abington	Scottish Southern Energy (SSE)	152	350
Clyde Extension	North East of Clyde Wind Farm	SSE Renewables	51	162
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
Dungavel	South West of Strathaven	Eon Renewables	13	30
Andershaw	South of Douglas	Andershaw Wind Farm Ltd	11	42
Galawhistle	West of Douglas	Infinis	20	50
Auchrobert	West of Lesmahagow	Falck Renewables	12	48
Total operating capacity			**448**	**1073**
Under construction				
Kype Muir	South of Strathaven	Banks Renewables	26	88
Middle Muir	North of Crawfordjohn	Banks Renewables	15	68
Potential operating capacity			**41**	**156**

Name	Location	Operator	No. of Turbines	Potential Output MW
Planning consented (subject to Section 75 Agreement)				
Penbreck	South of Glespin	Brookfield	6	18
Dalquhandy	South West of Coalburn	Hargreaves	15	45
Crookedstane	Adjacent to Clyde Wind Farm near Watermeetings	2020 Renewables	4	9.2
Lion Hill	Adjacent to Clyde Wind Farm near Watermeetings	2020 Renewables	4	9.2
Kennoxhead	South of Glespin	Brookfield	19	64
Broken Cross	North West of Douglas	Hargreaves	7	21
Douglas West	North East of Douglas	3R Energy	15	45
Cumberhead	South and West of Coalburn	Cumberhead Wind Energy Ltd	11	33
Bankend Rigg II	South West of Strathaven	Wilson Renewables II LLP	3	10
Kype Muir Extension	South of Strathaven	Banks Renewables	15	72
Potential operating capacity			**99**	**326.4**
Total potential output in South Lanarkshire area			**588**	**1,555.4**

Source: South Lanarkshire Council

The operating and consented schemes can potentially meet the electricity needs of over 540,000 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 2017, there were **337** 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, 48 schools had biomass boilers fitted between 2009 and 2017. A sheltered housing complex also had a biomass boiler installed. In total, the biomass boilers installed by the Council have an operating capacity of **6.945 MW,** a significant increase from 2012 when the overall operating capacity for biomass boilers fitted by the Council was 2.687 MW. At March 2017, the current overall renewable generating capacity in South Lanarkshire is in excess of **956 MW**, a significant increase from 2015 (**24.9%**) when the overall capacity was 765.67 MW and significantly greater than in 2011 (**84.7%**) 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 (EESSH) 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 build Council housing, of which it has committed to delivering 1,000 new homes by 2022.

A priority for the Local Housing Strategy is to improve the energy efficiency of existing homes across all tenures. The direct outcome is to increase heat retention in homes and, therefore, reduce wasted energy use. This also addresses climate change as homes require less energy to maintain heat which can significantly reduce the amount of energy used and, therefore, carbon emissions. As well as improving housing energy efficiency, a key priority for the LHS is to support and enable more homes to shift towards low-carbon energy, such as through investment in solar photovoltaic and air-source heat pump technologies.

For existing private sector homes, the Council seeks continually to attract new funding and resources and has previously 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 the past four years, over £15million has been secured for improvements to over 1,700 hard-to-treat, private sector homes which are projected to save over 260,000 tonnes of carbon as well as significant fuel cost savings over the lifetime of the investment.

The extent of investment in housing energy efficiency across all tenures is shown in the improvements measured by the most recent Scottish House Condition Survey (SHCS) Local Authority findings (2013 – 2015), South Lanarkshire has an average SAP energy rating of 65.3 compared with 64.0 for Scotland, and less than 1% of all buildings have a poor energy rating (Band F-G) compared to over 3% for Scotland. One of the most significant outcomes and encouraging areas of progress is in reducing the impact of fuel poverty in South Lanarkshire. The SHCS measures average income in South Lanarkshire as similar to Scotland (around £26,500 per year). However, South Lanarkshire has the third lowest rate of fuel poverty of all Scottish local authority areas, 26% compared with an average of 34% across Scotland. This is an indication of the impact of investment in and improvements made to the energy efficiency of housing.

