



Provisional Shropshire Local Transport Plan (2011-2026)

Sustainability Appraisal Report

March 2011

Non-technical summary

Introduction

This is the report on the sustainability appraisal for the third Local Transport Plan (LTP) for Shropshire 2011-2026. It sets out the results of the health, equality and strategic environmental assessments (SEA) of the emerging plan, which have been undertaken in compliance with the European Directive (2001/42/EC).

The assessment looked at how the LTP would impact upon all aspects of the environment, including bio-diversity, population, health and equality, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage and landscape.

The assessment has been undertaken as an ongoing process throughout the development of the LTP. The assessment process has informed the development of a plan which has aimed to minimise negative impacts on health, the environment and equality and maximise the benefits.

Following consultation on the final draft LTP, and this assessment, we will produce a statement summarising how the environmental considerations have been integrated into the final LTP. The final statement and this full assessment will be published as part of the Final LTP in spring 2011.

Sustainability objectives

The environmental assessment of the LTP has been undertaken in relation to a set of SEA objectives which reflect the desired evolution of each aspect of the environment. These have been combined with the sustainability objectives identified in Shropshire's Local Development Framework Sustainability Appraisal to provide a full set of sustainability objectives by which the strategies in the draft LTP have been appraised. These objectives are set out in table 0.1.

Table 0.1 Sustainability objectives and links to SEA topics

SEA topic (SEA Directive Annex 1f)	Shropshire SEA/ sustainability topic	Shropshire sustainability objective
Air	Local air quality	To improve local air quality.
Climatic factors	Carbon emissions	To reduce Shropshire's contribution to climate change. To adapt to the impacts of climate change.
	Carbon emissions and Human health and population	To encourage modal shift towards more sustainable forms of transport. To reduce the need of people and businesses to travel.
Landscape	Landscape (visual and cultural impacts)	To protect, enhance and manage Shropshire's landscapes and townscapes.
Cultural heritage including architectural and archaeological heritage	Townscape and heritage	To preserve and enhance features and areas of archaeological historical and cultural heritage importance.

SEA topic (SEA Directive Annex 1f)	Shropshire SEA/ sustainability topic	Shropshire sustainability objective
Biodiversity (flora and fauna) and soil	Biodiversity (flora and fauna)	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire’s geological heritage.
	Soil & geology	To protect and improve soil quality and soil retention.
Water	Water quality, resources and flooding	To protect and enhance Shropshire’s water resources.
		To reduce the risk of flooding to people, property and wildlife.
Human health and population	Human health and population – noise and Biodiversity	To minimise noise levels.
	Human health and population - physical fitness	To create active and healthier communities for all and reduce inequalities in health services.
	Human health and population - accidents	To promote safer communities – by reducing death and serious injury from accidents.
	Human health and population - security	To promote safer communities by reducing the fear of crime/road traffic accidents.
	Human health and population – accessibility and equality	To enhance access to essential services.
	Human health and population - equality	To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society.
	Human health and population – equality and physical fitness	To promote community participation in a diverse range of sporting, recreational and cultural activities.
Material assets (including material/ natural resources)	Material assets	To ensure the efficient use of land and material resources.
N/A	Economy and equality	To promote a strong and sustainable economy throughout Shropshire.
		To encourage high quality inward investment, and support existing businesses to expand and diversify.

Environmental baseline

For each aspect of the environment the current baseline has been established and an assessment has been made of the likely evolution against the objectives set out above in the absence of a Local Transport Plan. A summary of this baseline information is presented in table 0.2.

Table 0.2 Summary of likely evolution of baseline without LTP

SEA/ sustainability topic	Likely events without a LTP	Likely effects on baseline	Baseline evolution assessment
Local air quality	<ul style="list-style-type: none"> • Increased traffic volumes • Increasing congestion • Cleaner vehicles • Reducing background concentrations of NO2 	<ul style="list-style-type: none"> • Slight reduction in NO2 levels • AQMAs not declared • Still some poor air quality hotspots where congestion increases in "canyon" type streets 	Slightly beneficial
Carbon emissions	<ul style="list-style-type: none"> • Increased traffic volumes • Increased use of larger & faster vehicles • Faster average speeds 	<ul style="list-style-type: none"> • Increased carbon dioxide levels 	Moderately adverse
Landscape	<ul style="list-style-type: none"> • Increasing traffic levels • More indiscriminate parking 	<ul style="list-style-type: none"> • Visual intrusion • Loss of tranquillity • Light pollution • Loss of characteristics Shropshire's landscape is recognised for 	Slightly adverse
Townscape and heritage	<ul style="list-style-type: none"> • Increasing traffic levels • More indiscriminate parking • More air pollution, vibration and noise 	<ul style="list-style-type: none"> • Visual intrusion (street furniture) • Light pollution • Damage to historic buildings • Negative change in ambience of conservation areas 	Slightly adverse
Biodiversity (flora and fauna, and soil)	<ul style="list-style-type: none"> • Increasing traffic levels and increased use of larger & faster vehicles increasing severance • Negative changes to air quality, water quality, noise, vibrations & light emissions 	<ul style="list-style-type: none"> • Road mortality • Barriers to movement leading to habitat fragmentation • Increased health problems and disturbance • Reduction in both numbers and in species of wildlife 	Slightly adverse
Water quality	<ul style="list-style-type: none"> • Increasing traffic levels and additional pollution in run-off 	<ul style="list-style-type: none"> • Reduction in water quality • Limited availability • Poor quality of water for drinking and bathing, leisure activities and health implications for wildlife • Floods (damage and / or loss to persons, wildlife, infrastructure) 	Slightly adverse
Noise	<ul style="list-style-type: none"> • Increased traffic volumes • Larger & faster vehicles 	<ul style="list-style-type: none"> • Loss of tranquillity • Poor quality of health • Reduced quality of life 	Slightly adverse
Physical fitness	<ul style="list-style-type: none"> • Increased car use and reduced walking and cycling 	<ul style="list-style-type: none"> • Reduced fitness • Poor quality of health • Reduced quality of life 	Moderately adverse

SEA/ sustainability topic	Likely events without a LTP	Likely effects on baseline	Baseline evolution assessment
Accidents	<ul style="list-style-type: none"> Increasing traffic Better safety features in more modern cars 	<ul style="list-style-type: none"> More slight casualty accidents but fewer serious and fatal accidents Accidents could lead to: <ul style="list-style-type: none"> Loss of life Reduced quality of life 	Neutral
Security	<ul style="list-style-type: none"> Fewer people walking and cycling More traffic 	<ul style="list-style-type: none"> Increased fear of crime/ speeding vehicles/ road traffic accidents 	Slightly adverse
Accessibility and equality	<ul style="list-style-type: none"> Increased car ownership Reduced quality of public transport services 	<ul style="list-style-type: none"> More people with access to a car and good accessibility Poorer accessibility for those without a car 	Neutral
Material assets	<ul style="list-style-type: none"> Deteriorating road condition 	<ul style="list-style-type: none"> Increased fuel consumption for vehicles operating on poor quality roads Increased resource consumption in long term to fully replace highways 	Slightly adverse
Economy and equality	<ul style="list-style-type: none"> Deteriorating road and public transport links between towns and businesses Fewer checks on business development Fewer incentives for businesses to reduce travel Increased car use 	<ul style="list-style-type: none"> Reduced accessibility to employment locations Possible lack of inward investment due to poorer transport infrastructure and longer journey times Possible increased development in undesirable locations Possible increase business travel Businesses in market towns and villages struggling due to increased car use to travel to larger service centres leading to less diversity/choice and fewer local facilities 	Slightly adverse

Option identification and assessment

In the early stages of the development of the LTP three alternative strategic options were developed.

Option 1: Safety and equality - focused on those priorities which stakeholder consultation highlighted were of most importance to the people of Shropshire.

Option 2: Safety and health, equality, economic growth and carbon - focused on addressing four of the Government's key priorities,

Option 3: Safety and health, equality, economic growth and carbon + quality of life Issues - in addition to those issues addressed in option 2 this option also aimed to address a range of other quality of life issues.

The effect of the three strategic LTP options was assessed and compared to a do-nothing option. A summary of the results of this assessment is provided in table 0.3.

Table 0.3 Summary of the predicted significant environmental effects of LTP strategy options

SEA/ sustainability topic	Shropshire sustainability objective	Without LTP	Option 1	Option 2	Option 3
Local air quality	To improve local air quality.	Slightly beneficial	Neutral	Moderately beneficial	Moderately beneficial
Carbon emissions	To reduce Shropshire's contribution to climate change.	Moderately adverse	Strongly adverse	Strongly adverse	Slightly adverse
	To adapt to the impacts of climate change.				
	To encourage modal shift towards more sustainable forms of transport.				
	To reduce the need of people and businesses to travel.				
Landscape	To protect, enhance and manage Shropshire's landscapes and townscapes.	Slightly adverse	Moderately adverse	Moderately adverse	Moderately beneficial
Townscape and heritage	To preserve and enhance features and areas of archaeological historical and cultural heritage importance.	Slightly adverse	Moderately adverse	Neutral	Moderately beneficial
Biodiversity (flora & fauna)	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire's geological heritage.	Slightly adverse	Moderately adverse	Moderately adverse	Slightly beneficial
Soil and geology	To protect and improve soil quality and soil retention.	Neutral	Neutral	Neutral	Neutral
Water resources, quality and flooding	To protect and enhance Shropshire's water resources.	Slightly adverse	Moderately adverse	Moderately adverse	Slightly adverse
	To reduce the risk of flooding to people, property and wildlife.				
Human health and population – noise	To minimise noise levels	Slightly adverse	Moderately adverse	Neutral	Slightly beneficial

SEA/ sustainability topic	Shropshire sustainability objective	Without LTP	Option 1	Option 2	Option 3
Human health and population - physical fitness	To create active and healthier communities for all and reduce inequalities in health services.	Moderately adverse	Moderately adverse	Slightly beneficial	Moderately beneficial
Human health and population – accidents	To promote safer communities – by reducing death and serious injury from accidents.	Neutral	Moderately beneficial	Moderately beneficial	Moderately beneficial
Human health and population – security	To promote safer communities by reducing the fear of crime/road traffic accidents.	Moderately adverse	Moderately adverse	Slightly beneficial	Slightly beneficial
Human health and population – accessibility and equality	To enhance access to essential services	Neutral	Moderately beneficial	Moderately beneficial	Moderately beneficial
	To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society.				
	To promote community participation in a diverse range of sporting, recreational and cultural activities.				
Material assets	To ensure the efficient use of land and material resources.	Slightly adverse	Moderately adverse	Moderately adverse	Slightly beneficial
Economy and equality	To promote a strong and sustainable economy throughout Shropshire.	Slightly adverse	Moderately adverse	Slightly adverse	Slightly beneficial
	To encourage high quality inward investment, and support existing businesses to expand and diversify.				

Significant effects of the preferred option

The preferred strategic option for the LTP was option 3. A detailed assessment of what additional mitigation measures could be incorporated into option 3 was made. Table 0.4 provides a detailed commentary on the significant effects of the chosen option and the integrated mitigation measures.

Table 0.4 Predicted effects of preferred LTP strategy policies

Policy number	LTP strategy policy	Final assessment of impact upon sustainability													
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality
E1	Air travel	-	-	0	0	0	0	0	-	0	0	0	+	0	++
E2	M6 toll road link	+	+	0	0	0	0	0	-	0	0	0	0	0	++
E3	Strategic road network reliability improvements	+	+	-	0	-	-	-	-	0	++	+	+	0	++
E4	Network management	+	+	0	++	0	0	0	+	+	++	+	+	++	+++
E5	Tackling Shrewsbury's traffic problems	+	++	-	++	-	0	0	++	+	0	++	+	0	++
E6	New roads and bypasses	-	0	+++	++	+	+	++	+	0	0	0	0	+++	-
E7	Car parking and park and ride	+	+	+	+	0	0	0	0	+	+	0	+	++	++
E8	Access to work	+	++	-	+	0	0	0	+	++	0	0	+++	0	++
E9	Supporting sustainable tourism	+	-	-	++	-	-	0	0	+	0	0	+	0	+++
E10	Location and design of new development	0	0	+	+	+	+	+	0	+	0	+	+	+	+
C1	Rail infrastructure	0	++	+	+	0	0	0	+	0	+	+	++	0	+++
C2	Rail services and information	0	+	0	+	0	0	0	0	0	0	0	++	0	+++
C3	Access to rail stations	0	+	-	+	0	0	0	-	++	0	0	++	0	++

Policy number	LTP strategy policy	Final assessment of impact upon sustainability													
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality
C4	Managing freight	0	0	-	+	-	-	0	+	0	0	+	0	0	+
C5	Encouraging more sustainable travel choices	+	++	+	+	0	0	0	++	+++	0	+	++	0	+
C6	Improving vehicle efficiency	++	+++	+	+	++	+	++	+	0	+	0	0	+	0
C7	Improving air quality	+++	++	+	+	+	+	++	0	0	0	0	0	0	0
C8	Reducing traffic noise	0	0	-	+	0	0	0	+++	0	+	+	0	0	-
C9	Reduce environmental impacts	0	+	+++	+++	+++	+++	+++	0	0	0	0	0	++	0
H1	Cost effective asset management	0	0	-	-	0	-	-	+	0	+	+	0	+++	+
H2	Safe road surface	0	0	0	0	0	-	--	0	0	+++	+++	0	++	+
H3	Reducing our environmental impact and responding to climate change	0	0	+	+	+	+	++	0	+	++	++	+	+++	+
A1	Supported bus network	0	+	0	0	0	0	0	0	0	0	0	+++	0	+
A2	Bus network enhancements	0	+	0	+	0	0	0	0	0	0	0	+++	0	++

Policy number	LTP strategy policy	Final assessment of impact upon sustainability															
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality		
A3	Bus fares and ticketing	0	+	0	0	0	0	0	0	0	0	0	0	0	++	0	++
A4	Improve public transport information and marketing	0	0	-	-	0	0	0	0	0	0	0	+	++	0	0	+
A5	Other bus enhancements	0	++	0	+	0	0	0	0	+	0	0	+	++	0	0	++
A6	Community and voluntary transport	0	+	0	0	0	0	0	0	0	0	0	0	+++	0	0	+
A7	Taxis and private hire vehicles	0	+	0	0	0	0	0	0	0	0	+	0	+	0	0	+
A8	Improving access for people with disabilities	0	0	0	0	0	0	0	0	+	0	+	+	+++	0	0	+
A9	Cycle infrastructure	+	++	0	+	0	0	0	+	+++	++	++	++	+++	0	0	+
A10	Encouraging cycle use	+	++	0	+	0	0	0	+	+++	+	+	+	+++	0	0	+
A11	Pedestrian infrastructure	+	++	0	+	0	0	0	+	+++	+++	+++	+++	+++	0	0	+
A12	Encourage walking	+	++	0	+	0	0	0	+	+++	+	+	+	++	0	0	+
S1	Safety schemes	0	0	--	-	--	0	-	0	+	+++	+++	+++	+	0	0	+
S2	New and improved roads and road maintenance	0	0	-	-	-	0	0	0	0	+++	+++	+++	+	0	0	0

Policy number	LTP strategy policy	Final assessment of impact upon sustainability													
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality
S3	Appropriate speed limits	0	0	-	-	0	0	0	+	+	+++	+++	+	0	0
S4	Compliance with speed limits	0	0	-	-	0	0	0	+	+	+++	+++	+	0	0
S5	Road safety education, training and publicity	0	0	0	0	0	0	0	0	+	+++	+++	+	0	+
S6	Reducing personal security fears when travelling	0	0	0	+	0	0	0	0	++	++	+++	+	0	+
Whole strategy		0	+	0	+	0	0	0	0	+	+	+	++	0	+

Environmental impacts of major schemes

Major scheme proposals have been developed and presented separately from the LTP. As such, specific potential major schemes such as the Shrewsbury North West Relief Road were not assessed in the strategic options assessment. Results of a Stage 2 Environmental Assessment of this scheme are provided in part 5 of this document.

Monitoring

A set of potential indicators has been established to monitor the actual impacts as the LTP is implemented. Reporting on these indicators will be incorporated into the LTP reporting process, where possible.

1. Introduction

Sustainability appraisal

This document is the sustainability appraisal for Shropshire's third Local Transport Plan. It fulfils the requirements to complete the following assessments of the plan:

- Strategic Environmental Assessment (SEA)
- Equality Impact Assessment (EqIA)
- Health Impact Assessment (HIA)

These assessments have undertaken and the results have been integrated into a single sustainability appraisal.

Strategic Environmental Assessment (SEA)

In July 2004 a new European Directive (2001/42/EC) on the assessment of the effects of certain plans and programmes on the environment, the Strategic Environmental Assessment (SEA) Directive, became law in the UK. The effects on all parts of the environment, including bio-diversity, population, health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage, landscape and the interrelationship between the different factors must be considered. The Directive requires local authorities to show that the effects on the environment of relevant new strategies and plans have been taken into account before they are finalised.

The stated objectives of the Strategic Environmental Assessment Directive are to:

- Provide for a high level of protection for the environment; and
- Contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development

The SEA directive aims to ensure that key plans and programmes contribute to the better delivery of Sustainable Development, helping to balance environmental, social and economic issues at early stages within planning processes.

In accordance with the Directive, the SEA Regulations and Department for Transport (DfT) guidance, a SEA has been undertaken on the draft third Local Transport Plan for Shropshire.

A key requirement under the SEA directive is the preparation of an environmental report to be published for consultation with the draft version of the plan being prepared. This environment report forms the basis of this sustainability appraisal. It demonstrates how Shropshire Council has fulfilled the requirements of the Strategic Environmental Assessment Directive in preparing its Local Transport Plan 3.

Following consultation on the final draft LTP and this sustainability appraisal, we will produce a statement summarising how the environmental considerations have been integrated into the LTP.

The final statement and this full appraisal will be published as part of the final LTP on 31 March 2011.

