

## Working Together in a Changing Climate

**“Climate Change will affect all Council services and impact on residents, businesses and visitors to the County. It requires everyone to work together to mitigate and adapt services to ensure a more resilient future for all”**

Shropshire Council's Climate Change Strategy, part of the Shropshire Council Sustainability, Environment and Climate Change Policy, brings together policies and specific actions to help mitigate and adapt to climate change and to ensure a sustainable future for the County. A key aim of the strategy is to help develop a collective Council response and harness all existing activity and strategies. This is essential to ensure all services know they have a vital role to play in addressing Climate Change issues, and communicating collective action is far more effective.

Priority 2 of the Community Strategy is responding to climate change, and enhancing our natural and built environment. It says that Shropshire Council will be recognised as a leader in responding to climate change. The Council will work with communities to prepare for and adapt to the issues that climate change may bring and ensure the rich varied environment is valued, protected and enhanced. Natural resources, waste and water will be managed efficiently and to adapt needs to meet the changing demands of the climate.

**“Securing our future, whilst meeting our present needs – working together to balance social, environmental and economic needs”**

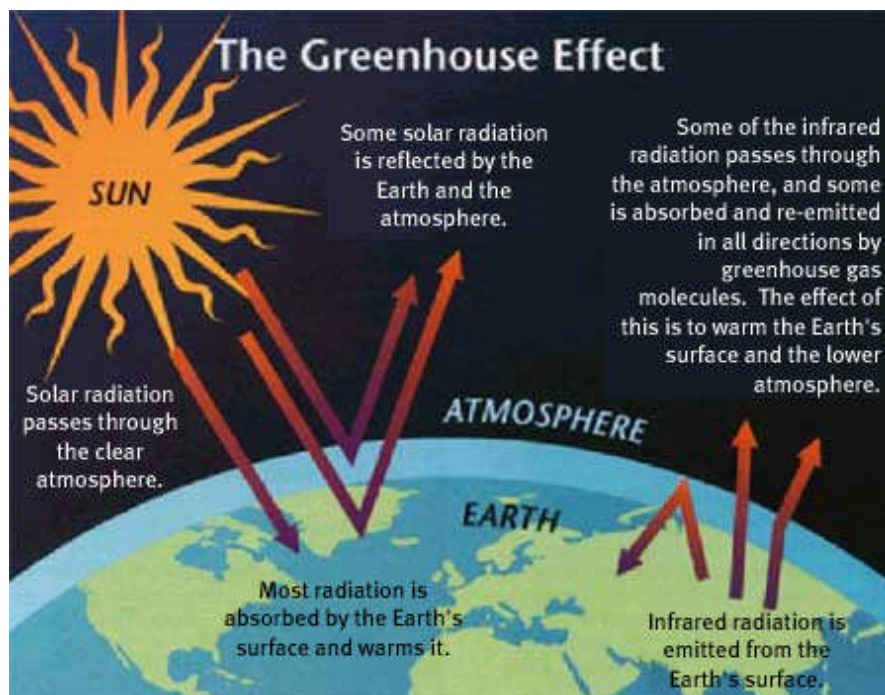
Shropshire's Climate Change Strategy has 3 main objectives

1. To mitigate the effects of climate change through carbon reduction of our services
2. To adapt services and their delivery to respond to changes in the climate
3. To promote sustainable practices via all services

### **What is Climate Change?**

The climate of our planet has always been changing; previous changes have been a result of natural causes, changes in the earth's orbit, fluctuations in the sun's energy, volcanic eruptions, and interactions between the ocean and the atmosphere.

Greenhouse gases surround the earth trapping some of the sun's heat keeping the temperature at around 15°C. However, today there are indications that increased human activity is increasing the rate and magnitude of climate changes through the increase in emissions of man-made greenhouse gases such as carbon dioxide and methane.



Since the industrial revolution human activities have resulted in an increase in greenhouse gases, which has led to an average surface temperature increase of 0.74°C. At present just over 7 billion tonnes of CO<sub>2</sub> is emitted globally each year through fossil fuels and an additional 1.6 billion tonnes through land use change including deforestation.