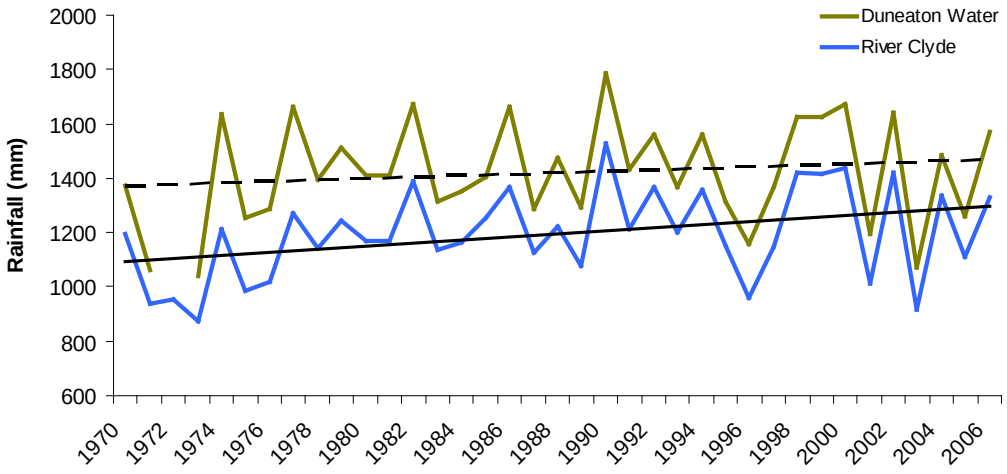
9.6 Potential impacts of climate change

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^{o}C to 2.6^{o}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

It is recognised we are living well outwith our global environmental limits with current lifestyles placing an increasing burden on the planet and our natural resources. The depletion of natural resources is not only damaging to the environment both globally and locally but also for people and the economy. A healthy environment provides us with natural resources like clean air, clean water, fertile soils, food, energy, medicine and building materials. Our long term economic and social wellbeing ultimately depends on the environment and our natural resources. Sustainable

development is about achieving economic and social development in a way that also enables us to protect and enhance our environment both now and for the future.

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'.

Sustainable development is a set of fundamental value by which we make decisions and how we chose to live. These values are outlined in the 17 Global Sustainable Development Goals of the United Nations 2030 Agenda for Sustainable Development as set out in **Figure 9.12**.

Figure 9.12: United Nations Sustainable Development Goals

Sustainable development and climate change are both reflected in South Lanarkshire Council's plans and policies and are considered in its service delivery activities.

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 continue to explore 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.

If you want the future to be as smooth as a cushion,
Free from pollution,
Well here's the solution,
If you want your country to be more attractive,
Get out your car and travel active.

Active Travel Rap by Junior, David, Francis, Orlaigh, Luke and Katie, P6/7 pupils at St Vincent's Primary School, East Kilbride. Participants at the Active Travel/Air Quality Workshops commissioned by South Lanarkshire Council, 2017

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 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. The Eco-Schools programme helps to motivate young people and offers them opportunities to help protect their environment. The 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 raises awareness of environmental and sustainable development issues throughout activities linked to curricular areas.

The aim of the programme, which is managed by Keep Scotland Beautiful, 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 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.