Guidance on carrying this SEA was taken from:

- A Practical Guide to the Strategic Environmental Assessment Directive (ODPM, DOE Sept 2005)
- Strategic Environmental Assessment Guidance for Transport Plans and Programmes (TAG) (DfT, April 2004)

Equality Impact Assessment (EqIA)

Shropshire Council is required by law to undertake an Equality Impact Assessment (EqIA) of all new policies. Undertaking the EqIA helps Shropshire Council to ensure that the Local Transport Plan will meet its legal requirements to narrow the health inequalities that exist in England between people from different ethnic backgrounds, people with disabilities, men and women (including transgendered people), people with different sexual orientations, people in different age groups, people with different religions or beliefs and people from differing social and economic groups.

Each of the policies within the Local Transport Plan have been analysed to assess any possible negative impacts on specific groups and to establish actions which could be undertaken to mitigate them.

Guidance on carrying this EqIA was taken from:

- Equality impact assessment: summary tool and guidance for policy makers (DH, November 2008)

Health Impact Assessment (HIA)

Shropshire Council is required by law to undertake a health impact assessment (HIA) of all new policies. A HIA of Shropshire's draft third Local Transport Plan's has been undertaken to analyse its potential effects on the health of Shropshire's population, and the distribution of those effects within the population.

The desire to improve the health of Shropshire's population has informed the development of the policies in the Local Transport Plan from its inception; in addition undertaking an HIA should ensure that the policies within the LTP maximise the positive impacts and minimise the negative impacts on health and that they address health inequalities within Shropshire.

Guidance on carrying this HIA was taken from:

- Health Impact Assessment of Government Policy (DH, July 2010)

The Shropshire Local Transport Plan

The Transport Act 2000 places a duty on local transport authorities to produce a statutory document, known as the Local Transport Plan (LTP), which contains policies for the promotion and encouragement of safe, integrated, efficient and economic transport facilities and services to, from and within their area.

As a result of its statutory duty Shropshire Council is preparing a third Local Transport Plan (LTP) to cover the period 2011-26. The LTP will set out the Council's vision, strategy and implementation programme for all forms of local transport over the plan period.

In July 2009, the DfT published guidance on the preparation of third Local Transport Plans for local transport authorities. This guidance stressed that LTPs should contain strategies that would help to deliver the shared priority outcomes of:

- Supporting economic growth
- Reducing carbon emissions
- Promoting equality and opportunity
- Contributing to better safety, security and health

As well as:

- Improving quality of life and a healthy natural environment - enhancing other quality of life issues, including noise, the quality of public space and landscapes, conservation of biodiversity, access to services, and improving transport experience.

Linking between sustainability appraisal and LTP development

Key aims in undertaking the sustainability appraisal have been to:

- identify alternative strategy options for the LTP
- evaluate the cumulative significant environmental, health and equality effects of the strategy options
- provide decision makers with a holistic understanding of the environmental, health and equality implications of the LTP strategy options
- mitigate negative environmental, health and equality impacts arising from the implementation of the preferred LTP strategy as much as possible

Shropshire Council has undertaken the sustainability appraisal of its LTP as an integral part of the process of LTP development. In order to ensure a clear link between the sustainability appraisal and LTP the appraisal has been carried out internally, by transport planning professionals, with specialist information and advice provided by environmental specialists from within the organisation.

Consultation and LTP development

A set of draft LTP objectives were developed in line with LTP guidance and priorities identified through consultation for the second Local Transport Plan identified in Shropshire's Local Development Framework.

A consultation event was held in September 2010 for LTP stakeholders. At this event stakeholders were given the opportunity to comment on and prioritise LTP objectives. Following this exercise the draft objectives were revised to take into account this feedback.

An online consultation was undertaken in December 2010/January 2011 with stakeholders and the general public to establish spending priorities for the LTP. This consultation will inform the priorities and objectives for the final LTP documents.

An outline of the methodology and results of the initial consultation for LTP 3 is available in Part 2 of the Local Transport Plan Evidence Base.

Further consultation will be undertaken with stakeholders on the draft LTP documents, including this appraisal in spring 2011, before the documents are finalised.

2. Context and objectives

Introduction

At an early stage in the process of the LTP production an appraisal of the key environmental, equality and health objectives relating to Shropshire were compiled. These were used as a check in developing the LTP objectives and priorities. This chapter summarises the information gathered on the environmental objectives of other relevant policies and plans. It sets out the key environmental, health and equality considerations for Shropshire in the form of a set of sustainability objectives, it summarises the LTP objectives developed and the checks made to assess if the sustainability and LTP objectives were compatible.

Links to other plans

In developing Shropshire's Local Development Framework (LDF) in 2008 a full analysis of relevant policies, plans and programmes was undertaken.¹ The LTP has been developed to ensure that it fully reflects and is link to the plans analysed in this appraisal.

This fulfils the SEA Directive requirement that environmental protection requirements set out in policy documents at European, national, regional and local level are taken into account during the preparation of the LTP.

Sustainability objectives

In order to help describe, measure and compare the potential or actual impact of the LTP options on the environment, health and equality a set of sustainability objectives and indicators were developed.

The sustainability objectives set out the desired change. The set of objectives covers all aspects of the environment, as identified in the SEA directive, in addition to health and equality. The objectives have been established with reference to objectives set out in other policies and plans, the existing baseline and the identified problems and opportunities for Shropshire.

Table 2.1 sets out Shropshire's sustainability objectives, and highlights their relationship with the SEA topics.

Table 2.1 Sustainability objectives and links to SEA topics

SEA topic (SEA Directive Annex 1f)	Shropshire SEA/ sustainability topic	Shropshire Local Development Framework sustainability objective	Shropshire sustainability objective
Air	Local air quality	SO15	To improve local air quality.

¹ Shropshire Local Development Framework Draft Sustainability Appraisal Scoping Report, October 2008. Available at: <http://www.shropshire.gov.uk/planning.nsf/open/C383DD2F24A9052D802574C9003A5B8F>

SEA topic (SEA Directive Annex 1f)	Shropshire SEA/ sustainability topic	Shropshire Local Development Framework sustainability objective	Shropshire sustainability objective
Climatic factors	Carbon emissions	SO9	To reduce Shropshire’s contribution to climate change.
		SO10	To adapt to the impacts of climate change.
	Carbon emissions and Human health and population	SO5	To encourage modal shift towards more sustainable forms of transport.
		SO6	To reduce the need of people and businesses to travel.
Landscape	Landscape (visual and cultural impacts)	SO11	To protect, enhance and manage Shropshire’s landscapes and townscapes.
Cultural heritage including architectural and archaeological heritage	Townscape and heritage	SO12	To preserve and enhance features and areas of archaeological historical and cultural heritage importance.
Biodiversity (flora and fauna) and soil	Biodiversity (flora and fauna)	SO13	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire’s geological heritage.
	Soil & geology	SO17	To protect and improve soil quality and soil retention.
Water	Water quality, resources and flooding	SO14	To protect and enhance Shropshire’s water resources.
		SO16	To reduce the risk of flooding to people, property and wildlife.
Human health and population	Human health and population – noise and Biodiversity		To minimise noise levels.
	Human health and population - physical fitness	SO8	To create active and healthier communities for all and reduce inequalities in health services.
	Human health and population - accidents	SO1	To promote safer communities – by reducing death and serious injury from accidents.
	Human health and population - security		To promote safer communities by reducing the fear of crime/road traffic accidents.
	Human health and population – accessibility and equality		To enhance access to essential services.

SEA topic (SEA Directive Annex 1f)	Shropshire SEA/ sustainability topic	Shropshire Local Development Framework sustainability objective	Shropshire sustainability objective
	Human health and population - equality	SO2	To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society.
	Human health and population – equality and physical fitness	SO7	To promote community participation in a diverse range of sporting, recreational and cultural activities.
Material assets (including material/ natural resources)	Material assets	SO18	To ensure the efficient use of land and material resources.
N/A	Economy and equality	SO3	To promote a strong and sustainable economy throughout Shropshire.
		SO4	To encourage high quality inward investment, and support existing businesses to expand and diversify.

LTP objectives

Early in the LTP development process, and with reference to relevant environmental, health, equality and other objectives of other plans, a set of LTP objectives were established.

These objectives reflected the national shared priorities for transport and other quality of life issues, as well as local priorities identified from other policies and plans, analysis of local problems and opportunities and stakeholder consultation.

The LTP objectives are outlined in table 1.2 below.

Table 2.2 LTP objectives

Community Plan priority and LTP goal	LTP objectives	Policy areas	Outcomes
<p>Economy and growth</p>	<p>Improve connectivity, and access to jobs, particularly by sustainable transport modes</p>	<p>Economy and growth</p> <ul style="list-style-type: none"> • Air travel • M6 toll link • Strategic road network reliability improvements • Network management • Capacity improvements and new roads • Car parking and park and ride • Access to work • Supporting sustainable tourism • Location and design of new development 	<ul style="list-style-type: none"> • Economy supported through good connectivity and access for workers, customers and goods. • More predictable and reliable journey times • Better access to employment, education, goods and services without needing to use a car • Tourism encouraged with good access, vibrant pedestrian friendly towns and high quality rural areas unspoilt by traffic. • More very local journeys, particularly within towns, to be made by foot or cycle • Greater use to be made of bus travel in towns and on strategic corridors where this can provide a practical alternative to the car • More provision and use of park and ride where this can be viable and can help to reduce traffic levels in historic town centres • A high quality environment and good quality of life which will attract and retain high value businesses and entrepreneurs.
	<p>Improve journey time reliability and reduce unforeseen delays</p>		
	<p>Support delivery of new housing and employment areas in ways that encourage more sustainable travel behaviour.</p>		
<p>Carbon reduction and environment</p>	<p>Reduce transport related carbon emissions</p>	<p>Traffic, carbon and environment</p> <ul style="list-style-type: none"> • Rail infrastructure • Rail services and information • Access to rail stations • Managing freight • Encouraging more sustainable travel choices • Improving vehicle efficiency • Improving air quality • Reducing traffic noise • Reducing environmental Impacts 	<ul style="list-style-type: none"> • A greater proportion of short journeys being made by foot or cycle • Greater use of buses on strategic corridors and more use of park and ride where provided. • A greater proportion of longer distance journeys to be made by rail or coach, and greater use of car sharing • More long distance freight moved by rail, and reduced impact of HGVs on communities • Larger proportion of more efficient and cleaner vehicles in use, and wide adoption of greener driving practices • Air quality within EU limits across the county • Reduced impacts from noise at problem locations • Reduced impacts landscapes, townscapes, heritage, biodiversity, soil and water quality from our highways maintenance and highways improvement practices
	<p>Minimise the impacts of transport on our local environment and communities</p>		

Community Plan priority and LTP goal	LTP objectives	Policy areas	Outcomes
	Maintain the condition of the highway network	Highways maintenance <ul style="list-style-type: none"> • Cost effective asset management • Maintaining a safe highway • Reducing our environmental impact and responding to climate change 	<ul style="list-style-type: none"> • Provision of a highway network that is safe for all road users • Sections of highway are maintained in a appropriate condition for their function • The value of the highway asset is maintained • Maintenance is undertaken in the most cost effective way with impacts on the environment minimised
Healthy, safe and confident people and communities	Enable older, younger, disabled and other excluded people to more easily access a range of services and facilities	Accessibility and health <ul style="list-style-type: none"> • Supported bus network • Bus network enhancements • Bus fares and ticketing • Improve public transport information and marketing • Other bus enhancements • Community transport • Taxis and private hire vehicles • People with mobility difficulties • Cycle infrastructure • Encouraging cycle use • Pedestrian infrastructure • Encourage walking 	<ul style="list-style-type: none"> • People living within larger towns and on interurban routes able to access a good range of employment and services via a reasonably frequent bus service • Some level of affordable transport available for all rural residents to enable then to access essential services and prevent social exclusion • People with mobility impairments able to travel more easily by appropriate modes, with barriers to mobility removed where possible • More short journeys are made by foot or cycle rather than car • A contribution has been made to reducing accessibility and health inequalities • Greater levels of social interaction and community cohesion have been achieved as a result of more people being 'out and about' and greater opportunities to interact when travelling by foot, bike or public transport.
	Encourage more travel by active modes of foot and cycle		
	Reduce the risk of death or injury due to transport accidents.	Safety and security <ul style="list-style-type: none"> • Safety schemes • Improving safety when maintaining and improving roads • Appropriate speed limits • Compliance with speed limits • Road safety education, training and publicity • Personal security 	<ul style="list-style-type: none"> • A continued reduction in road accident casualties and deaths at a greater rate than the national average • Lower risk (number of casualties per distance travelled) for road users who are currently at higher risk, particularly motorcycle users, pedestrian, cyclists and young people. • Traffic moving at appropriate speeds for the road environment, greater compliance with speed limits and less public concern about speeding traffic • Greater perceptions of safety and security for all road users
	Help people feel safe and secure when travelling and protected from traffic in their communities		

Compatibility of objectives

In order to assess whether the sustainability objectives would complement or contradict the LTP objectives, a compatibility exercise was undertaken. Results of this exercise can be seen in table 1.3.

Key:
+ = LTP objective has a positive impact on sustainability objective
0 = LTP objective has a neutral impact on sustainability objective
- = LTP objective has a negative impact on sustainability objective

Table 2.3 Compatibility of SEA and LTP objectives

	To improve local air quality	To reduce Shropshire's contribution to climate change.	To adapt to the impacts of climate change	To encourage modal shift towards more sustainable forms of transport	To reduce the need of people and businesses to travel	To protect, enhance and manage Shropshire's landscapes and townscapes	To preserve and enhance features and areas of archaeological historical and cultural heritage importance	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire's geological heritage	To protect and improve soil quality and soil retention	To protect and enhance Shropshire's water resources	To reduce the risk of flooding to people, property and wildlife	To minimise noise levels	To create active and healthier communities for all and reduce inequalities in health services	To promote safer communities – by reducing death and serious injury from accidents	To promote safer communities by reducing the fear of crime/road traffic accidents	To enhance access to essential services	To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society	To promote community participation in a diverse range of sporting, recreational and cultural activities	To ensure the efficient use of land and material resources	To promote a strong and sustainable economy throughout Shropshire	To encourage high quality inward investment, and support existing businesses to expand and diversify
Improve connectivity, and access to jobs, particularly by sustainable transport modes	0	0	+	0	+	+	+	0	0	0	0	+	0	0	0	+	0	+	0	+	+
Improve journey time reliability and reduce unforeseen delays	+	+	+	+	0	+	+	0	0	0	0	+	0	0	0	+	0	0	+	+	+
Support delivery of new housing and employment areas in ways that encourage more sustainable travel behaviour.	0	0	+	+	+	+	+	0	0	0	0	0	+	0	+	+	+	+	+	+	+

	To improve local air quality	To reduce Shropshire's contribution to climate change.	To adapt to the impacts of climate change	To encourage modal shift towards more sustainable forms of transport	To reduce the need of people and businesses to travel	To protect, enhance and manage Shropshire's landscapes and townscapes	To preserve and enhance features and areas of archaeological historical and cultural heritage importance	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire's geological heritage	To protect and improve soil quality and soil retention	To protect and enhance Shropshire's water resources	To reduce the risk of flooding to people, property and wildlife	To minimise noise levels	To create active and healthier communities for all and reduce inequalities in health services	To promote safer communities – by reducing death and serious injury from accidents	To promote safer communities by reducing the fear of crime/road traffic accidents	To enhance access to essential services	To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society	To promote community participation in a diverse range of sporting, recreational and cultural activities	To ensure the efficient use of land and material resources	To promote a strong and sustainable economy throughout Shropshire	To encourage high quality inward investment, and support existing businesses to expand and diversify
Reduce transport related carbon emissions	+	+	+	+	+	+	+	+	+	+	0	0	+	0	0	-	-	-	0	0	-
Minimise the impacts of transport on our local environment and communities	+	+	+	+	+	+	+	+	+	+	0	+	0	0	0	-	0	0	0	0	-
Maintain the condition of the highway network	0	0	0	0	0	+	+	0	0	-	+	+	0	+	+	+	0	0	+	+	+
Enable older, younger, disabled and other excluded people to more easily access a range of services and facilities	0	0	0	0	+	0	0	0	0	0	0	0	+	0	0	+	0	+	0	+	0
Encourage more travel by active modes of foot and cycle	+	+	+	+	+	+	+	0	0	0	0	+	+	0	+	0	0	+	+	0	0
Reduce the risk of death or injury due to transport accidents.	0	0	0	+	0	+	0	0	0	0	0	0	+	+	+	0	0	0	0	0	0
Help people feel safe and secure when travelling and protected from traffic in their communities	+	+	0	+	0	+	+	0	0	0	0	+	0	+	+	0	0	+	0	0	0

3. Environmental baseline

Introduction

In order to be able to forecast and monitor the effect of the LTP on the environment it is necessary to have a picture of the existing environmental baseline in Shropshire. It is necessary to understand the key environmental problems and opportunities and the likely evolution of the environment without the LTP.

This chapter sets out the current state of Shropshire's environment under the following Shropshire SEA/sustainability topic areas.

- Local air quality;
- Carbon emissions;
- Landscape;
- Townscape and heritage;
- Biodiversity (flora and fauna);
- Soil and geology;
- Water quality, resources and flooding;
- Human health & population;
- Material assets
- Economy and equality

The current state of each aspect of the environment is described in detail in the following sub-sections and is summarised in table 3.12 which shows the environmental objectives, indicators, baseline position, likely trend or evolution without the LTP and relevant data sources. Additional maps showing environmental baseline information are provided in Appendix 1.

Air quality

Sustainability objective: To improve local air quality.

The standard of local air quality affects human health (nitrogen dioxide, for example, is a respiratory irritant), ecosystems (for example, nitrogen dioxide can be absorbed by plants and may lead to species loss), as well as speeding up the process of erosion of buildings. Air quality is one factor taken into account in the outdoor living deprivation index (see Figure A1.7 in Appendix 1). Transport is a major contributor to poor air quality and associated health problems such as asthma. Traffic produces 70% of carbon monoxide emissions, 48% of all nitrogen oxide emissions and 22% of particulates in Britain.