Changes in global climates for the next 30 years are already set to happen due to the greenhouse gases already emitted. Change after that point can only be limited by reducing emissions now. To become resilient to inevitable changes in the medium term it is going to be essential to adapt to these forecast changes.

In Shropshire, long term climate change trends mean hotter, drier summers and milder wetter winters and an increase in extreme events across the seasons, including intense rainfall, extreme cold and heat waves. The extremity of change is expected to depend on future levels of emissions of climate change gases. The more that is done now to reduce emissions, the less extreme the expected impact in the future. <http://ukclimateprojections.defra.gov.uk/content/view/390/499/>

### What does this mean for Shropshire Council?

Shropshire's climate is expected to change in several ways; predictions include:

- Average annual maximum temperatures are expected to rise by 4°C by 2080 (uncertainty 2°C- 6°C). Most of the warming is expected to be in the summer with around 4.7°C increase in summer warming (uncertainty 1.3°C – 7.5°C), although daily maximums could be around 6.6°C by 2080 (uncertainty 2.9°C – 11.3°C). Winter warming although not as high as summer increases may still be around 3.4°C by 2080 (uncertainty 1.4°C – 5.2°C).
- Summer rainfall by 2080's is expected to decrease by 25% (uncertainty 51% decrease – 4% increase). Winter rainfall by 2080 is expected to increase by 24% (uncertainty 6% - 51% increase).
- More short duration extreme weather events such as storms and floods.

Extreme weather events over a 10 year period were studied in the Shropshire Local Climate Impact Profile (LCLIP). This highlighted that Shropshire has been vulnerable to events in the past.

- Flooding has been the most frequent cause of incidents affecting the widest range of council services.
- Heatwaves have not occurred often during the last 10 years but they do have severe consequences and costs associated.
- The combination of flooding, drought, high winds on trees and clay soils in Shropshire has caused subsidence and damage to infrastructure with costly consequences.
- High winds and old hedgerow trees has meant Shropshire has been more susceptible to tree deaths than the national average.

The Shropshire LCLIP can provide more detail on previous weather events and the impact they have had on Council services.

<http://www.shropshire.gov.uk/sustainability.nsf/open/240067BD9C5D7C3E802575D900294291>

Previous extreme events in Shropshire are already showing a pattern of increased frequency, providing evidence that changes have already begun. Unavoidable effects such as temperature rises and changes in rainfall will have an effect at a local level and impact everyday lives and the ability to deliver services as accustomed. Shropshire Council needs to take responsibility to ensure that the council services they deliver now and in the future avoid the worst impacts and take advantage of and opportunities that arise from, climate change.

Climate change could affect the social, economic and environmental wellbeing of Shropshire, its residents and Shropshire Council's ability to maintain service provision in the short term as well as long term. In order to take action on climate change, Shropshire Council has identified the following three strategic aims on which to focus its activities.

## **1. To mitigate the effects of climate change through carbon reduction of our services**

*In 2008/9 Shropshire Council emitted a total of 90,608 tonnes of CO<sub>2</sub>. Around 50% of this was from our energy use in buildings and street lighting, a further 37% from housing and 13% from transport.*

Shropshire Council has worked with the Carbon Trust on the Local Authority Carbon Management Programme and has set itself a target to reduce carbon emissions from Council operations by 35% by 31 March 2014 from a baseline set at 2008-09 levels. In order to achieve this, the Council has formed a carbon management team to produce Shropshire Council's Carbon Management Plan.

## **2. To adapt our services and their delivery to respond to changes in the climate**

*Costs to the Council as a result of the 2007 flooding event were around £5 million.*

The Council has identified that Shropshire is vulnerable to increasing extreme events, flooding and temperature changes, resulting from climate change. Shropshire Council has now identified climate change as a key priority in maintaining service provision, the risks associated with climate change are being incorporated into the corporate risk register, and through its locality working agenda the importance of developing wider leadership and supporting community resilience has been identified.

## **3. To promote sustainable practices and communicate the impacts of climate change and our service activities across the County.**

Although there is limited understanding about how climate change will impact on the wider community, Shropshire Council is reviewing how services can be more resilient and responsive to community needs arising from climate change.