In Scotland there are 3,737 schools 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 (2016)

Organisation	Registered	Eco-School status				Green Flag status	
		Bronze		Silver			
		No.	%	No.	%	No.	%
Primary	125	103	82.4	97	77.6	61	48.8
Secondary	18	12	66.7	11	61.1	5	27.8
Additional Needs	7	6	85.7	5	71.4	3	42.9
Nurseries*	60	37	61.7	29	48.3	17	28.3
*Includes: Independent school nurseries, Early Year partnership providers and Council nurseries							

Source: South Lanarkshire Council/Keep Scotland Beautiful

Good progress has been made in the programme in South Lanarkshire in comparison with 2014/ 2015 figures. All sectors have seen an increase in the number achieving Green Flag status, with an overall percentage increase of establishments achieving this award from 36% to **41%**. The Early Years and Secondary sectors had the greatest increase, from about 12% to **28%** achieving

Green Flag status. The number of establishments achieving silver status also increased from about 65% to **68%**. All local authority schools continue to hold registration for the programme.

The John Muir Award

During the academic year 2015 – 2016 **11** schools in South Lanarkshire have been involved in the John Muir Award. In this period, a total of **547** awards have been made, including **94** Inclusion Awards. The John Muir Award is used to help deliver Curriculum for Excellence outcomes and demonstrates Learning for Sustainability in action. Pupils are involved in taking responsibility for nature in school grounds and communities. It helps to reinforce healthy behaviours and improves wellbeing and educational attainment.

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	↑	The condition of the road network continues to improve due to additional funding from the Council's Roads Investment Plan.
Traffic growth	G	↔	Road traffic growth is slowly increasing linked to economic improvements.
Congestion	G	↓	There has been a decrease in residents experiencing congestion compared to baseline figures but an increase over recent years. This was largely due to major road improvement works across the area.
Road safety	G	↓	Although the Council 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** – The percentage of people travelling by bus has fallen since 2009/2010. This trend is replicated across Scotland.
	G	↑	**Rail** – There is 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 and cycling. The Council is implementing its Cycling Strategy and 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 **2,295 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 **1,348 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

Year	South Lanarkshire	Scotland Average	Year	South Lanarkshire	Scotland Average
2016/2017	33	36	2009/2010	37	36
2015/2016	34	37	2008/2009	37	34
2014/2015	34	37	2007/2008	39	37
2013/2014	36	37	2006/2007	51	47
2012/2013	37	36	2005/2006	49	42
2011/2012	38	36	2004/2005	48	42
2010/2011	38	36	2003/2004	53	45

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 49% of the South Lanarkshire road network since its introduction in 2008. In 2015/2016 we resurfaced 6.2% of our road network. Improved roads range from local residential streets to strategic A class routes.

In the last decade, 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 improved 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.

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 20 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. In 2016, approximately **15%** of the Council's strategic monitoring sites experienced a reduction in traffic growth with **85%** of sites increasing in traffic growth. This compares to 28% in 2015.

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 and the Cathkin Relief Road which were both completed in 2017.

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.
- 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%** and reduced to **85.4%** and **78.2%** in 2013 – 2014 and 2014 – 2015, respectively. However, this coincided with the improvement works to the M74/A725 Raith Interchange which had a significant impact on journey times.