Under the Environment Act 1995, local authorities are required to carry out an air quality review and assessment. National standards exist for a full range of pollutants (Benzene, 1,3-butadiene, Carbon monoxide, Lead, Nitrogen dioxide, PM10 and Sulphur dioxide). If a local authority's assessments show that the national standards are unlikely to be met, the authority should designate the relevant areas as Air Quality Management Areas (AQMA).

The UK Air Quality Strategy includes a range of objectives for local authorities for reducing air pollution to human health and vegetation and ecosystems. The two pollutants of concern in some areas of Shropshire are PM10 and NO₂. The national objectives for these are outlined in table 3.1.

Table 3.1 National air quality objectives (Source: National Air Quality Strategy 2007)

Particles (PM10) (gravimetric)	50 µg/m ³ Not to be exceeded more than 35 times per year	24 hour mean
	40 µg/m ³	Annual mean
Nitrogen dioxide	200 µg/m ³ Not to be exceeded more than 18 times per year	1 hour mean
	40 µg/m ³	Annual mean

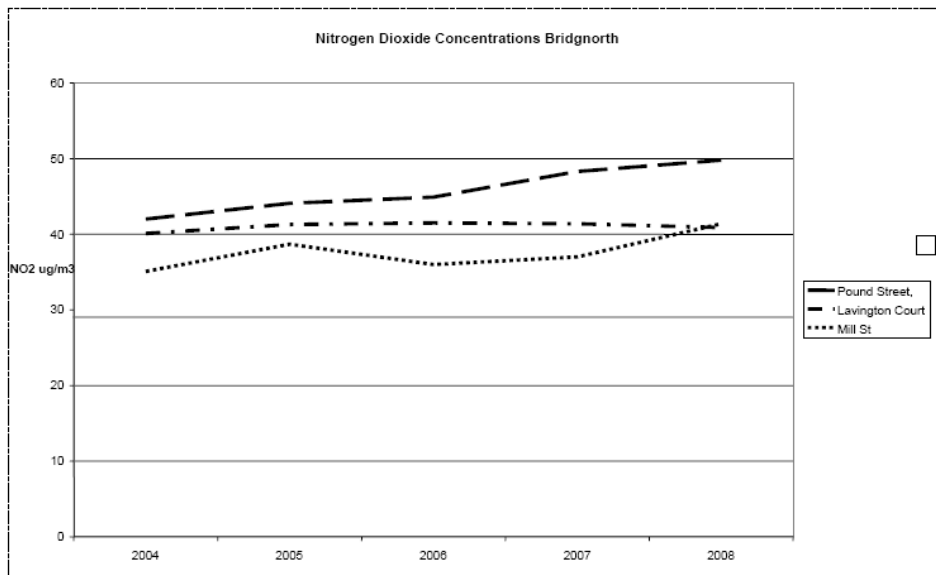
Several rounds of air quality review and assessment have been undertaken in Shropshire since 1998. These assessments highlighted a small number of localised sites in the county where levels of NO₂ exceed national standards and for which AQMAs have been established. Traffic is the main cause of the high NO₂ levels in these AQMAs. There are currently 5 AQMAs in Shropshire:

- Shrewsbury town centre
- Around Healthgates Island (Telford Way, Whitchurch Road, Sundorne Road, Ditherington Road junction) on the A5112 in Shrewsbury
- Pound Street, around the junction with Salop Street and Whitburn Street., Bridgnorth
- On the A49 in Bayston Hill (Highways Agency road)
- Small AQMA covering two houses beside the A483 at Pant, near Oswestry (Highways Agency road)

Each of the AQMAs has an action plan identifying both generic and location specific measures to improve air quality in that area.

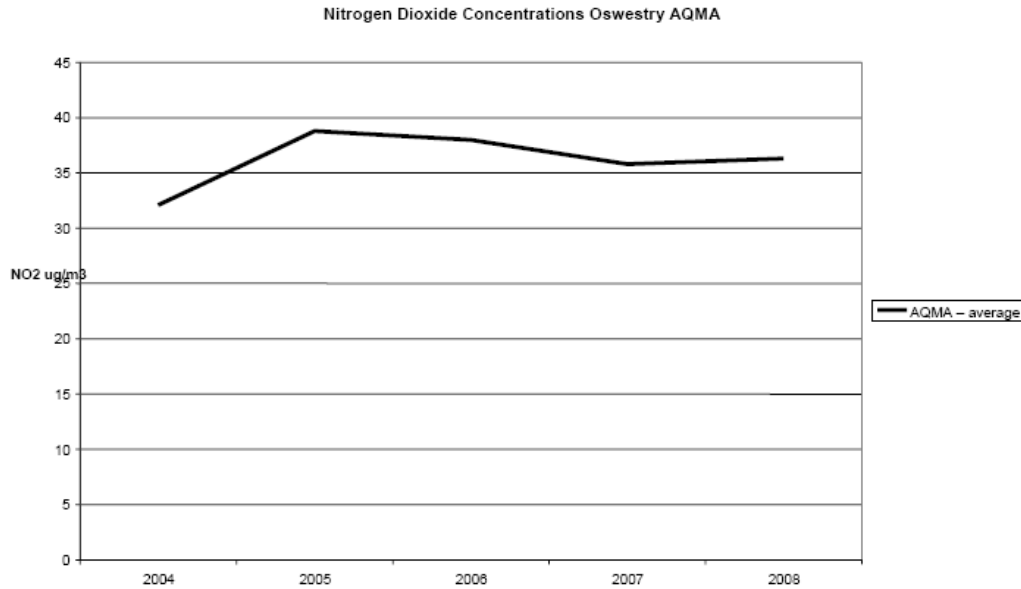
In Bridgnorth levels of NO₂ are currently exceeding the EU objective at Pound Street, within the declared AQMA, and are also close to the objective level at Lavington Court off Underhill Street and at Mill Street in Low Town. Consideration will need to be made to the additional declaration of additional AQMAs to cover these sites

Figure 3.1 NO₂ concentrations in Bridgnorth



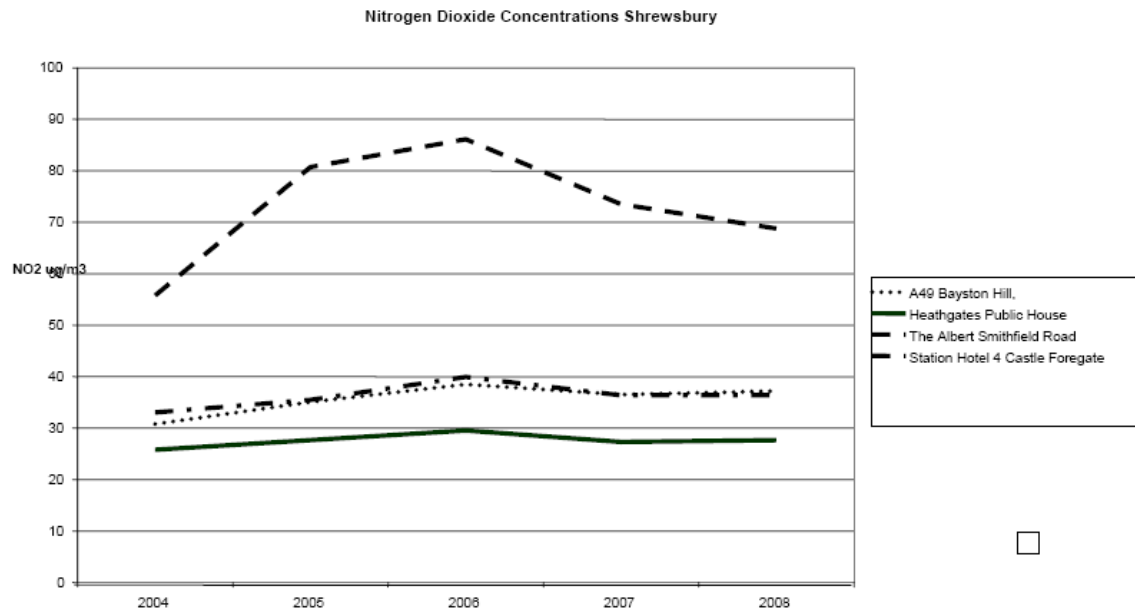
At the AQMA in Pant the annual mean NO₂ levels are not exceeding the EU objective

Figure 3.2 NO₂ concentrations in Oswestry AQMA



In Shrewsbury, NO₂ levels are significantly below the EU objective level at the Heathgates Island AQMA. They are near to the objective level at the Bayston Hill AQMA, and on Smithfield Road, which is within the town centre AQMA. However at Caste Foregate (also in the town centre AQMA) annual average NO₂ levels are significantly above the EU objective, (although levels have fallen slightly since 2006, in line with general traffic reductions observed in Shrewsbury Town Centre.

Figure 3.3 NO₂ concentrations in Shrewsbury



Ongoing monitoring across Shropshire has also identified other sites of potential concern. These include:

- Mill Street and Underhill Street in Bridgnorth
- Corve Street in Ludlow,
- Junction of the A53/A41 at Ternhill
- Cleobury Mortimer

Further monitoring is being undertaken at these sites to determine if any further AQMAs need to be declared

In light of the continuing upwards trend in nitrogen dioxide concentrations in town centre locations (which is a national trend) and the international and national developments in air quality, it is proposed to develop a single Shropshire air quality strategy.

Climatic factors

Sustainability objective: To reduce Shropshire’s contribution to climate change.

Sustainability objective: To adapt to the impacts of climate change.

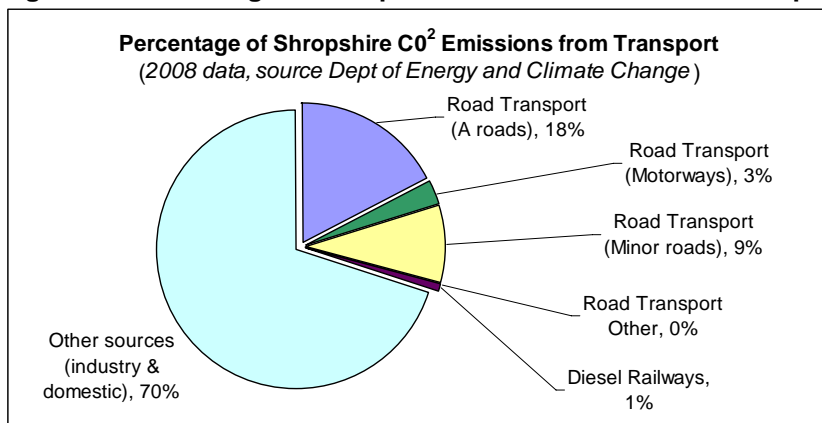
Sustainability objective: To encourage modal shift towards more sustainable forms of transport.

Sustainability objective: To reduce the need of people and businesses to travel.

Climate change is recognised as one of the greatest, if not, the greatest threat facing the world today. The world is warming and there is evidence of changing weather patterns and thawing of the arctic sea ice. Human activity is partly responsible and latest predictions suggest that the effects will be earlier and sharper than previously thought. Concentrations of greenhouse gases (e.g. CO₂ and NO_x) have risen by 50% in the last 200 years.

Transport is a fast growing emissions sector and the single biggest contributor to Shropshire's carbon footprint. 49% of all CO₂ emissions in the county are attributable to the transport sector². This compares to 24% of all UK domestic CO₂ emissions (DfT).

Figure 3.4 Percentage of Shropshire CO₂ emissions from transport

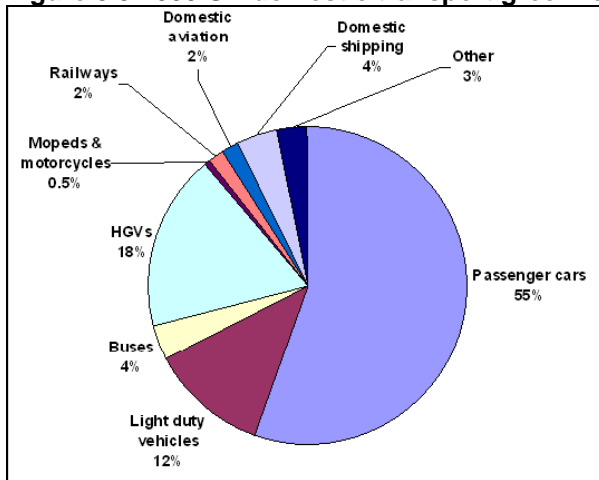


Transport accounts for 30% of the estimated CO₂ emissions in Shropshire- 754,000 tonnes Co₂ in 2008.

² Shropshire climate change strategy, 2002

Nationally cars currently represent 55% of domestic transport greenhouse gas emissions, with vans accounting for a further 12%, a number which is growing as this sector expands. Buses accounted for 4% of domestic transport emissions in 2008. HGVs representing 18% of total domestic transport greenhouse gas emissions.

Figure 3.5 2008 UK domestic transport greenhouse gas emissions



The Climate Change Act 2008 has created a legal requirement for at least a 34% reduction in UK greenhouse gas emissions by 2020, and at least an 80% reduction by 2050 from a 1990 baseline. This is supported by a system of UK carbon budgets imposing the requirement that total UK carbon emissions would be reduced from the same baseline across five-yearly carbon budget periods:

- a 22% reduction over the first carbon budget period, 2008-2012;
- a 28% reduction over the second carbon budget period, 2013-2018; and
- a 34% reduction over the third carbon budget period, 2018-2022.

DfT has been allocated responsibility for a 76% share of total transport sector emissions over 2008-2012.

If current levels of climate change are maintained it is expected Shropshire will see:

- An increase in average maximum temperature of up to 4°C by the 2080s. Most warming will occur during the summer, although very cold winters will become less frequent.
- Summer rainfall to decrease by up to 30% by 2050, and 50% by the 2080s.
- Winter rainfall to increase by up to 20% by the 2080s.
- More short duration extreme weather events such as storms and floods

A lot of this is currently already occurring. Climate change is expected to have serious impacts on:-

- Agriculture: as cultivation zones for different crops shift with changing climatic patterns.
- Biodiversity: niches disappear and imbalances between predator and prey appear.
- Property at risk from an increasing frequency of violent weather events, flooding and subsidence.
- Health: there are also expected to be many direct and indirect consequences for the health of the population, which will need to be both understood and addressed.

Landscape

Sustainability objective: To protect, enhance and manage Shropshire’s landscapes and townscapes.

The term “landscape” in this section, considers the visual and cultural rather than the ecological value. It also means a sense of place. Shropshire’s landscape plays an important role in the quality of life of local people and is one of the main reasons that Shropshire is an attractive place to visit, so contributes to the local economy (see figures A1.1, A1.2 and A1.3 in Appendix 1).

The beauty of Shropshire's landscapes lies in their diversity and tranquillity. Shropshire Hills Area of Outstanding Natural Beauty (AONB) is recognised nationally through its designation for the exceptional quality and character of its landscape. The AONB covers a quarter of Shropshire and also extends into the Borough of Telford & Wrekin (part of the Severn Valley and The Wrekin).

Understanding the basic character of a particular landscape is the essential starting point for developing policies to conserve that unique character. Natural England’s National Character map recognises seven different character areas in Shropshire. The following tables describe these areas, indicating their key characteristics and existing pressures on the landscape.

Table 3.2 Key characteristics and pressures on national character areas in Shropshire (Source: Natural England/SC)

Landscape area	Key characteristics	Pressure on the landscape
Oswestry Uplands	<ul style="list-style-type: none"> • Intricate pattern of flat-topped hills and steep sided valleys. • Small fields, many trees and strong hedges. • Many limestone quarries. • Parklands nestle around Oswestry. 	<ul style="list-style-type: none"> • Agricultural intensification is creeping further up the hills. • Some marginal land is unmanaged. • Small native woodlands often go unmanaged and some conifer plantations are poorly designed. • Characteristic hazel hedges are declining.
Shropshire, Cheshire and Staffordshire Plain	<ul style="list-style-type: none"> • Gently rolling plain interrupted by sandstone ridges. • Strong field patterns, dominated by dairying and arable land. • Meres, mosses and small ponds scattered throughout. • Boundaries are hedges with many hedgerow trees. • Buildings are timber framed, red brick or warm local stone. 	<ul style="list-style-type: none"> • Agricultural intensification is destroying small meadows, heathlands and ponds. • Hedges are being "managed to death". They are cut too early, too often and too hard. • Few new hedgerow trees are being planted. • Development pressures change the character of small towns and villages.
Shropshire Hills	<ul style="list-style-type: none"> • Dominant SW-NE ridges, scarps and valleys. • Steep, rounded hills. • Prominent landmark hills. • Small fields give way to arable land in dales. • Prehistoric Hill Forts, Medieval castles and other border 	<ul style="list-style-type: none"> • Agricultural intensification leading to “improved” pasture on slopes and amalgamation of fields. • Conifer woodlands can be very geometric. • Riverside trees are not being well managed. • Conversion of farm buildings into dwellings has not always been

Landscape area	Key characteristics	Pressure on the landscape
	defensive works.	<p>appropriate.</p> <ul style="list-style-type: none"> • Development pressures are affecting the character of small settlements. • Traditional orchards are being neglected and lost. • Moorland is over-grazed or poorly managed. • There is pressure for hill top communications masts.
Clun and North-West Herefordshire Hills	<ul style="list-style-type: none"> • Rolling rounded hills divided by narrow valleys • Small, wooded, enclosed upper valleys, broadening to flat-bottomed intensively farmed lower valleys • Irregular field patterns around settlements contrasting with large rectilinear fields • Hill Forts, mottes and planned boroughs. 	<ul style="list-style-type: none"> • Geometric conifer plantations can dominate • There is variability in hedgerow quality • Intensive arable land moves higher up slopes associated with large farm buildings • Unsympathetic conversion of redundant farm buildings • Grazing pressure along rivers is leading to loss of trees.
Herefordshire Lowlands	<ul style="list-style-type: none"> • Wide river valleys. • Intensive arable farming and low hedges. • Historic parks. 	<ul style="list-style-type: none"> • Agricultural intensification with loss of hedges, trees and meadows. • Neglect of parklands and conversion to arable. • Conversion of redundant farm buildings.
Teme Valley	<ul style="list-style-type: none"> • Small, narrow valley dissecting gently rolling plateau. • Hop fields. • Enclosed pasture in valleys. • Sparsely populated, scattered hamlets. 	<ul style="list-style-type: none"> • Agricultural intensification with loss of hedges, trees and meadows. • Conversion of redundant farm buildings. • Decline and loss of orchards.
Mid Severn Sandstone Plateau	<ul style="list-style-type: none"> • Rolling landform with open, arable cultivation dominating • Prominent urban fringes. • Parklands and estate conifer and deciduous woodlands. • Patches of heathland. • Stour and Severn valleys with frequent villages and historic bridging towns. • Narrow, steep-sided wooded dingles • The Staffordshire and Worcestershire canal • New town landscape of Telford. 	<ul style="list-style-type: none"> • Intensive cultivation of arable land leading to soil erosion and deterioration of hedgerow. • Nitrate pollution, and other consequences of intensive farming. • Inappropriate development in towns and villages. • Over-abstraction of water causing water courses to dry up.