Shropshire Council will promote this strategy and regularly publicise and share progress with other organisations. The Council will communicate through events, the website and written materials, the impact of climate change on the County and ways in which staff, residents and businesses can reduce their carbon emissions and increase their adaptive capacity to climate change.

## Other Key Considerations

The UK government has placed an emphasis on local authorities setting a leading example on Climate Change. Action by local authorities will be critical to the achievements of the Government's climate change objectives, such as the long term goal to reduce CO<sub>2</sub> emissions by 80% by 2050 in the Climate Change Act 2008.












This has created a number of legislative drivers for local authorities:

- **Display Energy Certificates:** As of 1 October 2008 there is a legal requirement for all public sector buildings with a total useful floor area of over 1,000m<sup>2</sup>, to show a Display Energy Certificate (DEC) in a prominent place, clearly visible to the public.
- **Carbon Reduction Commitment:** The Carbon Reduction Commitment is a mandatory emissions scheme for organisations whose total electricity consumption is greater than 6,000MWh or approximately £500k, Shropshire Council falls into this category. Whilst initially developed as a “cap and trade scheme” it is now simply a carbon tax with no recycling payments being made back to participants. The first payments will start in June 2012.
- **‘Towards Zero Carbon Development’** Under the Government’s consultation paper, Building a Greener Future: Towards Zero Carbon Development, they propose that all newly built houses will have to be operating as carbon neutral by 2016
- The **UK Climate Change Adaptation Programme** is leading work across Government to prepare for a changing climate, including coordinating and driving delivery of the Departmental Adaptation Plans. “Climate Change: Taking Action” was produced to set out the context and purpose of the plans and provide a coherent message on what Government is collectively doing to tackle climate change. Following a **series of Climate Change Risk Assessments (by 2012)**, a National Adaptation Programme will respond to high priority opportunities and risks.
- In spring 2011 Government will publish a **Natural Environment White Paper** – outlining the Government’s priorities for the natural environment, and setting out a framework for practical action by Government, communities, businesses and civil society organisations. This will address the impacts of climate change and emphasise the value of natural resources – such as the restoration of wetlands as a key flood management measure.

# Working Together in a Changing Climate

## - Shropshire Council's Climate Change Strategy

The impact of climate change is cross cutting across all service areas. Environmental, economic and social concerns challenge the need to pass on to succeeding generations a better environment than the one inherited. This strategy is tackling these concerns as part of a collective response to an evolving agenda by bringing together ten key themes and challenges facing all services across Shropshire Council. It highlights key strategies, policies and action plans that satisfy the objectives of this strategy and meeting the national drivers.

<b>Shropshire Council Climate Change Strategy Themes</b>			
			
<b>Community and Partnership Working</b> 	<b>Environmental Education and Awareness Raising</b> 	<b>Economic Development</b> 	<b>Sustainable Procurement</b> 
<b>Energy and Carbon Management</b> 	<b>Built Environment</b> 	<b>Natural Environment and Biodiversity</b> 	<b>Waste</b> 
<b>Transport</b> 	<b>Water Resources and Flood Management</b> 		

## 1. Community and Partnership Working

Shropshire Council works in partnership with other public sector, private sector and third sector organisations to provide the community with a “flourishing Shropshire”. The Shropshire Community Strategy 2010 – 2020 has identified the action taken over the coming years must be underpinned by a collective approach, involving everyone across Shropshire. It encourages local people to take individual and community responsibility for their future.

Priority 2 is “Responding to climate change, and enhancing our natural and built environment”.

<http://www.shrop.net/2shropnet/AToZOfMini-sites/S/ShropshirePartnership/CommunityStrategy>

As a leader and working with communities Shropshire Council will ensure that by 2020:

- Shropshire has a lower carbon footprint, inspired and implemented through community leadership.
- The rich and varied natural and built environment and heritage is protected and enhanced, balanced by innovative thinking in design, build and technology.
- The streets are clean, the roads are maintained and there are accessible areas of the countryside and green open spaces.
- The natural resources are managed sustainably, and the generation and landfilling of waste is reduced.