10.5 Road safety

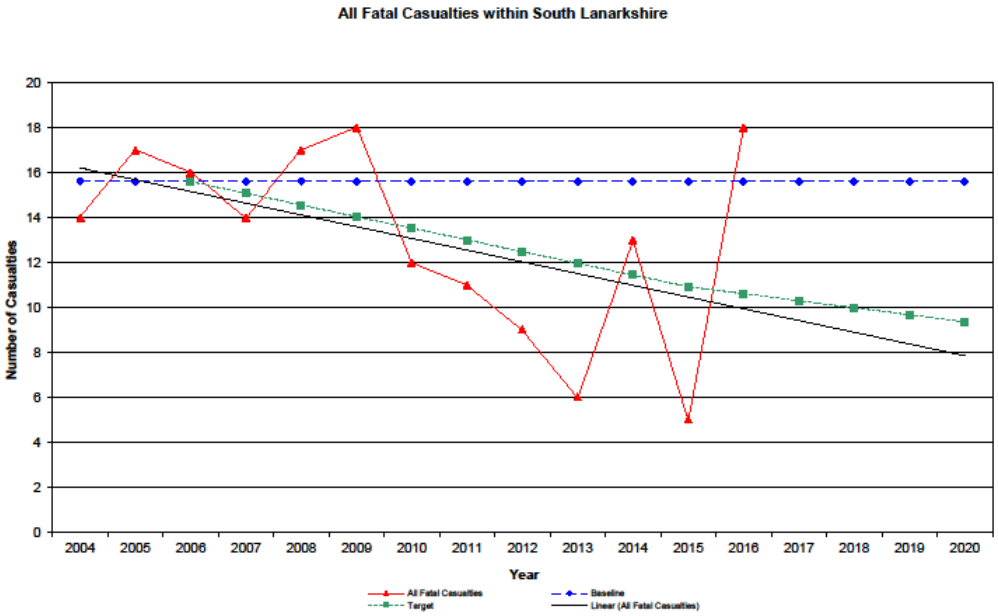
As a local Roads Authority, the Council has a duty to manage and maintain safe local public roads, footways, street lighting, street furniture and the power to improve infrastructure as necessary. This is achieved through road safety engineering and education, accident investigation and prevention as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

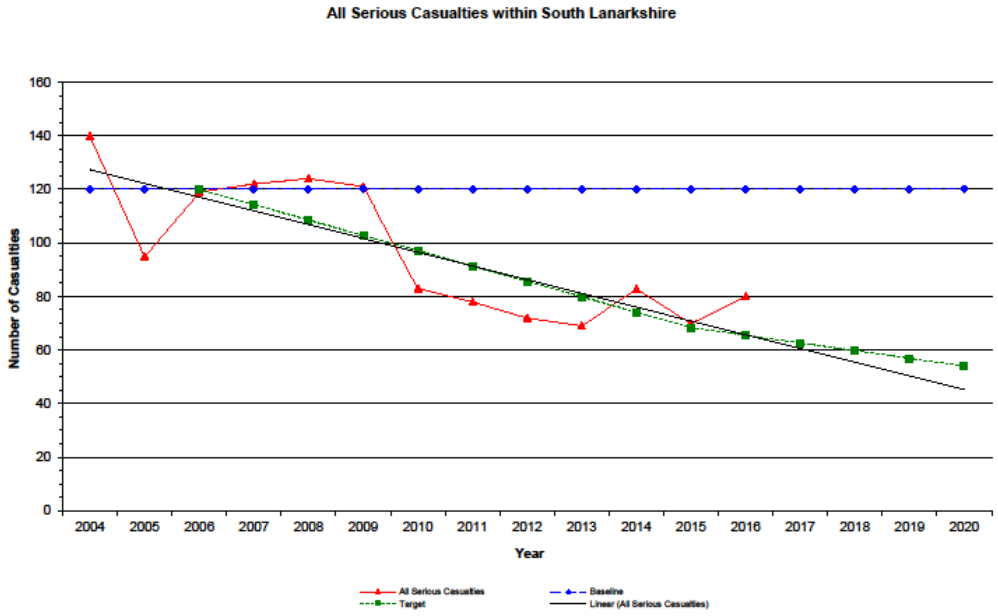
The Scottish Government has set casualty reduction targets to 2020. Based on the average number of casualties from 2004 to 2008, these targets are a 40% reduction in road deaths and a 55% reduction in serious injuries, with the equivalent targets for children being 50% for deaths and 65% for serious 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 – 2016)