In 2006 Shropshire County Council undertook a countywide landscape character assessment of rural areas. Data on a range of environmental issues from policy objective to specific development can be provided as there is a character description for each landscape description unit and each landscape type. The data provides information on potential sensitivity to development, cultural type and management vision, for example a statement indicating whether a particular landscape description unit needs strengthening.

The potential significant transport effects on the landscape are:

- Traffic and parking reduce the perceived quality of the landscape
- New transport infrastructure projects either adding to, or detracting from the quality of the landscape
- Landscape features are subject to the cumulative effects of air pollution
- Street lighting resulting in light pollution
- Road improvement schemes in rural areas have an urbanising influence with associated signage, lighting and kerbs
- Benefits to many landscape features through reduced traffic and improved public transport

Cultural heritage

Sustainability objective: To preserve and enhance features and areas of archaeological historical and cultural heritage importance.

The regional planning guidance for the West Midlands identifies the need to conserve and enhance the region's diverse historic environment and manage change in such a way that respects local character and distinctiveness.

Shropshire's historic environment is one of the county's greatest assets with features ranging from; prehistoric monuments, structures of the industrial revolution, historic townscapes to fields and gardens, castles to mansions (see figure A1.4 in Appendix 1). All of which combine to create a rich and diverse historic landscape. Well known features include Offa's Dyke, Wroxeter Roman City and the Ironbridge Gorge and the towns of Ludlow and Shrewsbury. However, there are many less well known sites also with great significance. The historic environment is a major contributor to the county economy through tourism and contributing to an attractive place for people to come to live and work. Table 3.3 shows the numbers of designated historic buildings and areas in Shropshire.

Due to a complex mix of development pressures and a lack of maintenance and resources Shropshire currently has 35 listed buildings from the 602 buildings in the top two categories of listed building (grade I and II*), which on the English Heritage 2010 heritage at risk register.

Table 3.3 Designated historic buildings and areas in Shropshire.

Numbers of designated historic areas and buildings in Shropshire		On EH 2010 Heritage at Risk Register
Type of historic area/building	No.	
Listed buildings		
Grade I	117	
Grade II*	485	
Grade II	6283	
Total	6885	35
EH Register of historic parks and gardens		
Grade I	1	
Grade II*	6	
Grade II	27	
Total	34	3
EH Register of Battlefields (Battle of Shrewsbury, 1403)		
	1	
Scheduled monuments	342	53
Conservation areas	118	10

Between 2001 and 2004 Shropshire County Council undertook an historic landscape characterisation (HLC) project; a report on the technical aspects of this project was published in 2007. The report formed part of English Heritage's national HLC programme. It mapped the historic character of the county's landscape and resulted in the definition of over 30,000 individual survey units and 58 different historic landscape character types.

The aim of the project was to fill the gap in understanding of the wider historic landscape, and the archaeological merit, so that separate and rarely mapped places have on the overall understanding of the landscape. The objectives were to provide *“strategic information for development plans, detailed data for development control; helping to assess environmental impact of major developments; influencing the character and location of landscape change and development; contributing to rural and urban planning and development policies”* (English Heritage).

The potential significant effects of transport on this historic environment include:

- Damage to historic roadside buildings by traffic vibration, in particular heavy goods vehicles.
- Damage to historic buildings (particularly stone) from the effects of air pollution.
- Damage to historic buildings by accidental collisions.
- Loss of historic bridges due to road widening.
- The ambience of conservation areas can be adversely affected by the presence of traffic and inappropriately placed street furniture.
- Cultural monuments may be severed from their setting due to the intrusion of vehicles including those of people visiting the monument.

Biodiversity (flora and fauna) and soil

Sustainability objective: To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire’s geological heritage.

Sustainability objective: To protect and improve soil quality and soil retention.

Understanding the effects of transport on biodiversity requires an understanding of how ecosystems function. An ecosystem approach, supported by the Convention on Biological Diversity (1992), considers biodiversity as a whole rather than “islands” of designated sites.

The interaction of biodiversity and the road network is significant with, for example, a quarter of the UK badger population being killed annually and between thirty and seventy million birds.

The Shropshire Biodiversity Action Plan, published in November 2002 (and updated on a rolling basis), sets out the priorities for biodiversity conservation in Shropshire. The aim is to conserve not only what is rare or endangered but what is familiar, locally distinctive and special to the Shropshire community.

The Shropshire Biodiversity Action Plan includes individual action plans for a range of both habitats and species relevant to the county. The list of individual action plans are not definitive, and are expanded as priorities change. In response to the UK agenda, Biodiversity Challenge: the Shropshire response listed over 300 species of ‘conservation concern’. These include internationally important and nationally rare or threatened species. Species action plans were written for species identified as a priority. There are currently 30 species actions plans for Shropshire. These action plans look at population trends for the species, and state the current action taken to reverse any downward trends (see figure A1.5 in Appendix 1).

In addition Shropshire currently has 13 habitat action plans. Shropshire woodlands have traditionally formed part of the local economy, and are one of the regions most significant areas for woodland cover. It is the objective of the West Midlands Regional Forestry Framework (WMRFF) to significantly increase regional woodland cover within the region.

Table 3.4 Key issues for biodiversity in Shropshire

Key characteristics	Key issues in Shropshire
<ul style="list-style-type: none"> • Wide range of rock types and topography • Meeting point for species of several different geographical ranges • 15 distinct bio-geographical elements recognised within the county flora • Large range of flora • Wide diversity of habitats: from the wetlands of the Meres and Moses to the ancient woodland of Wyre Forest, the Wrekin and the Ercall. 	<ul style="list-style-type: none"> • Impact of the reform of the Common Agricultural Policy (CAP) • Developing national rural policy • Effects of climate change • Changes in agri-environment schemes • Meeting the needs of the community, developers and visitors whilst maintaining the unique qualities of the landscape • Developing technology and its impact on the landscape.

The extent of Shropshire’s biodiversity is reflected in the number of statutory and non-statutory sites designated for nature conservation: 4 national nature reserves (NNRs), 110 sites of special scientific interest (SSSI) of which 14 are RAMSAR sites, and 585 non-statutory wildlife sites. These combined cover 6% of Shropshire’s land area. The Shropshire Hills area of outstanding natural beauty (AONB) covers 23.2% (further details can be seen on figures A1.1 and A1.2 Appendix 1).

Table 3.5 Nature conservation designations in Shropshire

Designation	Number of hectares under designation	Percentage of county
National Nature Reserves (NNR)	1,658	0.5
Sites of Special Scientific Interest (SSSI) (includes Ramsar sites and cSACs)	8,715	2.5
Wildlife sites	c. 10,000	2.9
Area of Outstanding Natural Beauty (AONB)	80,916	23.2

As well as these areas there are 698 ancient woodlands, 2 environmentally sensitive areas, 13 local nature reserves, 38 Shropshire Wildlife Trust nature reserves and 324 locally important geological and geomorphological sites. (All data includes Telford & Wrekin).

Shropshire has six (candidate) special areas of conservation (cSACs) covered by European legislation (Natura 2000). These are detailed in the table below and shown on figure A1.1 (Appendix 1). Brown Moss and the Stiperstones & the Hollies lie solely in Shropshire, whilst the other four are partly situated within the county.

Table 3.6 Natura 2000 sites in Shropshire (Source: Joint Nature Conservation Committee)

EU Code	Name	Country	Local Authority	Grid Ref	Area (ha)
UK0030100	Brown Moss	E	Shropshire	SJ561394	32.03
UK0030250	River Clun	E	Herefordshire; Shropshire	SO393754	14.93
UK0012810	The Stiperstones and The Hollies	E	Shropshire	SJ375006	601.46
UK0013595	West Midlands Mosses	E	Cheshire; Shropshire; Staffordshire	SK026282	184.18
UK0012912	Fenns, Whixall, Bettisfield, Wem and Cadney Mosses	EW	Shropshire; Wreccsam/Wrexham	SJ487364	949.2
UK0030252	River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid	EW	Cheshire; Ddinbych/Denbighshire; Gwynedd; Shropshire; Sir y Fflint/Flintshire; Wreccsam/Wrexham	SJ423503	1308.93

Any of these Natura 2000 sites that are affected by development resulting from the Local Transport Plan would be required to be subject to an “appropriate assessment” under the Conservation of Habitats and Species Regulations 2010.

Natural England carries out annual reports on the condition of the sites of special scientific interest (SSSIs) throughout the country. The condition of Shropshire’s SSSIs is summarised below in table 3.7; this table also shows the regional and national SSSI condition data for comparison purposes.

Table 3.7 Condition of Shropshire SSSI's (Source: Natural England, November 2010)

	% Area meeting PSA target	% Area favourable	% Area unfavourable recovering	% Area unfavourable no change	% Area unfavourable declining	% Area destroyed / part destroyed
Shropshire	96.88%	27.52%	69.36%	2.16%	0.89%	0.06%
West Midlands	89.65%	34.46%	55.19%	8.39%	1.71%	0.25%
England	95.03%	42.73%	52.30%	3.22%	1.73%	0.03%

It can be seen that Shropshire has a higher percentage of area meeting the PSA target than the regional and national averages. Shropshire has significantly less area considered to be unfavourable and declining, and has a higher percentage of land recovering from an unfavourable status. However, the percentage area considered favourable is significantly less in Shropshire than both the regional and national figures. There is a range of reasons for unfavourable conditions in Shropshire's SSSIs. These include over/under grazing, drainage, moor burning and inappropriate stock feeding.

Potential significant impacts of transport on flora and fauna are:

- Wildlife casualties through collisions with motor vehicles
- Land take and associated habitat loss through new transport infrastructure schemes
- Fragmentation/severance of habitats through new schemes, increased traffic etc
- Changes in air quality, water quality, noise, vibration, light emissions, dust deposition as a result of construction and operation.
- Increase in disturbance to wildlife populations (e.g. traffic noise)
- Creation of barriers to movement
- Hydrological changes affecting surface and groundwater
- Changes to soil
- Inappropriate grass cutting regimes on verges
- Spread of invasive species (e.g. Japanese Knotweed spread by verge regime)
- Creation of habitats
- Curbing spread of invasive species

Potential transport related impacts on soil may include:

- New transport infrastructure schemes removing soil
- Old infrastructure schemes being returned to soil

However, the impact of transport on soil is not considered to be significant.

Water

Sustainability objective: To protect and enhance Shropshire's water resources.

Sustainability objective: To reduce the risk of flooding to people, property and wildlife.

Three aspects of water are considered below:

- Water resources
- Water quality
- Flooding

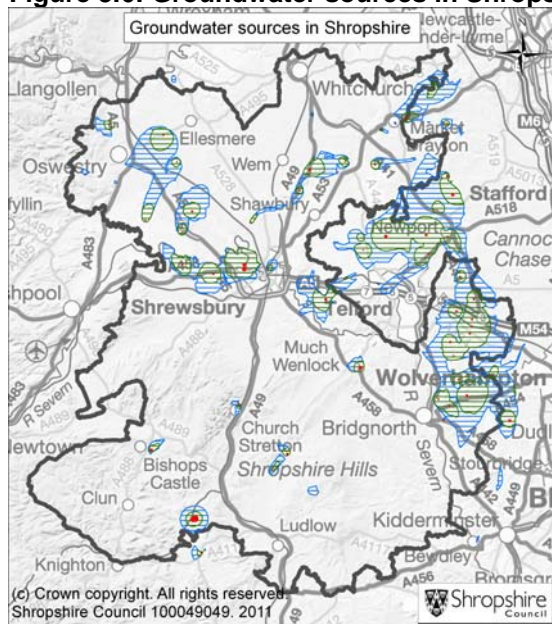
Water resources

In Shropshire, water resources are more plentiful than in some other regions of England but this relative wealth is vital to support the natural character of the county's streams, rivers and lakes. New developments create extra demands for water; therefore availability of local resources needs to be considered carefully in the planning process.

Summary of water resources in Shropshire:

- Rivers: The main rivers in the county are the Severn and its tributaries and the Teme and its tributaries.
- Lakes and pools: These are numerous. The larger ones exist at Ellesmere and Bomere and are part of the internationally important Meres and Mosses complex.
- Water supply intakes: Water is extracted by Severn Trent Water at Shelton, Shrewsbury and Hampton Loade near Bridgnorth
- Reservoirs: Chelmarsh, Bridgnorth (South Staffordshire Water plc).
- Shropshire groundwater scheme: The Environment Agency operates a series of boreholes in order to top up flows in the Severn. These extract large quantities of water stored naturally underground in the permo-triassic sandstone formation underlying much of north Shropshire. The scheme consists of a number of boreholes linked by pipelines to outfalls on the rivers Perry, Roden, Tern and Severn.
- Key habitats: Water habitats are numerous and widespread. Shropshire Wildlife Trust holds information on special wildlife sites in the county. The River Teme (whole length) is the largest. Numerous other sites of special scientific interest exist.
- Canals: Shropshire Union Canal and the Montgomery Canal are managed by British Waterways.
- Groundwater supplies: Groundwater is also an extremely important asset in Shropshire - many communities in the county are supplied with drinking water from groundwater sources (wells and boreholes). Numerous boreholes serving individual properties exist. Approximately 31 groundwater sources are utilised by Severn Trent Water for water supplies throughout the county. In north Shropshire a scheme has been developed where groundwater is used to maintain flows in the River Severn during very dry periods.

Figure 3.6: Groundwater sources in Shropshire (source: Environment Agency)



Key water resource issues in Shropshire

- Impact of water abstraction.
- Protection of high-quality water resources, compliance with water quality objectives and EU standards.
- Protection of existing high-quality riverine and other wetland habitats.
- Flood plain management and flood alleviation schemes.

Water quality

Both the construction and use of transport infrastructure can affect the quality of water. Roads with flows of between 15,000 and 30,000 vehicles per day have a moderate impact on water quality while roads with flows of below 15,000 vehicles per day have a minor impact.

Water quality is of fundamental importance. The River Severn and its tributaries are used extensively for a wide variety of purposes; the most important being water supply. The River Severn is a major source of water for Shropshire and also parts of west England, as far as Bristol. Generally, the quality of water courses in the county is fairly good. Quality is measured by chemical and biological sampling methods undertaken by the Environment Agency (EA).

River quality objectives (RQOs) are used in England and Wales as targets for water quality in 40,000 kilometres of rivers. The targets are based on our need to rely on rivers for water supplies, recreation, fisheries and our enjoyment of wildlife.

Shropshire's river stretches have been allocated a grade from A to F to signify the quality of a particular stretch of water. Table 3.8 below indicates the numbers of stretches in each category. The results are based on an examination of the chemistry of the river.

Table 3.8 River quality (chemistry) of rivers in Shropshire (2007-2009) (Source: Environment Agency)

Grade	No. of river stretches	% of total
A (Very Good)	82	66.7
B (Good)	31	25.2
C (Fairly Good)	8	6.5
D (Fair)	1	0.8
E (Poor)	1	0.8
F (Bad)	0	0
Total	123	

River quality sampling are analysed for three determinants of organic pollution: ammonia, biochemical oxygen demand (BOD), and dissolved oxygen.

The likely uses and characteristics of a river stretch classified grade A (very good) are very good salmonid fisheries, cyprinid fisheries and natural ecosystems, whilst grade E (poor) areas signifies low grade abstraction for industry and, due to discharges of organic pollution, absent or sporadically present fish, and impoverished ecosystems.

Shropshire has 98% of its rivers classified between 'very good' and 'fairly good', slightly better than the national average 93%. 1% of Shropshire's rivers are classified as of 'poor' standard compared to 3% nationally. The river stretch in Shropshire classified as poor is:

- Meese River – Qualate Mere outfall to Lonco Brook

Shropshire has no river stretches classified as "bad". Nationally the biological and chemical quality of rivers has improved since 1990. This is due to a number of factors including a major clean-up of discharges from industry and sewage-treatment works.

Transport has the following implications on water quality:

- Pollution from traffic may enter the groundwater directly, may move slowly within the groundwater to emerge eventually in surface water, may run off the land, or may be deposited from the atmosphere
- Increases in traffic may lead to increases in water pollution
- Maintenance activities and road use can contribute to the build up of sediment in watercourses

Flooding

Too much water also causes great problems in Shropshire at times (see figure A1.6 in Appendix 1). Certain localities in the county are at risk from flooding. In Shrewsbury for example, development over the years has encroached on to the flood plain and there are approximately 1000 residential and commercial properties at risk of flooding, as well as major transport routes through the town. Downstream, a small part of Ironbridge and properties in Bridgnorth are also at risk.

The imperviousness of road surfaces and use of piped road drainage increases the rate of water flow to receiving water courses and therefore would contribute to flooding in storm conditions. This is a cumulative effect.