Community working seeks to empower individuals and groups of people by providing them with the skills they need to effect change in their own communities. Community Regeneration Officers help people take part in this process. There are a number of Local Joint Committees in Shropshire and each area has its own Community Regeneration Officer, who helps to enable and empower communities to develop their own projects. The Community Working Team support communities in creating a parish plan, in partnership with staff from the Community Council of Shropshire, to apply for grants and funding and to enable local people to interact directly with the Council.

Shropshire has a number of established community groups addressing issues of climate change and sustainability. Shropshire Council supports these groups through a Shropshire Low Carbon Community Group network, offering training, encouraging wider engagement, promotion of good practice and highlighting opportunities of climate change. These groups will help deliver the priorities identified through the community strategy and the Environmental Delivery Group Action Plan (under development through the Sustainable Communities Steering Group).

## 2. Environmental Education and Awareness Raising

Communicating the issues of climate change is a challenge for all involved. However the role of education and awareness is essential to ensure we have the capacity to deal with changes through responsible living and provide the skills and training to adapt. All staff have an obligation to raise

awareness of climate change issues when engaging with all service users. Shropshire Council has signed the Nottingham Declaration on Climate Change, a high level, broad statement of commitment to actively tackle climate change in Shropshire.

<http://www.shropshire.gov.uk/sustainability.nsf>

Online resources and information on the Shropshire website help to enable climate change messages to be widely distributed throughout the community. Shropshire Council officers will be equipped with the knowledge on how their service is affected by climate change, and know about the adaptation and mitigation actions being implemented and able to share this information with service users.

Young people and schools can be good advocates of the need to respond to climate change and sharing messages with the wider community. Schools in Shropshire are encouraged to follow the Shropshire sustainable schools agenda to ensure key messages and actions are communicated effectively in all schools.

Shropshire Council has established a group of 60 Green Office Champions to help embed sustainability actions in all teams across the Council. Officers focus on a different theme every 2 months to encourage offices to make manageable changes to the ways they operate, enabling services to mitigate and adapt to a changing climate.

Shropshire has a number of established community groups addressing issues of climate change and sustainability. Many people in Shropshire know about climate change and global issues and now need better information on the impacts locally and how they can make a difference and contribute to a more resilient Shropshire.

### **3. Economic Development**

Shropshire's economy is dependant on agriculture, rural industry and tourism; industries reliant on the existing climate. Ensuring local businesses are increasingly resilient to the impacts of climate change and become more sustainable is important in Shropshire to reduce CO<sub>2</sub> emissions across the County, whilst encouraging economic growth.

<http://www.shropshire.gov.uk/economicdevelopment.nsf>

Shropshire Business Ambassadors and the Business Board supports and promotes local businesses and enables the sharing of Shropshire Council policies, plans and development projects to ensure businesses are aware of the bigger picture within Shropshire.

<http://www.investinshropshire.com/shropshirebusinessboard.aspx>

It believed encouraging businesses to become more sustainable can:

- Increase profits and reduce costs
- Increase the efficiency
- Improve the profile
- Improve resilience against future changes and legislation

Various initiatives exist in Shropshire such as the Shropshire Chamber of Commerce, Ambassadors and the Shropshire Business Board to try and encourage businesses to put sustainability on their agenda.

Shropshire is also supporting the growth of businesses operating in the environmental technologies sector with the MetNet project, Marches Environmental Technologies Network. The network covers Shropshire, Herefordshire, Worcestershire and Telford and Wrekin and aims to support the growth of businesses that work throughout a range of technologies including the sub sectors of energy, water, waste, environmental consultancy etc to ensure that the Marches is recognised as an area of expertise in the climate change arena. [www.met-net.co.uk](http://www.met-net.co.uk)

The Marches Local Enterprise Partnership has also identified 'Sustainability' as a key priority for its business plan which will aid economic development in the Marches region and aims to create more jobs in the region that will be sustainable alongside plans to implement projects to encourage businesses to improve their sustainability and environmental credentials.

<http://www.marcheslep.org.uk/>

Limited understanding, capital and skills have been cited as reasons for limited activity on climate change by businesses and the 2007-2009 pilot RE:think Energy scheme aimed to address these issues through audits, capital grants and training. The recent introduction of Feed-In-Tariffs and the forthcoming Renewable Heat Incentive have meant grant schemes are more difficult to fund but an extension to the RE:think Energy project is likely to provide businesses with audits, feasibility studies and training to support the move to a more sustainable business base in Shropshire.