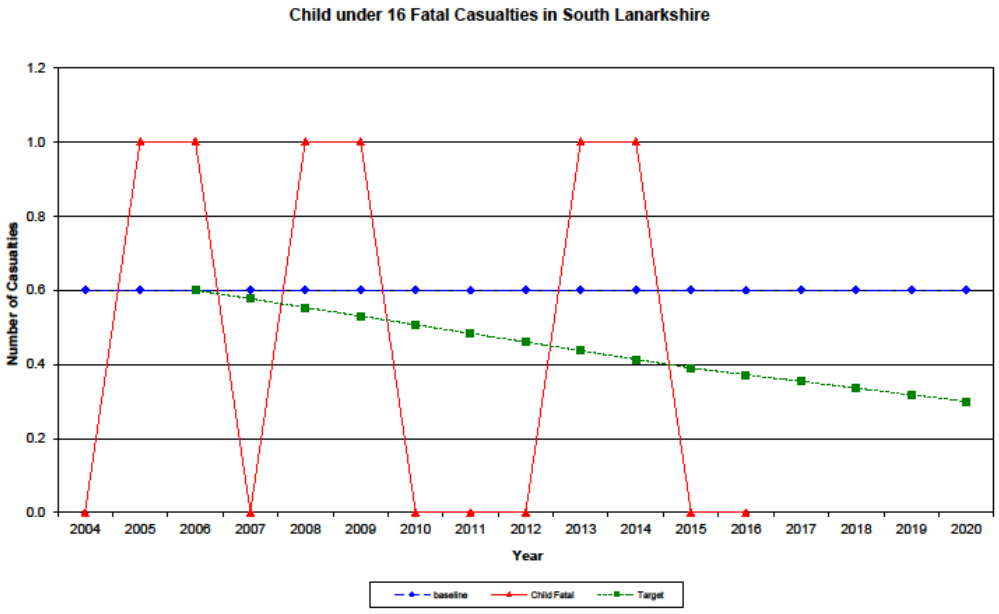
Source: South Lanarkshire Council

Figure 10.2: All serious casualties in South Lanarkshire (2004 – 2016)



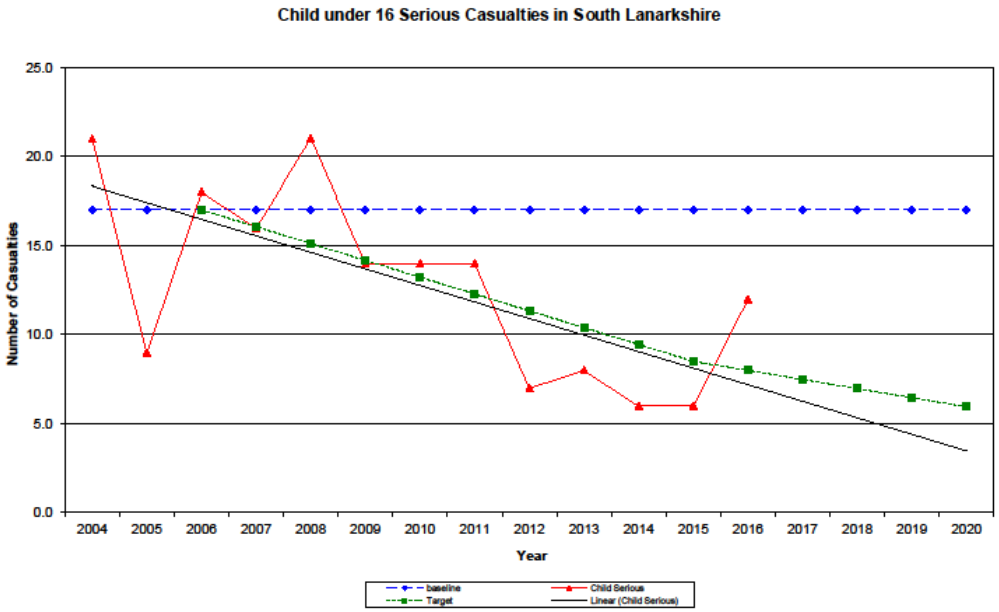
Source: South Lanarkshire Council

Figure 10.3: Child under 16 fatal casualties in South Lanarkshire (2004 – 2016)



Source: South Lanarkshire Council

Figure 10.4: Child under 16 serious casualties in South Lanarkshire (2004 – 2016)



Source: South Lanarkshire Council

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. As of January 2017 there are a total of **3,102** park and ride spaces, an increase of 511% on April 1994.