Local authorities are working with the Environment Agency to ensure that new development is not at risk from flooding and also does not increase the risk for others. Increased frequency of recent floods has highlighted the need to look at alleviate the effects. The EA has recently completed a two flood alleviation schemes in Shrewsbury; in Frankwell in 2003 and in Coleham in 2010. The flood defences also consist of innovative temporary flood barriers deployed at the English Bridge, in Shrewsbury, which protect a number of further properties. Shropshire Council has undertaken strategic flood risk assessments for the whole of Shropshire to help inform the planning process and outline actions to reduce the risk of future flooding. In addition, the Shropshire water cycle study was commissioned to assess the impact of future development on the water environment and water infrastructure.

Flooding is likely to become more of an issue in future years.

Figure 3.7 High flow rivers in Shropshire (source: Environment Agency)



The impacts of transport on flooding include:

- Piped road drainage
- Road surfaces are impermeable and, hence increase the risk of flash flooding.

Human health and population

Human health and population covers the areas:

- noise
- accidents
- physical fitness
- security
- accessibility and equality

(See figures A1.7, A1.8 and A1.10 in Appendix 1).

Noise

Sustainability objective: To minimise noise levels

The impact of noise on quality of life is increasing. Noise is a less obvious form of pollution because people learn to live with gradual change. Noise does not just cause annoyance; it can affect people's health.

The main generator of background noise in Shropshire is traffic. The majority of Shropshire is rural and it should be noted that smaller volumes and changes to volumes of traffic are more noticeable in tranquil areas.

The EU Environmental Noise Directive 2002/49/EC (END) set out new legislation to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. It required a programme for action including:

- determination of noise exposure (noise mapping)
- informing the public about environmental noise and its effects, and
- adopting action plans based on noise mapping results, to prevent and reduce noise where necessary - prioritising the prevention of noise that is harmful to human health, and
- preservation of areas where environmental noise quality is good.

The first round of noise action planning is currently being undertaken, identifying and addressing the most important areas where human health could be affected. Defra has identified the major airports, large urban areas and major road and rail routes that are the most significant sources of noise effecting local populations.

In Shropshire roads identified for assessment in the first round are:

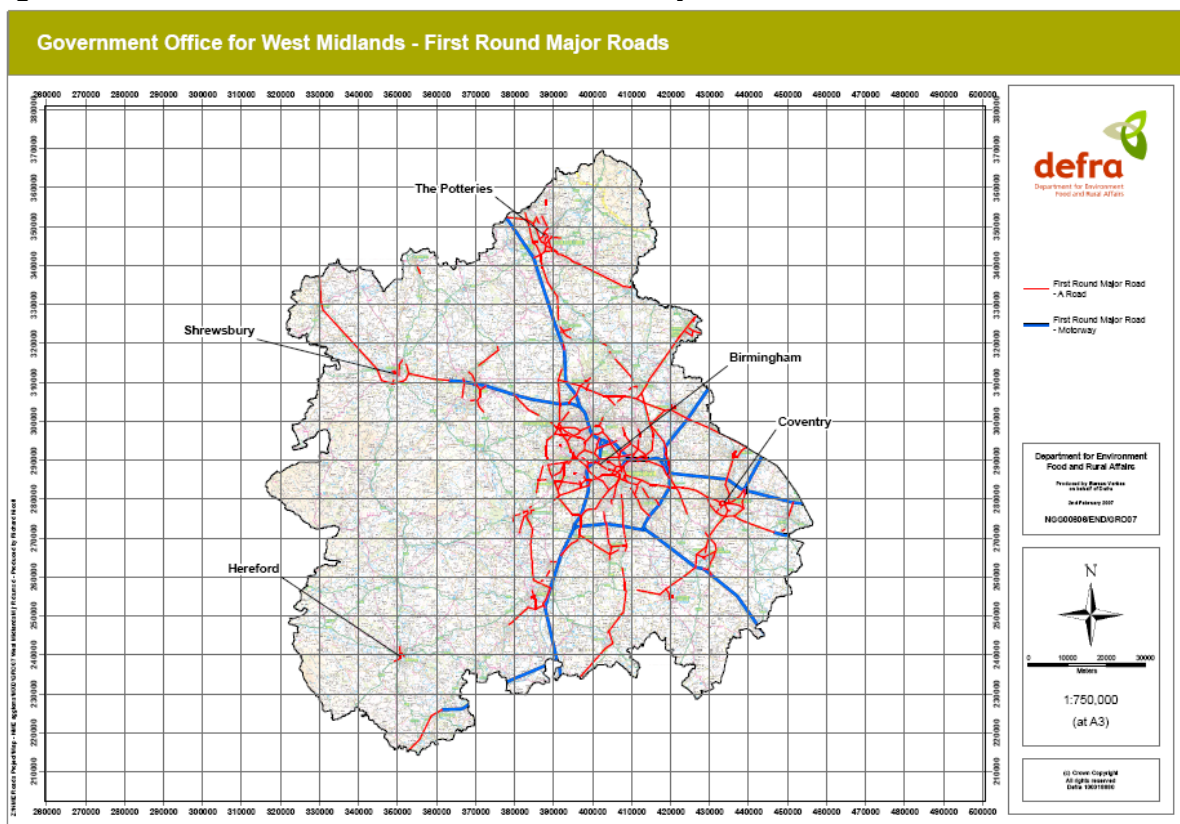
Highways Agency roads- M54, A5 and A483

Shropshire Council roads:

- A41 near Albrighton
- A49 Shrewsbury bypass
- A5112 through Shrewsbury (excluding Hazeldine Way)
- Shrewsbury town centre
- A49/A41 south of Whitchurch

These are shown on figure 3.7.

Figure 3.8 DEFRA first round noise assessments – major roads



The Defra Noise Action Plan³ sets out the process that local authorities and highway authorities must follow to assess the identified first round major roads, and to identify any reasonable interventions that could be implemented to reduce noise or noise impact. Possible interventions might be:

- erecting noise barriers;
- installing low noise road surfaces;
- local traffic management measures, such as re-routing traffic, restricting heavy vehicles or reducing speeds;
- improving the sound insulation of properties

For each important area, the highway authority will need to identify proposed actions or state why, in their view, no further action can or needs to be taken in order to meet this objective. It is expected that these deliberations will result in four general outcomes:

- a. It is possible to be able to implement an action and there are financial resources immediately available to do so;
- b. It is possible to be able to implement an action but there are no immediately available financial resources to do so;
- c. It is not possible to implement any action because there is no scope for doing so (e.g. reasonable sound insulation already exists at the affected dwelling, or a noise barrier at its optimum size and location already exists), or there is some overriding technical issue that prevents implementation (e.g. ground conditions do not allow a barrier to be erected); or
- d. It is not possible to implement any action because there would be large adverse non-acoustics effects that could not be accommodated by the proposed measure. Such non acoustic effects

³ The generic Noise Action Plan developed by Defra for all Major Roads outside of agglomerations can be found at: <http://www.defra.gov.uk/environment/quality/noise/environment/documents/actionplan/noiseaction-major-roads.pdf>

could include an adverse effect on safety, or a significant adverse air pollution impact, or an unacceptable increase in congestion or journey times.

A second round of assessment plans must be in place by July 2013, and will cover wider areas, subsequently these must be reviewed every five years.

Accidents

Sustainability objective: To promote safer communities by reducing death and serious injury from accidents.

Road traffic accidents are one of the highest causes of accidental death, accounting for approximately half of all accidental deaths in Shropshire.

The number of road accidents resulting in death or serious injury has reduced in Shropshire in recent years due to improvements in road safety. In 2009 there were 28 people killed and 110 people seriously injured on Shropshire roads. This compares to an annual average of 399 people killed or seriously injured between 1994 and 1998.

Comparing 2009 road accident data for Shropshire with other 12 other rural English counties shows that Shropshire has one of the lowest rates of road accidents and casualties, with an accident rate of 35 accidents per 100 million vehicle km driven, and one casualty per every 4.6km of road. However, the proportion of all casualty accidents which resulted in a fatality (2.4%) was the highest of all authorities.

Table 3.9 Accident and casualty rates in rural English counties

Local authority area	Accident rate per 100 million vehicle kilometres	Accident rate per 100,000 population	Accident rate per thousand licensed vehicles	Km's of road per casualty	Km's of road per fatality	Km's of road per Seriously Injured	Km's of road per Slight Injury	Fatal as % of all casualties
Norfolk	34	332	3.9	3.7	202	29	4.3	1.8%
North Yorkshire	35	464	5.0	3.4	218	19	4.2	1.6%
Shropshire	35	371	3.6	4.6	193	45	5.3	2.4%
East Riding of Yorkshire	36	357	4.0	3.0	150	20	3.6	2.0%
Devon	37	376	4.2	4.7	437	82	5.0	1.1%
Cumbria	39	440	5.1	4.0	352	36	4.5	1.1%
Herefordshire	39	404	4.0	4.1	258	36	4.7	1.6%
Dorset	47	442	4.4	2.7	188	18	3.2	1.4%
Suffolk	47	393	4.4	2.6	166	21	3.0	1.6%
Cornwall and Isles of Scilly	48	424	4.5	3.5	323	46	3.8	1.1%
North Lincolnshire	52	542	5.7	1.8	179	16	2.1	1.0%
Northumberland	53	464	5.7	3.9	292	31	4.5	1.3%
Lincolnshire	53	447	4.9	2.7	170	22	3.1	1.6%

Security

Sustainability objective: To promote safer communities by reducing the fear of crime/road traffic accidents.

Fear of crime is an important aspect of quality of life and is linked to the quality of the environment. All local authorities are required to have a Community Safety Partnership (CSP). Shropshire's CSP is known as Safer Stronger Communities Partnership. Increasing public confidence and creating strong and cohesive communities are two of the partnership's main priorities.

From a transport perspective, speeding traffic and illegally parked vehicles are concerns which affect the quality of life of Shropshire residents. Consultation undertaken by West Mercia Police through their community survey shows that consistently Shropshire residents' highest community safety concern is 'speeding traffic'. During 2009, 209 separate community engagements were initiated under Partners and Community Together (PACT) arrangements in Shropshire, 60 in the northern area, 78 in the southern area and 50 in the central area. These vary from full PACT meetings to environmental visual audits. The top 3 recurring issues from these engagements are shown in table 3.10.

Table 3.10 PACT meetings recurring issues

Shropshire	North area	Central area	South area
Vehicle related – speeding traffic	Vehicle related – speeding traffic	Youth related – youths inappropriate gathering	Vehicle related – speeding traffic
Youth related – youths inappropriate gathering	Vehicle related – cars parked illegally/ inconveniently	Vehicle related – speeding traffic	Youth related – youths inappropriate gathering
Vehicle related – cars parked illegally/ inconveniently	Anti-social behaviour - other	Anti-social behaviour - other	Vehicle related – cars parked illegally/ inconveniently

Shropshire has relatively low levels of crime deprivation. There are very low levels in areas in the south of the county, particularly the south west of the county and within rural areas of the northwest. Higher levels of deprivation occur within urban areas and towards the eastern parts of the county.

Physical fitness

Sustainability objective: To create active and healthier communities for all and reduce inequalities in health services.

Physical fitness levels have a major impact on the occurrence of obesity and circulatory diseases (coronary heart disease, stroke and other related conditions). The national trend is for an increase in obesity. The proportion of the people who are obese has increased from 6% of men and 8% of women in 1980 to 24% of men and 25% of women in 2008. It has been estimated that, if current trends continue, about 60% of adult men, 50% of adult women and about 25% of all children under 16 could be obese by 2050.

Within Shropshire's towns walking plays a significant role as a transport mode. For example, 15% of workers living in Shrewsbury travel to work by foot, compared to 10% nationally. Similarly in many towns levels of cycling are higher than the national average, particularly in Shrewsbury where 7% of residents travel to work by cycle. However, there is the potential to significantly increase cycling and walking rates, especially in view of the fact that across the county approximately 46% of employees travel less than five miles to work.

Figure 3.9 % of people taking a 30 minute walk at least once a week

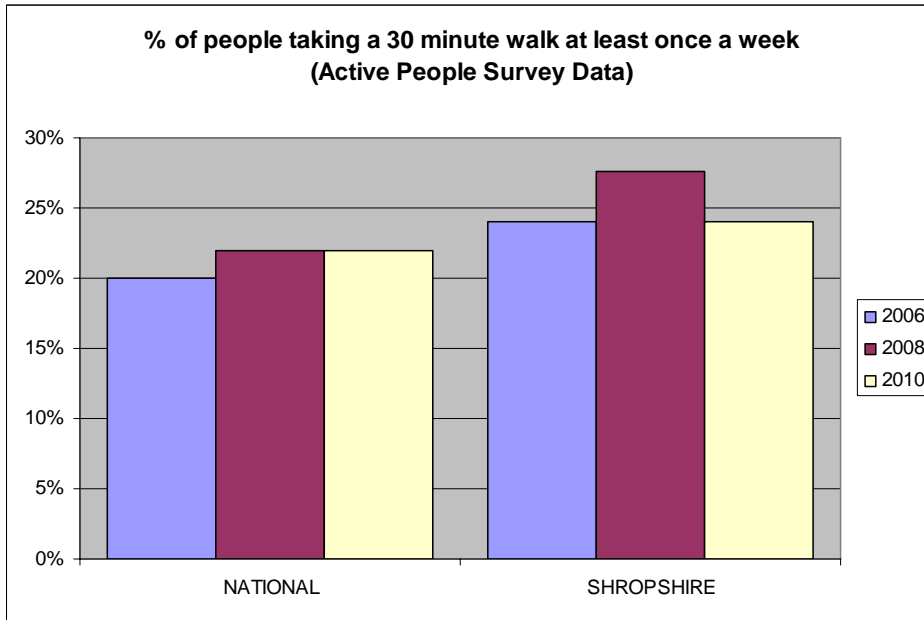
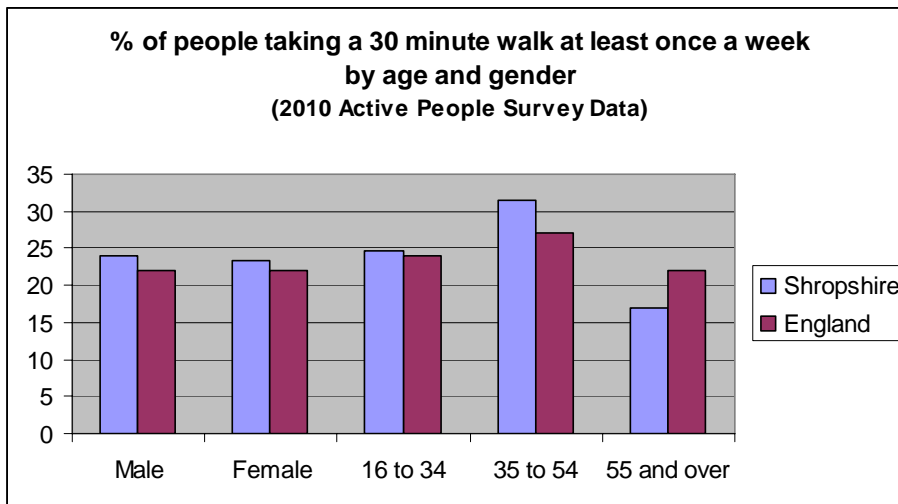


Figure 3.10 % of people taking a 30 minute walk at least once a week by age and gender



Accessibility and equality

Sustainability objective: To enhance access to essential services.

Sustainability objective: To promote community participation in a diverse range of sporting, recreational and cultural activities.

Sustainability objective: To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society.

The term accessibility is used to describe the ease with which people can get to the places they need to go, such as places of work, learning, health care, food shopping and leisure and

exercise. Poor accessibility can have a significant impact on people's quality of life and their life chances.

Levels of accessibility are generally determined by:

- **The location of services and opportunities** - e.g. services and facilities that are available very locally and can be accessed by foot tend to be much more accessible than those which are more distant from communities and need to be accessed using motorised transport
- **The availability of a means of transport** - e.g. people who have ready access to a flexible and rapid means of transport such as a private car tend to find it easier to access services and facilities than those people who rely upon public transport
- **Other barriers such as information, cost, levels of personal mobility etc.**

One of the transport dilemmas of recent decades is that accessibility for many people has improved, due to increased car ownership, better infrastructure and reduced overall costs of car use. Improved personal mobility has enabled access to a wider choice of facilities. However this increased mobility has also often led to a decline in local services accessible by foot, and the loss of public transport services. The result has been a widening of the accessibility gap. While car users have better accessibility, those without access to private transport have fewer opportunities locally and find it much more difficult to travel independently to the places they need to go to.

As a rural county accessibility in Shropshire is relatively poor in comparison with more urban areas.

A detailed assessment of accessibility in Shropshire was undertaken during the production of the second Local Transport Plan. The introduction of the ShropshireLink service has improved accessibility to market towns during the daytime. However there has been little improvement to accessibility for other destinations over the past 5 years.

Material assets

Sustainability objective: To ensure the efficient use of land and material resources.

The construction and maintenance of highway infrastructure is a major user of material assets (aggregates) and creator of waste materials.

Aggregates are a finite resource and the maintenance of highways demands a constant supply. This demand is likely to increase with the development of new infrastructure. Shropshire Council is, therefore, a major user of aggregates. Because aggregates are a finite resource, affects are permanent and cumulative.

Waste disposal also has transport implications in terms of the amount of waste that needs to be transported, combined with the distance between waste generators and waste disposal sites.