The Green deal is the Coalition Government's initiative to support the implementation of energy efficiency measures to households and businesses without needing to meet any upfront costs. This programme will be backed with a totally new finance mechanism designed around the needs of people and business.

[http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/consumers/green\\_deal/green\\_deal.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/consumers/green_deal/green_deal.aspx)

#### 4. Procurement

Shropshire Council procures around £230 million per annum on goods, works and services. By ensuring these purchases are done having regard to sustainable principles will help to ensure Shropshire Council is reducing its carbon emissions and increasing its resilience to climate change.

Environmental and climate change impacts occur from the source, delivery and the nature of the good purchased. It is important to make purchasing decisions based on whole life costing and consider and encourage suppliers and contractors to operate environmentally sound and sustainable procurement policies.

Shropshire Council has a detailed procurement strategy, sustainable procurement policy and guidance documents which aim to support purchases from all areas of the Council and ensure value for money and efficiencies are achieved.

<http://www.shropshire.gov.uk/procurement.nsf/open/4E95D1624CC6506880256F6B005B5555>

The Local Government Sustainable Procurement Strategy was launched in 2007 to ensure Councils address procurement in a more sustainable manner. Shropshire Council has used the flexible framework to monitor its progress against this agenda and has created a Sustainable Procurement Action Plan which identifies areas for action across all purchasing services in the Council.

Guides and information for Shropshire Council staff use on area specific sustainable procurement can be found on the intranet, along side the sustainable procurement action plan.

<http://notes2/intranet/procurement.nsf/open/C3609E240E690A968025735200475753>

#### 5. Energy and Carbon Management

A key issue in mitigating climate change is reducing the demand for energy and looking for cleaner ways to produce the energy needed. By reducing energy use and switching to renewable and sustainable sources in Council buildings, operations can be made more sustainable and able to function more effectively.

Shropshire Council's Carbon Management Plan vision is ultimately "to become carbon neutral". The Council is committed to a programme of carbon management across all its activities, achieving a 35% reduction in emissions by 2014 and the Council aims to become a carbon friendly employer, with a reputation as an organisation with good carbon management.

The Council is drawing together a single 5 year carbon management plan for all Council properties, street lighting and transport. Identifying short term, medium term and long term interventions.

#### Example Carbon Management Projects

##### Short Term Projects (2010-2012)

- a) Replace boilers for the Shirehall
- b) Install Automatic Meter Reading(AMR) on gas and electricity meters
- c) Install low energy lighting across all buildings
- d) Install lighting controls on occupancy and light levels across building stock.
- e) Replace/install or upgrade insulation in buildings

##### Medium Term Projects (2012-2015)

- a) Introduce a travel plan across the Council
- b) Install LED street lighting
- c) Install Biomass boilers at suitable properties
- d) Continue with solar thermal/PV installations

##### Long Term Projects (2015-2020)

- a) Introduce purchase requirement for lower emission vehicles
- b) Introduce low/zero emission bus services
- c) Continue replacement boiler program in oil and gas
- d) Continue with solar thermal/PV installations

For more detail on the Shropshire Carbon Management Plan

<http://www.shropshire.gov.uk/carbonmanagement.nsf>

## 6. The Built Environment

Over a third of all CO<sub>2</sub> emissions are from the built environment. Ensuring sustainable design and development policies are implemented in new and existing buildings, construction takes into account sustainable methodologies and the potential for existing buildings to be retrofitted is realised, will help to reduce carbon emissions and reduce the overall impact of the built environment.

The Shropshire LDF Core Strategy has sustainability at its heart. It provides the basis for delivery to 2026. <http://www.shropshire.gov.uk/planning.nsf/open/D47469F09C421CC780257516003D64B8>

Core Strategy Policy CS6 seeks to ensure that new development is designed to a high quality using sustainable design principles. It requires all new development to complete a Sustainability Checklist, which sets out 'minimum', 'good' and 'best' standards in relation to a range of sustainable design principles, including water management, energy efficiency and generation and waste management. Under Policy CS6, it is a requirement for development to meet the minimum

standards within the checklist for the scale and type of development in question. However, through promoting sustainable design early in the design process, it is hoped that new developments will meet the good or best standards wherever possible, as good practice.