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	2015 2016
Bus	8	8	8	6	8	7	7	7	5
Taxi/minicab	3	3	2	2	1	2	2	3	2
Rail	1	2	2	2	2	2	2	2	5

Source: Scottish Household Survey

Between 1999 and 2016 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 **5.4 million** journeys between 2002/2003 and 2015/2017, an increase of **132%**. 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	2015/2016	2014/2015	2013/2014	2012/2013	2011/2012	2010/2011	2009/2010
Blantyre	610,730	623,058	602,544	560,532	527,094	490,204	459,820
Burnside	270,746	275,500	270,748	318,628	337,054	328,082	312,644
Cambuslang	774,352	750,022	716,608	777,400	757,576	689,836	655,394
Carluke	396,046	392,812	369,582	345,766	328,270	313,882	282,252
Carstairs	84,796	43,388	33,398	20,610	13,548	10,680	11,098
Chatelherault	85,898	74,934	66,948	62,526	59,538	57,116	49,830
Croftfoot	219,538	207,322	194,964	196,202	188,794	172,158	169,136
East Kilbride	1,136,980	1,153,648	1,079,531	988,832	985,456	909,914	855,950
Hairmyres	719,260	727,414	692,092	569,386	542,390	492,028	464,910
Hamilton Central	825,176	847,790	815,322	892,228	873,178	845,704	803,932
Hamilton West	935,000	946,210	904,785	885,286	845,188	798,816	756,516
Kirkhill	76,068	74,922	76,282	88,316	91,828	93,878	98,280
Lanark	306,236	328,890	304,640	337,896	350,014	347,128	328,594
Larkhall	420,366	420,130	406,074	342,704	327,070	317,462	323,080
Merryton	113,546	116,234	111,384	113,088	106,308	102,650	103,972
Newton	584,522	569,006	505,286	523,554	515,760	481,146	440,916
Rutherglen	1,110,088	1,073,392	1,030,290	977,418	894,434	796,568	734,707
Thorntonhall	19,094	18,314	18,394	21,624	19,348	18,290	20,492
Uddingston	826,694	819,576	769,654	784,600	7695,18	731,600	702,484
Total	**9,515,136**	**9,463,102**	**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	2015/ 2016
Walking	16	16	12	10	19	13	23	19	14
Bicycle	0	0	0	0	0	0	1	1	0

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 has been a consistent decline in walking since 2011/2012.

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 is implementing its Cycling Strategy for South Lanarkshire 2015 – 2020 which 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 February 2017 this increased to **66** schools and a further 62 schools had travel plans in development. As part of a national travel study, mode share data was collected from over 34,500 children, who attended school in South Lanarkshire, in September 2016 (**Table 10.6**).

The survey results demonstrate that walking to school is the most popular mode of transport with **40%** of pupils choosing this method and a further **10%** walking part of their journey. **2.2%** of pupils

cycled to school, **25%** of trips are children being wholly driven to school and travelling by bus accounts for **18%**.

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
2015	40.9%	4.3%	3.6%	9.4%	29.2%	9.7%	2.8%	0.1%	20,292
2016	40.4%	3.6%	3.4%	10.9%	29.0%	10.1%	2.3%	0.3%	21,116
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
2015	42.4%	0.3%	0.2%	6.5%	17.1%	30.5%	1.9%	1.1%	12,371
2016	41.9%	0.1%	0.1%	7.9%	16.3%	30.8%	1.9%	0.9%	12,680
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
2015	40.5%	2.7%	2.3%	8.2%	25.2%	17.9%	2.7%	0.5%	33,503
2016	40.0%	2.2%	2.1%	9.6%	24.8%	18.1%	2.4%	0.7%	34,646

Source: South Lanarkshire Council; Sustrans