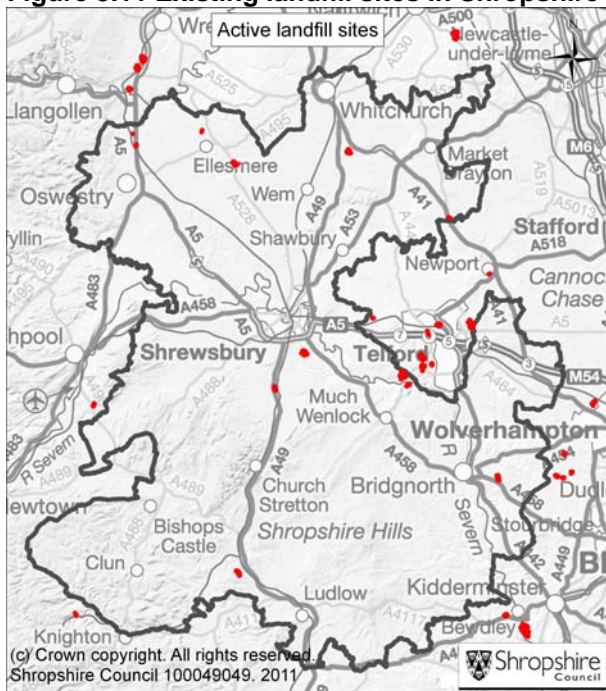
Shropshire Waste Management strategy sets out policies to minimise the generation of waste and maximise local opportunities to re-use, recycle and recover value from waste. There is scope to use secondary and recycled materials in place of aggregates in highway schemes.

In 2009/10 50% of Shropshire's waste was recycled and 50% was disposed in landfill. This was well above the national average of 39.3%. The amount of waste recycled has risen every year since 1998/9 when the total was only 7.8%. However, there is still scope for further recycling and

for recycling/recovering waste more locally. In addition, further capacity is needed to recycle and recover value from waste. Shropshire is still heavily dependant on waste disposal to landfill sites, taking a range of controlled waste. See figure 3.11 below.

There are current proposals, subject to planning permission and Environment Agency authorisation, to build an energy-from-waste facility in Shrewsbury. This would burn rubbish left over after recycling and composting to generate steam and electricity. Such a facility would dispose of waste locally, thus reducing the amount of miles that waste must be transported and reduce the amount of waste going into landfill, with the added benefit of creating electricity. However, the facility would emit carbon dioxide with minimal amounts of oxides of nitrogen, trace elements, heavy metals, dioxins and particulate matter and would also produce an amount of ash which would still need to be recycled and air pollution control residue which would be sent for disposal at a licensed site.

Figure 3.11 Existing landfill sites in Shropshire (source: Environment Agency)



On 22 October 2004 Shropshire County Council adopted its Waste Local Plan (WLP).

The plan details current trends in waste management in the county, current waste arising and capacity by waste stream, relevant legislation concerning future waste management, key objectives for the county and a list of sites which, in principle, are suitable for waste management in the future. The Shropshire WLP takes into account the basic principals of future waste management, namely the implementation of best practicable environmental option (BPEO), regional self-sufficiency, the proximity principal and the waste hierarchy. The future of waste management is directly influenced by European and national legislation.

Implications of transport on waste are:

- Production of waste from highway maintenance activities
- Increase in the use of fuel to transport waste to landfill

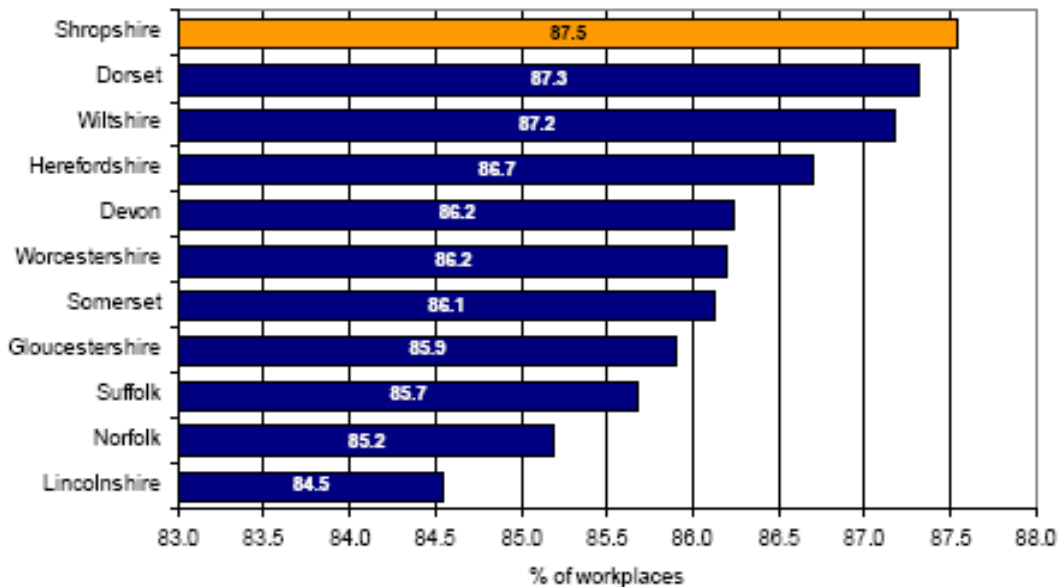
Economy and equality

Sustainability objective: To promote a strong and sustainable economy throughout Shropshire.

Sustainability objective: To encourage high quality inward investment, and support existing businesses to expand and diversify.

Shropshire has a predominantly small business economy, with 87% of businesses employing 10 or fewer staff (compared to 85% nationally and only 2.5% of business having over 50 employees (compared to 3.5% nationally), a higher percentage than any of our statistical (or regional) neighbours.

Figure 3.12 Penetration of small businesses: statistical neighbours, 2008



Source: Office of National Statistics, Annual Business Inquiry Crown Copyright 2010
 Note: * Businesses employing 10 or fewer

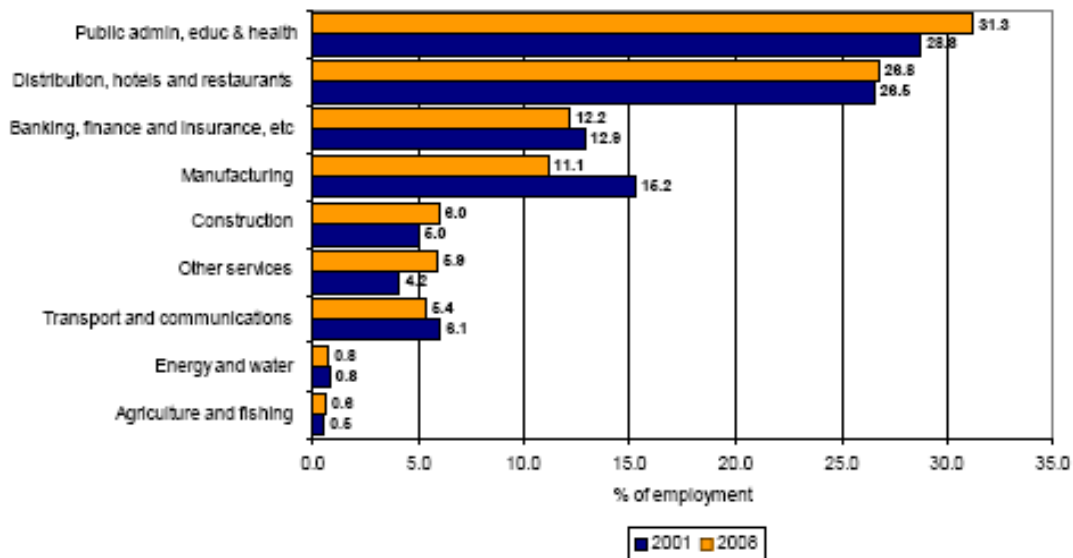
However, there are a few major employers which account for a disproportionately large share of the county workforce. In some smaller market towns in particular, there is heavy reliance on a small number of large employers, which can mean that the choice of employment opportunities is narrow. It also leaves these towns vulnerable should one of the main employers go out of business or relocate.

Shropshire has high levels of self-employment, 11.8% in Shropshire compared with 9.2% nationally. Many self-employed have home based businesses, Shropshire ranks second in the UK for home-based enterprise.

The nature of business enterprise in Shropshire reflects its rural character with agriculture, farm diversification and tourism playing an important part and employing significant numbers of people.

Like many other rural economies, Shropshire has a greater than average dependence on public sector employment, which may undermine the overall economic stability of the county once the expected sharp reduction in public sector budgets occurs. At the current time, around one in three workers in Shropshire is employed by the public sector.

Figure 3.13 Breakdown of Shropshire employment 2001 & 2008



Source: Office for National Statistics (Nomis). Annual Business Inquiry, 2008, © Crown Copyright 2010
 Note: Excludes farm based agriculture

The Shropshire economy is over-reliant on sectors which are forecast to decline in the future. There has been and a relatively slow up-take in knowledge based sectors which are expected to be the main focus of economic growth in the future. 30% of employees work in the knowledge economy, compared to 40% nationally, and the proportion is declining.

On average workers in Shropshire have significantly lower wages than those in other areas in 2008, average weekly workplace earnings stood at £410 compared with £449 in the West Midlands and £479 in the UK. In this respect, Shropshire is ranked 15th worst in the UK.

Figure 3.14 Median gross weekly workplace earnings. Shropshire’s statistical neighbours 2009

	£ per week
Gloucestershire	488.3
Wiltshire	459.9
Norfolk	445.2
Suffolk	440.3
Dorset	433.8
Worcestershire	432.2
Somerset	430.9
Lincolnshire	418.3
Devon	415.8
Shropshire	406.4
Herefordshire	383.3
UK	490.2

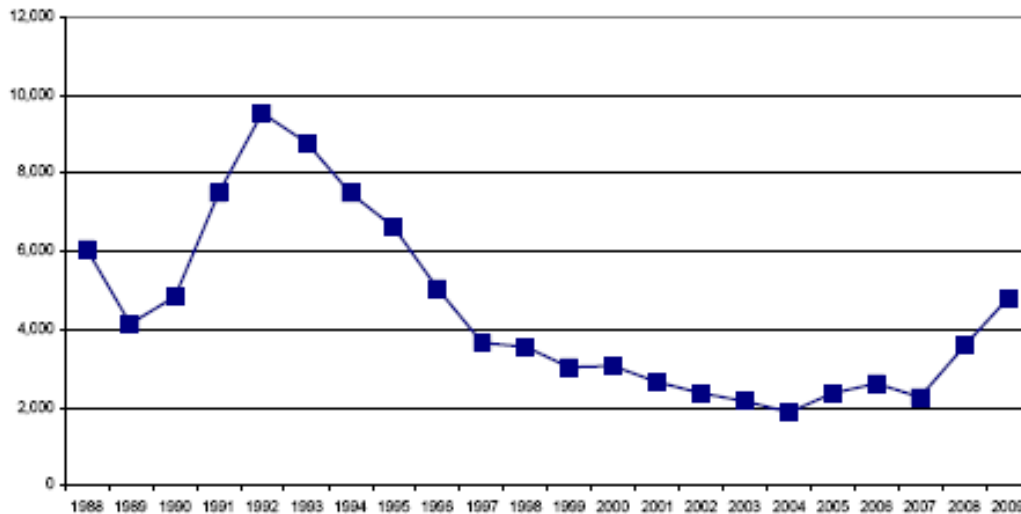
Source: Office for National Statistics; Annual Survey of Hours and Earnings, © Crown Copyright 2010
 Note: Full-time employees on adult rates

However residents’ average weekly pay is much closer to the regional and national average reflecting the fact that a significant proportion of high skilled, and better paid, workers commute out of the county to work.

For local workers, higher than average house prices combined with lower than average wages create significant affordability issues.

Unemployment rates in Shropshire are relatively low; although there are pockets of high unemployment in some towns, and youth unemployment is rising. However, lower claimant rates to some extent disguise a significant level of rural under-employment. A relatively high proportion of jobs are part-time (35.5% of jobs in Shropshire were part-time in 2007 compared with 31% in the UK), and there is a substantial amount of seasonal and casual work (both tourism and agriculture related). Many people work two or three part time jobs to make ends meet.

Figure 3.15 JSA claimant count in Shropshire 1988-2009



Source: JSA Claimant Count, Office for National Statistics, Crown Copyright 2010

Although worklessness in Shropshire is clearly not as widespread as it is in many more urban areas, there are some areas where worklessness is significant, affecting more than a quarter of the working age population.

Specifically, long term unemployment is a major issue in parts of the former wards of Harlescott, Meole Brace and Sundorne in Shrewsbury and in part of Castle in Oswestry. Overall, a tenth of the working age population in Shropshire is currently claiming work-related benefits. Although this proportion is lower than it is in either the West Midlands or Great Britain, it still amounts to a sizeable 17,070 people (August 2009)

Implications of economy and equality on waste are:

- High levels of out-commuting undermining the local economy
- Greater accessibility and willingness to travel further to access services making traditional businesses in rural areas and smaller market towns vulnerable
- Greater accessibility leading to increased reliance on the car, making it more difficult for people without access to a car to find employment.
- Increased cost of travel to businesses
- Perception of Shropshire as 'distant' by road and rail undermining potential inward investment.

Evolution of environment, health and equality

In this section we set out our assessment of the likely evolution of each sustainability topic in Shropshire without the Local Transport Plan. Evidence for the assumed trends, such as continued traffic growth, is presented in the Local Transport Plan evidence base.

The assessment given relates to the likely evolution in relation to the objectives for each topic set out in table 2.1 Sustainability objectives and links to SEA topics. The assessment score has been made using the seven-point scale set out below:

+++	Largely beneficial
++	Moderately beneficial
+	Slightly beneficial
0	Neutral (overall significant positive and negative effects are balanced)
-	Slightly adverse
--	Moderately adverse
---	Largely adverse

Local air quality

Due to reductions in background levels of NO₂ and reductions in emission rates per vehicle, the predictions are that if traffic growth rates continue along recent trends, that levels of NO₂ would reduce. However, should traffic levels or levels of congestion rise significantly, or a significant change in the type of vehicles used in Shropshire should occur, then air quality levels could deteriorate.

Assessment: slightly beneficial

Climatic factors

There is an upward trend in greenhouse gas emissions from activities in the community. Without Local Transport Plan interventions, traffic volume are likely to increase and, with the trend towards bigger vehicles and faster average speeds, carbon dioxide emissions from transport are likely to continue to rise. Impacts of climate change are likely to be cumulative and permanent.

Assessment: moderately adverse

Landscape

When considering the characteristics of Shropshire, landscape plays a key role in providing Shropshire with a unique identity. If current trends continue, landscape character will continue to be diminished with development pressures, additional traffic and no further traffic or parking management measures. Road changes linked to new development are likely to bring uncharacteristic signage and pavement treatments.

Assessment: slightly adverse

Townscape & heritage

The high value historic environment is one of the county's greatest assets. This is a major attractor to tourism for the county which is a major contributor to the economy of the county both to small villages and local trade.

Wider economic and social changes have resulted in major developments in housing, retail, transport and industry, all of which have adversely affected our historic resource in both urban and rural areas. If unchecked such pressures can cumulatively have a devastating effect. We are set to see a continued increase in this development growth.

Without a LTP current trends will continue to bring further traffic growth. We will see continued damage to historic buildings by traffic vibration (in particular heavy goods vehicles); damage to historic buildings (particularly stone) from the effects of air pollution and damage to historic buildings by accidental collisions. The ambience of historic buildings and conservation areas will also be adversely affected by the increased presence of traffic.

Assessment: slightly adverse

Biodiversity

The interaction of biodiversity and the road network is significant with, for example, a quarter of the UK badger population being killed annually and between thirty and seventy million birds. To allow current trends to continue in terms of traffic growth and new development, we will see significant impacts of transport on flora and fauna including:

- Wildlife casualties through collisions with motor vehicles
- Land take and associated habitat loss through new transport infrastructure schemes
- Fragmentation / severance of habitats through new schemes, increased traffic etc
- Changes in air quality, water quality, noise, vibration, light emissions, dust deposition as a result of construction and operation
- Increase in disturbance to wildlife populations (e.g. traffic noise)
- Creation of barriers to movement
- Hydrological changes affecting surface and groundwater
- Changes to soil
- Inappropriate grass cutting regimes on verges
- Spread of invasive species (e.g. Japanese Knotweed spread by verge regime)
- Creation of habitats
- Curbing spread of invasive species

Assessment: slightly adverse

Water

There are three issues to be considered with water; resources, quality and flooding. Without action being taken, we could see a number of threats that will have a negative effect on how much water is available (both too little and too much), the quality of the water (especially if mainstream drinking source), and risk of damage to the environment, to infrastructure and ourselves through flooding.

Key impacts on the environmental baseline from additional traffic will include:

- Pollution from traffic may enter the groundwater directly, may move slowly within the groundwater to emerge eventually in surface water, may run off the land, or may be deposited from the atmosphere
- Increases in traffic may lead to increases in water pollution
- Maintenance activities and road use can contribute to the build up of sediment in watercourses

In Shrewsbury for example, development over the years has encroached on to the flood plain and there are approximately 1000 residential and commercial properties at risk from flooding, as well as major transport routes through the town. Downstream, a small part of Ironbridge and properties in Bridgnorth are also at risk. The imperviousness of road surfaces and use of piped road drainage increases the rate of water flow to receiving water courses and therefore would contribute to flooding in storm conditions. This is a cumulative effect with flooding likely to become more of an issue in future years.

Assessment: slightly adverse

Human health and population

Noise

As traffic levels rise, with no action taken we will see a rise in people's health adversely affected by noise. This could result in a wide variety of medical conditions having an impact potentially on lost work days, on additional NHS resources and more importantly on a reduced quality of life which is often difficult to measure for many people.

Assessment: slightly adverse

Physical fitness

With no plan reliance on the motor car will continue to grow, both replacing and making it more difficult to walk and cycle. This is likely to reduce the average amount of exercise taken per day and reduce physical fitness. This is likely to lead to poorer human health with increased cases of obesity and circulatory diseases. The impacts will be longer term and potentially irreversible.

Assessment: moderately adverse

Accidents

With no interventions the number of road accidents could be expected to increase as levels of traffic increase, however improvements to 'in car' safety features may work to reduce the severity of accidents. Overall the impact is likely to be neutral.