### **6.1 Sustainable Construction Policy**

To achieve the targets set by government in the Climate Change Bill a very significant emphasis must be placed on the major contributor to emissions which is the energy use in buildings. This has prompted a shift of emphasis for the Council's Sustainable Construction Policy. Previously the policy has focused in detail on specific methods and measures to be incorporated into the construction related activities of the authority. The rethink and revised approach for Shropshire Council is based upon the need to take a holistic approach to the design, construction and operation processes.

The aim of the new policy guide will be to set out how the Council can implement sustainable design and construction principles in a comprehensive and coordinated way for new developments. The Council will seek to embrace and utilise the extensive knowledge base and resources of the BRE in the form of the Environmental Assessment Method. It is currently the most advanced and developed environmental assessment method for buildings. It encompasses extensive research, advice on proven techniques, technologies and specifications for best practice in sustainable design. It is now recognised as one of the leading methods in assessing a buildings energy performance.

Shropshire Council's sustainable construction policy will be underpinned by BREEAM and the criteria will be set for achieving recognised high standards for all future construction related projects and activity undertaken by the Council.

### **6.2 Historic Environment Strategy – Reducing the carbon footprint of old buildings**

This strategy has emerged out of a European project based on Shrewsbury, it supports all areas of the Council working with communities with historic assets to consider a more sustainable way of using their properties. The vision is;

“Securing our future, whilst preserving the past – reducing our carbon emissions through behaviour change, efficiency and sensitive use of technology”

It aims to reduce our reliance on fossil fuels and reduce our energy demand by 40% by 2020 by;

1. Changing the ways energy is used
2. Investing in measures to reduce energy consumed
3. Creating electricity and heat.

<http://www.shropshire.gov.uk/sustainability.nsf/open/923015AB3B5D9C0B80257635002A63F4>

## 7. Biodiversity and the natural environment

Shropshire supports a wide diversity of habitats and species stemming from its varied geology and land use history. In the words of Caroline Spelman, biodiversity “*underpins our economic prosperity, our food security, our health, our ability to adapt to a changing climate and to reduce the greenhouse gases which cause this change*”. Biodiversity contributes significantly to the ‘quality of life’ of people living in, or visiting Shropshire. A biodiverse environment has been shown to improve health and well being, reduce crime, and increase the desirability of an area as a place to live and work. Economic and social well being are likely to be adversely influenced by any loss of the ecosystem services provided by the biodiversity of Shropshire.

Changes in land use, diffuse and direct pollution, and neglect of nature reserves have all impacted on Shropshire’s biodiversity. Many of these factors will be exacerbated by indirect impacts of climate change. The direct impacts of climate change are relatively unknown but with an influx of traditionally southern species over the last few years there is good evidence that the changes have already begun. With so many uncertainties as to the response of habitats and species, the general guidance has been to protect and improve core areas of biodiversity and develop a network of links to aid dispersal and migration. This is primarily what the Shropshire Biodiversity Action Plan aims to achieve. Shropshire Council needs to encourage appropriate management, restoration and expansion of important habitats and the populations of species they support...

Shropshire Council will achieve this by:

- Completing all actions listed for Shropshire Council in the Shropshire Biodiversity Action Plan by the deadline specified. Link to Shropshire BAP - <http://bit.ly/ShropshireBAP>
- Identify environmental networks throughout Shropshire and protect and enhance them through the planning system (Core Strategy Policy 17)
- Achieving positive habitat management on 25% of County Wildlife Sites by 2015
- Achieving favourable condition [or unfavourable recovering] for all Sites of Special Scientific Interest in Council ownership.

## 8. Waste

Landfill is a major contributor to climate change with methane (gas produced from decaying waste) around 25 times more potent than CO<sub>2</sub>. By cutting the amount of waste that ends up in landfill through reuse, recycling and composting we are reducing our greenhouse gas emissions.