Assessment: neutral

Security

Vehicle related crime, such as speeding and illegal parking are of high concern to Shropshire residents. Without the LTP this is likely to remain a high concern to Shropshire residents. In order to change this perception and improve quality of life, it is necessary for there to be visible interventions such as increased parking enforcement and reductions in village speed limits which may be reliant on LTP funding.

Assessment: moderately adverse

Accessibility and equality

As the economy grows and households in Shropshire become more affluent it is likely that availability of a car will increase - this will mean more people will have good levels of accessibility. However, it is likely that at the same time levels of accessibility for those who still have no access to a car e.g. very old or young will get even poorer. The overall baseline evolution is therefore likely to be neutral

Assessment: neutral

Material assets

If there were no LTP and therefore no capital maintenance of local highway authority roads the quality of the road network asset would deteriorate significantly over time. In the long term it would take more money and more natural resources to replace the highways, so although fewer natural resources would be consumed in the short term in the long term there would be a higher environmental cost.

Assessment: slightly adverse

Economy and equality

If there were no LTP there may be a negative impact on Shropshire's economy. Deteriorating roads services, poorer transport links, and a deterioration of Shropshire's main attractors – its natural landscape and historic townscapes may make it more difficult to attract visitors and inward investment from businesses. Traffic growth and increased congestion may impact Shropshire businesses financially.

Increase car use and a willingness to travel further to access service results in an increased reliance on the motor vehicle, impacting smaller local businesses in rural settlements and smaller market towns. This leads to fewer services available at a local level and reduced accessibility to employment and services for people without access to a car.

Assessment: slightly adverse

Table 3.11 provides a summary of the potential evolution of the baseline in the absence of a Local Transport Plan.

Table 3.11 Summary of likely evolution of baseline without LTP

SEA/ sustainability topic	Likely events without a LTP	Likely effects on baseline	Baseline evolution assessment
Local air quality	<ul style="list-style-type: none"> Increased traffic volumes Increasing congestion Cleaner vehicles Reducing background concentrations of NO2 	<ul style="list-style-type: none"> Slight reduction in NO2 levels AQMAs not declared Still some poor air quality hotspots where congestion increases in "canyon" type streets 	Slightly beneficial
Carbon emissions	<ul style="list-style-type: none"> Increased traffic volumes Increased use of larger & faster vehicles Faster average speeds 	<ul style="list-style-type: none"> Increased carbon dioxide levels 	Moderately adverse

SEA/ sustainability topic	Likely events without a LTP	Likely effects on baseline	Baseline evolution assessment
Landscape	<ul style="list-style-type: none"> Increasing traffic levels More indiscriminate parking 	<ul style="list-style-type: none"> Visual intrusion Loss of tranquillity Light pollution Loss of characteristics Shropshire's landscape is recognised for 	Slightly adverse
Townscape and heritage	<ul style="list-style-type: none"> Increasing traffic levels More indiscriminate parking More air pollution, vibration and noise 	<ul style="list-style-type: none"> Visual intrusion (street furniture) Light pollution Damage to historic buildings Negative change in ambience of conservation areas 	Slightly adverse
Biodiversity (flora and fauna, and soil)	<ul style="list-style-type: none"> Increasing traffic levels and increased use of larger & faster vehicles increasing severance Negative changes to air quality, water quality, noise, vibrations & light emissions 	<ul style="list-style-type: none"> Road mortality Barriers to movement leading to habitat fragmentation Increased health problems and disturbance Reduction in both numbers and in species of wildlife 	Slightly adverse
Water quality	<ul style="list-style-type: none"> Increasing traffic levels and additional pollution in run-off 	<ul style="list-style-type: none"> Reduction in water quality Limited availability Poor quality of water for drinking and bathing, leisure activities and health implications for wildlife Floods (damage and / or loss to persons, wildlife, infrastructure) 	Slightly adverse
Noise	<ul style="list-style-type: none"> Increased traffic volumes Larger & faster vehicles 	<ul style="list-style-type: none"> Loss of tranquillity Poor quality of health Reduced quality of life 	Slightly adverse
Physical fitness	<ul style="list-style-type: none"> Increased car use and reduced walking and cycling 	<ul style="list-style-type: none"> Reduced fitness Poor quality of health Reduced quality of life 	Moderately adverse
Accidents	<ul style="list-style-type: none"> Increasing traffic Better safety features in more modern cars 	<ul style="list-style-type: none"> More slight casualty accidents but fewer serious and fatal accidents <p>Accidents could lead to:</p> <ul style="list-style-type: none"> Loss of life Reduced quality of life 	Neutral
Security	<ul style="list-style-type: none"> Fewer people walking and cycling More traffic 	<ul style="list-style-type: none"> Increased fear of crime/ speeding vehicles/ road traffic accidents 	Slightly adverse
Accessibility and equality	<ul style="list-style-type: none"> Increased car ownership Reduced quality of public transport services 	<ul style="list-style-type: none"> More people with access to a car and good accessibility Poorer accessibility for those without a car 	Neutral

SEA/ sustainability topic	Likely events without a LTP	Likely effects on baseline	Baseline evolution assessment
Material assets	<ul style="list-style-type: none"> • Deteriorating road condition 	<ul style="list-style-type: none"> • Increased fuel consumption for vehicles operating on poor quality roads • Increased resource consumption in long term to fully replace highways 	Slightly adverse
Economy and equality	<ul style="list-style-type: none"> • Deteriorating road and public transport links between towns and businesses • Fewer checks on business development • Fewer incentives for businesses to reduce travel • Increased car use 	<ul style="list-style-type: none"> • Reduced accessibility to employment locations • Possible lack of inward investment due to poorer transport infrastructure and longer journey times • Possible increased development in undesirable locations • Possible increase business travel • Businesses in market towns and villages struggling due to increased car use to travel to larger service centres leading to less diversity/choice and fewer local facilities 	Slightly adverse

Summary of problems and opportunities

In developing the environmental baseline the key environmental problems and opportunities facing Shropshire have been identified. This is important, as any likely effects of the LTP on elements of the environment which are already at risk, or are of very high quality will be of great significance.

An assessment of the strengths, weakness, opportunities and threats for the environment in Shropshire, at a strategic level, are identified in table 3.13.

Table 3.13 SWOT analysis of key environmental problems and opportunities

<h2 style="margin: 0;">Strengths</h2> <ul style="list-style-type: none"> • Rich cultural heritage • Well preserved and tranquil countryside character • General good water quality • Generally good air quality • Much of Shropshire’s landscape lying within the boundaries of land classified as ‘Area of Outstanding Natural Beauty 	<h2 style="margin: 0;">Weaknesses</h2> <ul style="list-style-type: none"> • 5 Air Quality Management Areas declared for NO₂ emissions from transport • Relatively high contributions to greenhouse gas emissions from transport sector • Some loss of landscape, tranquillity and countryside to development • Little exploration of any renewable energy resources in the county • 35 listed buildings are currently on the ‘at risk’ register
<h2 style="margin: 0;">Opportunities</h2> <ul style="list-style-type: none"> • Increasing public awareness of climate change issues • Capability to lead the market in the production of biofuels • To produce and source food locally to reduce ‘food miles’ 	<h2 style="margin: 0;">Threats</h2> <ul style="list-style-type: none"> • Climate change • Vulnerability to flooding from climate change • Continued loss of landscape, habitats and biodiversity from development and growth pressures • Degradation of countryside and rural tranquillity • Traffic and congestion growth may mitigate benefits of reduced per vehicle emissions

4. Assessment of strategic options

Introduction

As part of the development of the local transport plan, three strategic options were developed. This chapter sets out what the options were and why they were identified and presents a comparison of the significant environmental effects of each option and the effect of each LTP option compared to the baseline and to each other.

Three strategy options were developed for the LTP. These were based on which priorities were to be addressed by the plan. The first option focused on the priorities which consultation highlighted being of most importance to the people of Shropshire. The second option focused on addressing four of the Government's key priorities, and the third option aimed to also address a range of other quality of life issues.

Strategic alternatives

The environmental effect of the three strategic LTP options has been assessed and compared to a do-nothing option.

The options are further outlined below. Details of the measures included in each option are provided in Appendix 2.

The do-nothing option

The do-nothing option is assumed to be what would happen if no LTP was prepared and therefore there were no transport policy changes and no new capital infrastructure. This option assumes that the local subsidised bus network would remain the same, a limited range of road safety education, training and publicity activities would continue as would the concessionary travel scheme, minor road maintenance schemes and winter maintenance (gritting and snow clearance) would continue at current levels (but major schemes which are now covered by capital monies would cease). The only new capital schemes that would go ahead (e.g. road improvements, cycle ways, bus route improvements, town centre enhancements) would be those on trunk roads and a few minor schemes associated with new developments.

The three alternative strategy options that were identified as strategic were:

Option 1: Safety and equality

This option focuses exclusively on the objectives of safety and accessibility. Early consultation identified these as being the two highest transport priorities of the public. This option assumes that all resources are channelled into improving road safety for all road users, and increasing accessibility; through both improving access by car, improved public transport infrastructure and services, and some limited facilities for walking and cycling.

Option 2: Safety and health, equality, economic growth and carbon

This option focuses on four of the Government's current priorities for transport. It assumes that in addition to the actions outlined above for Option 1 some measures are also taken to tackle congestion in town centres, and improve air quality in the existing AQMAs and reduce carbon emissions from transport, while supporting businesses and economic growth. Measures would include traffic management measures to redirect traffic away from congested areas and AQMAs

and improve traffic flow, and measures such as park and ride to reduce the number of car trips in urban areas but improve access to businesses through alternative, more sustainable modes.

Option 3: Safety and health, equality, economic growth and carbon + quality of life Issues

This option combines all of the priorities identified by the Government and by the people of Shropshire including further objectives in terms of quality of life. All issues covered in the previous options will be included within option 3 and additional measures and policies put in place to ensure other quality of life issues are met.

Significant environmental effects of alternatives

For each of the three LTP strategic alternatives the likely impacts on each facet of the environment has been predicted and assessed for its significance. The changes that are likely to occur in each scenario have been assessed in terms of their magnitude, the time period over which they will occur, whether they are permanent or temporary, positive or negative, probable or improbable, frequent or rare, and whether there are cumulative and/or synergistic effects.

In order to determine if the impacts are significant or not consideration has been made to the characteristics of the effects and of the area likely to be affected, having regard, in particular, to criteria for determining the likely significance of effects - based on DfT SEA guidance and on the SEA Directive, Annex II⁴.

- the probability, duration, frequency and reversibility of the effects;
- the cumulative nature of the effects;
- the trans-boundary nature of the effects;
- the risks to human health or the environment (e.g. due to accidents);
- the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected);
- the value and vulnerability of the area likely to be affected due to:
 - special natural characteristics or cultural heritage (e.g. does it affect designated areas or other sensitive areas such as wildlife corridors);
 - exceeded environmental quality standards or limit values (e.g. how close the baseline -current and likely future - is to exceeding any relevant standards);
 - intensive land-use (e.g. does the plan facilitate new areas of development);
- the effects on areas or landscapes which have a recognised national, community or international protection status.

Options that pose no significant effect were described as having "no effect". The predicted significant environmental effects of the LTP strategy options were compared to the likely baseline evolution without the plan; and qualified using the seven-point scale used in table 3.11.

Detailed worksheets were completed recording the results of the assessment of the strategy options against each criteria based on a number of the factors outlined above. These worksheets can be found in Appendix 2.

A summary of the results of this assessment is provided in table 4.1.

⁴ Criteria for determining the likely significance of effects - based DfT SEA guidance and on the SEA Directive, Annex II

Table 4.1 Summary of the predicted significant environmental effects of LTP strategy options

SEA/ sustainability topic	Shropshire sustainability objective	Without LTP	Option 1	Option 2	Option 3
Local air quality	To improve local air quality.	Slightly beneficial	Neutral	Moderately beneficial	Moderately beneficial
Carbon emissions	To reduce Shropshire's contribution to climate change.	Moderately adverse	Strongly adverse	Strongly adverse	Slightly adverse
	To adapt to the impacts of climate change.				
	To encourage modal shift towards more sustainable forms of transport.				
	To reduce the need of people and businesses to travel.				
Landscape	To protect, enhance and manage Shropshire's landscapes and townscapes.	Slightly adverse	Moderately adverse	Moderately adverse	Moderately beneficial
Townscape and heritage	To preserve and enhance features and areas of archaeological historical and cultural heritage importance.	Slightly adverse	Moderately adverse	Neutral	Moderately beneficial
Biodiversity (flora & fauna)	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire's geological heritage.	Slightly adverse	Moderately adverse	Moderately adverse	Slightly beneficial
Soil and geology	To protect and improve soil quality and soil retention.	Neutral	Neutral	Neutral	Neutral
Water resources, quality and flooding	To protect and enhance Shropshire's water resources.	Slightly adverse	Moderately adverse	Moderately adverse	Slightly adverse
	To reduce the risk of flooding to people, property and wildlife.				
Human health and population – noise	To minimise noise levels	Slightly adverse	Moderately adverse	Neutral	Slightly beneficial
Human health and population - physical fitness	To create active and healthier communities for all and reduce inequalities in health services.	Moderately adverse	Moderately adverse	Slightly beneficial	Moderately beneficial
Human health and population – accidents	To promote safer communities – by reducing death and serious injury from accidents.	Neutral	Moderately beneficial	Moderately beneficial	Moderately beneficial

SEA/ sustainability topic	Shropshire sustainability objective	Without LTP	Option 1	Option 2	Option 3
Human health and population – security	To promote safer communities by reducing the fear of crime/road traffic accidents.	Moderately adverse	Moderately adverse	Slightly beneficial	Slightly beneficial
Human health and population – accessibility and equality	To enhance access to essential services	Neutral	Moderately beneficial	Moderately beneficial	Moderately beneficial
	To provide a sufficient quantity of good quality housing which meets the needs of all sections of society.				
	To promote community participation in a diverse range of sporting, recreational and cultural activities.				
Material assets	To ensure the efficient use of land and material resources.	Slightly adverse	Moderately adverse	Moderately adverse	Slightly beneficial
Economy and equality	To promote a strong and sustainable economy throughout Shropshire.	Slightly adverse	Moderately adverse	Slightly adverse	Slightly beneficial
	To encourage high quality inward investment, and support existing businesses to expand and diversify.				

New major scheme proposals have been developed and presented separately from the LTP. As such, specific potential major schemes were not assessed in the strategic options assessment.

Preferred option

It is clear from table 4.1 that the LTP Strategic Option 3 has the most positive impact on the environment. This option already contains a balance of all four of shared priorities for transport and therefore has a strong focus on encouraging more sustainable travel. It also, in order to address the 'quality of life' issues, has a number of mitigation measures as an integral part of the strategy. It contains a number of policies and actions designed to ensure that transport improvements are undertaken in a way which is more sensitive to all aspects of the environment.

For these reasons option three was considered to be the best approach for Shropshire as achieving our environmental aims are a top priority. It has been chosen as the preferred LTP strategy option.

5. Assessment of preferred strategy

Significant environmental effects

The initial assessment of the effects of option 3 was taken as a starting point in undertaking a more detailed environmental assessment of the preferred strategy.

Although the strategy already had a number of environmental mitigation measures built in, a second more detailed analysis was undertaken to see if any further mitigation measures could be included to further reduce the adverse effects and enhance of positive effects of the plan.

Table 5.1 provides a detailed commentary on the significant environmental effects and the integrated policy mitigation for the provisional LTP and uses the same seven point scale as table 3.11 and outlined again below. The strategy policies are outlined in detail in Appendix 4.

+++	Largely beneficial
++	Moderately beneficial
+	Slightly beneficial
0	Neutral (overall significant positive and negative effects are balanced)
-	Slightly adverse
--	Moderately adverse
---	Largely adverse

Table 5.1 Predicted environmental effects of preferred LTP strategy policy and mitigation measures

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
E1	Air travel	-	-	0	0	0	0	0	--	0	0	0	+	0	++	Further assessment would be undertaken before taking position upon possible business airport at Cosford.
E2	M6 toll road link	+	+	0	0	0	0	0	-	0	0	0	0	0	++	Link would be built outside of Shropshire, therefore any negative on landscape/ biodiversity would not directly impact Shropshire; however benefits from reduced journey times and congestion on M54 and A5 would directly benefit Shropshire.
E3	Strategic road network reliability improvements	+	+	--	0	--	-	--	-	0	++	+	+	0	++	Avoid improvements to A49 which may have negative impact on landscape of Shropshire Hills AONB. Improvements to roads will be combined with measures to promote

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
																walking, cycling and bus use to prevent increased levels of car use.
E4	Network management	+	+	0	++	0	0	0	+	+	++	+	+	++	+++	Consider visual impact of improvements in sensitive areas.
E5	Tackling Shrewsbury's traffic problems	+	++	--	++	-	0	0	++	+	0	++	+	0	++	Separate environmental assessments would need to be undertaken before developing schemes such as Parkway Station or North West Relief Road which may have significant impact on the landscape. Significant environmental benefits (through for example reduction of traffic in town centre) would need to be demonstrated before these schemes could go ahead.

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
E6	New roads and bypasses	-	0	+++	++	+	+	++	+	0	0	0	0	+++	-	<p>Actions taken in policy E4 to prevent congestion and make best use of existing roads.</p> <p>New road building will be restricted to where there are significant environmental and financial benefits.</p> <p>Improvements to roads will be combined with measures to promote walking, cycling and bus use to prevent increased levels of car use.</p>
E7	Car parking and park and ride	+	+	+	+	0	0	0	0	+	+	0	+	++	++	Encourage use of sustainable modes of transport, particularly park and ride.
E8	Access to work	+	++	-	+	0	0	0	+	++	0	0	+++	0	++	Construct improvements to walking and cycling network sensitive to

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
																surrounding landscape to have the least detrimental impact.
E9	Supporting sustainable tourism	+	-	-	++	-	-	0	0	+	0	0	+	0	+++	Appropriate positioning of new signage so as not to impact negatively on landscape/ attractiveness of countryside.
E10	Location and design of new development	0	0	+	+	+	+	+	0	+	0	+	+	+	+	Guidance to developers should ensure that the layout of new developments encourages walking and cycling and where possible developers contribute to public transport services. New development should not be located in environmentally sensitive areas.
C1	Rail infrastructure	0	++	+	+	0	0	0	+	0	+	+	++	0	+++	
C2	Rail services and information	0	+	0	+	0	0	0	0	0	0	0	++	0	+++	

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
C3	Access to rail stations	0	+	-	+	0	0	0	-	++	0	0	++	0	++	A separate environmental assessment would need to be undertaken before developing a Parkway Station which could have significant impact on the landscape. Significant environmental benefits would need to be demonstrated before scheme could go ahead.
C4	Managing freight	0	0	-	+	-	-	0	+	0	0	+	0	0	+	Policy aims to reduce impact of freight on local communities; however, also aims facilitate freight movement on strategic routes and to rural sites such as quarries and farms, which may continue to have negative impact on some communities.

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
C5	Encouraging more sustainable travel choices	+	++	+	+	0	0	0	++	+++	0	+	++	0	+	
C6	Improving vehicle efficiency	++	+++	+	+	++	+	++	+	0	+	0	0	+	+	Combine with promotion of walking and cycling to ensure strong message of less use in addition to more efficient use of motor vehicles.
C7	Improving air quality	+++	++	+	+	+	+	++	0	0	0	0	0	0	0	
C8	Reducing traffic noise	0	0	-	+	0	0	0	+++	0	+	+	0	0	-	Investigate use recycled materials for noise reducing surfaces. Avoid noise reducing measures in attractive rural areas where they will have significant visual impact which might be detrimental to attractiveness of landscape. Consider needs of

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
																freight access when planning best HGV routes.
C9	Reduce environmental impacts	0	+	+++	+++	+++	+++	+++	0	0	0	0	0	++	0	
H1	Cost effective asset management	0	0	-	-	0	-	-	+	0	+	+	0	+++	+	Consider use of recycled materials for road surface treatments.
H2	Maintaining a safe highway	0	0	0	0	0	-	--	0	0	+++	+++	0	++	+	Maintain drainage to prevent run-off into water sources.
H3	Reducing our environmental impact and responding to climate change	0	0	+	+	+	+	++	0	+	++	++	+	+++	+	
A1	Supported bus network	0	+	0	0	0	0	0	0	0	0	0	+++	0	+	Try to provide affordable demand responsive transport solutions to prevent social exclusion in areas where regular bus service is not economically viable.

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions			
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality				
A2	Bus network enhancements	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	++	Support use of more efficient vehicles on enhanced services to reduce impact of increased emissions.
A3	Bus fares and ticketing	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	++	
A4	Improve public transport information and marketing	0	0	-	-	0	0	0	0	0	0	0	+	++	0	0	0	+	Consider attractiveness of location and possible visual impact before erecting bus stop flags in sensitive areas.
A5	Other bus enhancements	0	++	0	+	0	0	0	0	+	0	0	+	++	0	0	0	++	
A6	Community and voluntary transport	0	+	0	0	0	0	0	0	0	0	0	0	+++	0	0	0	+	
A7	Taxis and private hire vehicles	0	+	0	0	0	0	0	0	0	0	+	0	+	0	0	0	+	
A8	Improving access for people with disabilities	0	0	0	0	0	0	0	0	0	+	0	+	+++	0	0	0	+	
A9	Cycle infrastructure	+	++	0	+	0	0	0	0	+	+++	++	++	+++	0	0	0	+	

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
A10	Encouraging cycle use	+	++	0	+	0	0	0	+	+++	+	+	+++	0	+	
A11	Pedestrian infrastructure	+	++	0	+	0	0	0	+	+++	+++	+++	+++	0	+	
A12	Encourage walking	+	++	0	+	0	0	0	+	+++	+	+	++	0	+	
S1	Safety schemes	0	0	--	-	--	0	-	0	+	+++	+++	+	0	+	Consider use of recycled materials for construction of safety schemes. Consider ways to reduce negative visual impact of new schemes in sensitive areas.
S2	New and improved roads and road maintenance	0	0	-	-	-	0	0	0	0	+++	+++	+	0	0	New signing at minimum legal requirement.
S3	Appropriate speed limits	0	0	-	-	0	0	0	+	+	+++	+++	+	0	0	Signing at minimum legal requirement to avoid clutter and negative visual impact. Consolidate signage where possible.
S4	Compliance with speed limits	0	0	--	-	0	0	0	+	+	+++	+++	+	0	0	Consider attractiveness of location and possible visual impact before

Policy number	LTP strategy policy	Final assessment of impact upon sustainability														Comments / mitigation actions
		Local air quality	Carbon emissions	Landscape	Townscape and heritage	Biodiversity (flora and fauna)	Soil and geology	Water resources quality and flooding	Human health and population - noise	Human health and population - physical fitness	Human health and population - accidents	Human health and population - security	Human health and population - accessibility and equality	Material assets	Economy and equality	
																erecting signs or installing traffic calming measures.
S5	Road safety education, training and publicity	0	0	0	0	0	0	0	0	+	+++	+++	+	0	+	
S6	Reducing personal security fears when travelling	0	0	0	+	0	0	0	0	++	++	+++	+	0	+	Consider impact of possible light pollution before improving lighting in residential areas.
Whole strategy		0	+	0	+	0	0	0	0	+	+	+	++	0	+	

Environmental assessment of major schemes

Major transport schemes costing more the £5 million have been considered separately to the main Local Transport Plan. The environmental impacts are therefore also considered separately to the impacts of the main plan which have been identified in the previous section.

There are proposals that up to two major transport schemes may be progressed by Shropshire Council within the 15 year lifetime of the LTP. These are:

- Shrewsbury North West Relief Road
- Shrewsbury Parkway Station

An overview of the potential environmental impacts of the Shrewsbury North West Relief Road is provided below. With further detail provided in the appraisal summary tables in Appendix 5.

At present there is insufficient detail available on the Shrewsbury Parkway Station scheme to undertake an environmental assessment.

Shrewsbury North West Relief Road

The potential environmental impacts of the potential north west relief road major scheme are summarised here and more details provided in Appendix 6. This assessment is set out separately to the overall LTP strategic environmental impact assessment. A stage 2 environmental assessment of route options was carried out in May 2005 within the DfT's framework.⁵ This showed that, in general, a North West Relief Road would have more environmental benefits than disadvantages, with benefits in the following areas:

- local and regional air quality
- climate change (carbon emissions)
- noise
- townscape
- journey ambience

Disbenefits would result in the following areas:

- landscape
- archaeological heritage
- built heritage
- biodiversity
- the water environment
- agriculture
- accessibility and physical fitness

Following this assessment a preferred route was selected and further environmental assessments were planned but have not yet been completed. The preferred route alignment is

⁵ Design Manual for Roads and Bridges, Volume 11 Environmental Assessment (Incorporating Amendments up to and including March 2000), HMSO 1994.

shown in Appendix 5. The conclusions of the original stage 2 environmental assessment on the environmental effect of the preferred route are outlined below.

Noise

Implementation of the NWRR would give rise to some increases in noise level for properties adjacent to the alignment but there would also be many properties within Shrewsbury itself that would benefit from reductions in level. The study has also shown that there would be more dwellings with reductions in noise levels than with increases with the proposals in place. The preferred route would reduce the estimated population annoyed by noise by 124.

Air quality and carbon emissions

With the implementation of the preferred route option more properties are expected to experience an improvement in air quality (7963 properties) than deterioration (2281 properties).

The TAG regional air pollution assessment predicted a decrease in annual NO_x emissions with NWRR in place.

The TAG Greenhouse gases assessment predicted a decrease in CO₂ emissions with a North West Relief Road in place compared with the do-minimum.

Landscape

The preferred route would pass through landscape of diverse and complex character. The assessment found that it would have a moderately adverse impact on landscape. Some of the most unusual landscape is to be found along the old river bed, which the preferred route skirts. Mitigation may to a certain extent be achieved through alignment, landform and planting; the loss of tree cover could also be minimised by alignment, although some landform of particular value would inevitably be lost. The character of the river valley would be altered by any new river crossing; however, a positive bridge design would create a new landmark and minimise the negative impact.

The route would result in visual impacts on properties along the edge of the urban area and in the vicinity of the new road. The assessment found that the preferred route would have a substantial adverse visual impact. This would be mitigated by screen planting and land forming where appropriate, to blend the road in with its surroundings. However, the most significant visual effects could not be entirely mitigated – these include those due to large scale cuttings and interference with the natural landform, such as at the old river bed.

Townscape

The preferred route was assessed to have a slightly beneficial impact on the townscape of Shrewsbury's town centre because it would lead to a noticeable reduction of traffic on Welshpool Road, Copthorne Road, The Mount, Frankwell, Welsh Bridge, Smithfield Road, Ellesmere Road and Castle Foregate.

Heritage

A number of archaeological sites were identified within and immediately adjacent to the study area. These sites included probable Bronze Age ritual and funerary sites, Iron Age and Romano-British farmstead enclosures, remains of medieval ridge and furrow ploughing, and medieval (and possibly Roman) roads.

No direct impacts on built historic features would result from the preferred route. The impacts of a NWRR would comprise impacts on the setting of features due to both the presence of a new road and noticeable traffic changes on existing routes. The most significant impacts on heritage

character would be the effect on the setting of the Mount conservation area and its buildings – including some listed.

Biodiversity

The area off the north-western fringe of Shrewsbury is deemed to be of significant ecological value. The preferred route was considered less ecologically desirable primarily than other route options considered as a result of greater habitat fragmentation and proximity to designated sites.

There is a need to design out adverse impacts on the following features:

- the Hencott Pool SSSI and Ramsar site
- the Old River Bed SSSI Shropshire Wildlife Sites
- veteran trees

Other features of concern which should be protected as far as possible include:

- other high quality wetlands
- species-rich 'important' hedgerows
- legally protected animal species including
- badger sets and territories
- bats and bat roosts
- great crested newts
- otters
- water voles
- nesting and nest-building birds

The report advised that the need to minimise ecological impact will require the adoption of a range of precautions, including protected species survey prior to refinement of route options (some of these were undertaken following the choice of a preferred route), and measures taken during construction.

The NWRR would require the bridging of the River Severn and the crossing of its floodplain. Potential ecological impacts of this aspect of the works should be considered with a view to maintaining existing ecological interest and its function as a wildlife corridor.

Water

Given their proximity to the River Severn the route North West Relief Road could have a major impact on the local and regional water environment. However, through the correct use of sustainable drainage systems these impacts can be minimised.

Any new road increases the risk of accidents and potential pollution in the route corridor. However, the drainage and attenuation mechanisms which would be implemented for a NWRR would be equipped to deal with this effectively and minimise the effect on local watercourses and groundwater.

It is highly likely that the preferred route which crosses the River Severn adjacent to the Shelton extraction point would require the relocation of this facility.

Attenuation systems in the form of balancing ponds would be implemented requiring significant land take.

Liaison has been undertaken with the Environment Agency on the possibility of combining the NWRR with a flood barrage scheme spanning the River Severn upstream of Shrewsbury.

However, the Environment Agency have not yet completed their own cost benefit analysis, but recent flood relief schemes completed in the town reduced the benefit of a further measure. Ongoing liaison will ensure that any NWRR proposals do not preclude the construction of the barrage in its preferred location and that as far as possible proposals are co-ordinated.

Agriculture

Most of the land affected by the preferred route falls into the “best and most versatile land” category. However, this land-take is relatively small in strategic terms and should not play a major role in determining the environmental impact of the NWRR. The preferred route would affect 9 agricultural businesses.

Accessibility and physical fitness

Feedback obtained through public consultation and workshops indicates a high proportion of Shrewsbury residents travel within the town on foot or and by cycle, and that this would increase if urban roads were less busy. Access to the open countryside is also of key importance to the public.

The NWRR would create some severance of existing footpaths, with crossing facilities being included for the most significant. It is considered that the NWRR may result in minor reductions in physical fitness.

Measures which may be implemented to minimise accessibility and physical fitness impacts include the provision of pedestrian crossings at all junctions crossed by footways and the incorporation of cycle lanes along both the new road and junctions with the urban area. An additional bridge crossing at Clayton Way is recommended.

Journey ambience

The pleasant environment through which a NWRR would pass represents a small improvement in journey ambience compared with journeys through the town, which include areas of both high quality and relatively poor townscape. No new travelling facilities would be provided as part of any route option; however, the route would reduce journey times, improving access to known facilities either side of the town. The relative simplicity of the new road and reduced congestion would reduce travellers’ stress, both in the urban area and along the route itself.

Economy

A NWRR is expected to have benefits to Shrewsbury’s economy through improving access to the town for employment, business, shopping, recreation and tourism. It is also expected to reduce congestion in the town centre and improve reliability and appeal of the town’s public transport network.

The stage 2 report included an economic assessment of the NWRR scheme. The benefit/cost ratio, derived taking into account TUBA and COBA, for the preferred route was 7.34, indicating that the benefits of the scheme would exceed the construction costs. The results indicated that there is significant time savings to the Shrewsbury network as a result of a North West Relief Road. Similarly, there are also benefits resulting from a reduction in the number of accidents. The links on the new road produce negative results in terms of accident costs, time savings and operating costs, but these are more than outweighed by the relief to the existing network.

Policy integration

A NWRR would support certain areas of policy whilst being less in line with other aspects, both at national and local level. In general, policies on transport – particularly in relation to the road network – would be advanced, whilst compliance with environmental policy would be more mixed.

Proposed actions

Following this assessment the preferred route was chosen an initial scoping for a further environmental impact assessment was undertaken. However, further work on this option is currently on hold. A stage 3 environment assessment would be undertaken, with the aim of mitigating the environmental concerns identified in the stage 2 assessment and public consultation before further plans for the NWRR could be progressed.

6. Monitoring

During the implementation of the third Local Transport Plan monitoring of the actual effects on sustainability objectives will be undertaken, where possible. This will help significant effects of the plan's implementation to be identified and dealt with early on.

With the reduced local authority budgets anticipated over the coming years, it is no longer practical to spend large amounts of money specifically on monitoring. Therefore, in order to assist in the monitoring of the effects of our LTP we have identified a number of areas which relate to our sustainability objectives where undertaking monitoring may be practical or valuable or where data may continue to be available from external sources. These areas are outlined in table 6.1.

A more comprehensive list of possible indicators for Shropshire's sustainability objectives is available in the Shropshire Local Development Framework Scoping Report, October 2008. However, it is unlikely that there will be regular data available for all of these indicators and it would be impractical for Shropshire Council's transport planning team to attempt to gather this data on a regular basis.

Table 6.1 LTP monitoring for sustainability appraisal

Shropshire SEA/ sustainability topic	Shropshire sustainability objective	LTP monitoring theme/ indicator	Target	Trend/ likely evolution (without plan)	Data source
Local air quality	To improve local air quality.	NO ₂ levels in Shrewsbury town centre AQMA Number of AQMAs	Reduction	Less reduction	
Carbon emissions	To reduce Shropshire's contribution to climate change.	Number of vehicle km on stratified sample of Shropshire roads	Maintain or reduce the average rate of national traffic growth	Traffic levels increasing at a rate equal or greater than national trends	SC traffic monitoring records
	To adapt to the impacts of climate change.				
Carbon emissions and Human health and population	To encourage modal shift towards more sustainable forms of transport.	Passenger journeys on local buses; park and ride and rail.	Increase	Reduction	Bus and rail companies passenger figures
		Cycle journeys index	Increase	Reduction	SC cycle counts
	To reduce the need of people and businesses to travel.				
Landscape (visual and cultural impacts)	To protect, enhance and manage Shropshire's landscapes and townscapes.	% street lights high pressure sodium lighting	Increase	Neutral	SC maintenance data

Shropshire SEA/ sustainability topic	Shropshire sustainability objective	LTP monitoring theme/ indicator	Target	Trend/ likely evolution (without plan)	Data source
Townscape and heritage	To preserve and enhance features and areas of archaeological historical and cultural heritage importance.	Number of town centre enhancement schemes	Increase	Neutral	SC data
		Number of buildings on /heritage at risk register	Reduce	Neutral	English Heritage
Biodiversity (flora and fauna)	To protect and enhance the range of populations of species, the quality and extent of wildlife habitats and Shropshire's geological heritage.	Number and condition of SSSIs	Increase % in favourable condition	Neutral	Natural England
Soil & geology	To protect and improve soil quality and soil retention.				
Water quality, resources and flooding	To protect and enhance Shropshire's water resources.	River quality (% of river stretches in top two bands)	Increase	Neutral	Environment Agency
	To reduce the risk of flooding to people, property and wildlife.				
Human health and population – noise and Biodiversity	To minimise noise levels.				
Human health and population - physical fitness	To create active and healthier communities for all and reduce inequalities in health services.	Proportion of children who walk or cycle to school	Increase	Reduction	School census
Human health and population - accidents	To promote safer communities – by reducing death and serious injury from accidents.	Number of fatal and serious road accident casualties on Shropshire roads each year.	Reduce	Increase	Police records/SC accident data

Shropshire SEA/ sustainability topic	Shropshire sustainability objective	LTP monitoring theme/ indicator	Target	Trend/ likely evolution (without plan)	Data source
Human health and population - security	To promote safer communities by reducing the fear of crime/road traffic accidents.				
Human health and population – accessibility and equality	To enhance access to essential services.				
Human health and population - equality	To provide a sufficient quantity of good quality housing, which meets the needs of all sections of society.				
Human health and population – equality and physical fitness	To promote community participation in a diverse range of sporting, recreational and cultural activities.	Number of people participating in organised sport and recreation walking and cycling.	Increase	Reduction	Active people survey
Material assets	To ensure the efficient use of land and material resources.				
Economy and equality	To promote a strong and sustainable economy throughout Shropshire.				
	To encourage high quality inward investment, and support existing businesses to expand and diversify.				