In 2009/10 Shropshire Council managed 161,788 tonnes of Municipal Solid Waste (MSW) of which 96% was household waste. Of this nearly 50% was disposed of via landfill, 20% was dry material sent for recycling and 29% was organic matter sent for composting/anaerobic digestion and less than 1% was clinical waste sent for incineration with energy recovery.

Shropshire Council has a Joint Municipal Waste Strategy (2000 -2020) that sets out the objectives and proposals for waste collection, treatment and disposal that will apply across the county and the options for meeting performance standards and targets.

[http://www.shropshire.gov.uk/waste.nsf/viewAttachments/GPRT-7N2E4A/\\$file/shropshire-waste-strategy-2000-2020.pdf](http://www.shropshire.gov.uk/waste.nsf/viewAttachments/GPRT-7N2E4A/$file/shropshire-waste-strategy-2000-2020.pdf)

In March 2010 the Shropshire Waste Prevention Plan 2010 – 2015 was adopted that aims to reduce waste per head from 530kg to 480kg by 2015.

[http://www.shropshire.gov.uk/committee.nsf/0/4809FA90EF7B6E01802576EE00405D7A/\\$file/10\\_03\\_31%20Waste%20Prevention%20Plan%20FINAL.pdf](http://www.shropshire.gov.uk/committee.nsf/0/4809FA90EF7B6E01802576EE00405D7A/$file/10_03_31%20Waste%20Prevention%20Plan%20FINAL.pdf)

Shropshire Council's strategic aim is to provide the necessary infrastructure and planning framework to enable Shropshire to take responsibility for all of its own waste and to encourage businesses and the community to engage in this process. The challenge for local authorities including Shropshire has been made clear in the Government's Waste Strategy for England 2007.

Policy CS8 of the Core Strategy relates to infrastructure provision and states that the development of sustainable places in Shropshire will be assisted by positively encouraging infrastructure that mitigates and adapts to climate change. As part of the Sustainable Design Supplementary Planning Document (SPD) and in line with Core Strategy Policy CS19 (Waste Management Infrastructure), Shropshire Council will require applications for all types of development to include information about the management of waste during construction and for the life of the development as part of the completion of a Sustainability Checklist. The checklist includes detailed guidance on the space requirements for waste facilities in new developments in the form of Draft Guidance for Architects and Developers.

Shropshire Council aims to encourage an innovative and holistic approach to waste management. Waste is a valuable resource and using it to generate energy can reduce greenhouse gas emissions from biodegradable waste sent to landfill, whilst providing an alternate energy source. The opportunity exists to extract the maximum value from waste from a combination of recycling, composting and energy recovery. Shropshire is a predominantly rural county with a large proportion of farm land, which could support enormous opportunities for reuse of agricultural waste and energy recovery through Anaerobic Digestion. Shropshire Council will encourage and support such renewable proposals where practicable.

The transportation of waste from creation point to processing, recycling and landfill, contributes to overall CO<sub>2</sub> emissions. Shropshire Council's vision is to provide adequate infrastructure within the

county to deal effectively with its own waste, therefore reducing the traffic movements and in turn reducing our CO<sub>2</sub>.

Shropshire Council must ensure Shropshire takes responsibility for its own waste. Developers will be encouraged to include space provision for waste management and recycling within all new developments; domestic or commercial. This will be delivered through the Sustainable Design SPD including the Sustainability Checklist.

In 2007 Shropshire Council awarded a 27 year contract to Veolia Environmental Services Ltd (VES) to take on responsibility for collecting, recycling, and disposing of household waste on behalf of Shropshire Council. The main basis of the contract is that VES must ensure that Shropshire Council complies with targets laid out in the EC Landfill Directive which is to incrementally reduce the amount of biodegradable municipal waste (BMW) that is sent to landfill, so that by 2020 they are landfilling only 35% of what was landfilled in 1995. Subject to the necessary planning and permitting being achieved the aim of this contract is to divert 95% of all MSW away from landfill. Their proposals to deliver this include:

- Increase Shropshire's recycling levels to more than 52.5 per cent by 2012/13.
- Introduce a kerbside plastic bottle recycling collection across Shropshire by 2010/11.
- Construction of two new integrated waste management facilities in Oswestry and Bridgnorth and improvements to existing facilities at Craven Arms.
- Construction of an in-vessel composting facility - which will facilitate the introduction of a kerbside collection of food waste across Shropshire by 2012.
- Construction of an 'Energy from Waste' facility by 2012/13.

The contract requires VES to annually audit and report on the GHG emissions using the Environment Agency's WRATE methodology. A life cycle assessment tool which takes a holistic view of greenhouse gases associated with all aspects of waste management. The contract requires VES to monitor and report on this and to deliver a year-on-year reduction in this figure, for every year of the contract, with financial penalties for non-compliance.

## 9. Transport

30% of Shropshire's carbon emissions are from transport, almost all from road based travel, around two thirds of road transport carbon emissions are from passenger cars, just under a third from vans and HGV's, and only a very small amount from buses. Shropshire is a rural county and is dependant on its transport network to sustain quality of life.

Reducing private car use through improved public transport and providing more sustainable options will help to reduce Shropshire's carbon emissions. The Council's approach to locality working helps to support and sustain rural communities by investing in market towns as service centres, reducing the travel burden.

A new Local Transport Plan is currently under development and will contain policies to help reduce carbon emissions from transport as well as responding to the impact of climate change. It sets a broad range of priorities to 2026 as well as ongoing resourced actions as part of a rolling programme on a place by place basis.

Priorities include:

- Supporting other service areas in seeking to reduce the number and length of journeys through greater local and remote provision of goods, facilities, services and employment.
- Encouraging the greater use of more sustainable and lower carbon travel modes.
- Encouraging and supporting the take up of more efficient vehicles, both traditional and alternative fuel types.
- Promoting more efficient driving practices, including through the provision of driver training.
- Increasing the efficiency of street lighting and reducing unnecessary use.
- Following highways maintenance practices which minimise carbon production, such as maximising the use of surface dressing rather than complete renewal of road surfaces.
- Leading by example, including implementing the council carbon management and travel plans
- Addressing the future demand on the highway network due to climate change, particularly the increased importance of effective drainage to cope with more extreme wet weather.

<http://www.shropshire.gov.uk/traveltransport.nsf/open/2A79133CD32676E98025709E002EEF2B>

Shropshire council have developed a vehicle replacement programme that aims to reduce carbon emissions on council operated vehicles. This means that procurement of vehicles is to the latest emissions standards, currently Euro 5. This standard reduces the carbon emissions by 25% when compared to a Euro 4 vehicle. Additionally vehicles where available are fitted with Environmentally Enhanced Vehicle (EEV) features. This reduces both carbon emissions by up to a further 5% and particulates (PM10) by 25% against a standard Euro 5 vehicle. The programme is also actively reducing the number of 4x4 vehicles operated replacing them with small light commercial vans to Euro 5 standards. The streetscene fleet is being replaced and will reduce the number of dual engined road sweepers replacing them with a single engined model and again to the Euro 5 standard engines. The programme has reduced the number of years that vehicles are operated by the council allowing the council to take advantage of the latest euro emissions standards and technology to further reduce emissions. It also allows the council to react quickly to options of alternatively fuelled vehicles as the frequency of replacement is increased within the fleet. The

final element of the programme looks at utilisation of vehicles matching the appropriate type of vehicle to the task. Specifying vehicles that are multi functional allowing the opportunity to reduce the number of vehicles within the fleet. The design and specification of specialist vehicles take into account options such as light weight materials, eco tyres, wind deflectors and where available particulate filters. These measures all deliver a reduction in carbon and in most cases a reduction in NOx and PM10 emissions.

Corporately, Shropshire Council is aiming to reduce emissions from staff transport as a result of its activities. Establishing baseline of staff travel and identifying overall costs of travel is important in reducing CO<sub>2</sub> emissions appropriately. Promotional work highlighting the benefits of car sharing, travel planning, home working, "hot-desking", online mileage reporting and sustainable travel are key in reducing grey fleet mileage. To encourage sustainable travel pool cars and bikes are provided in the main HQ buildings alongside appropriate facilities such as showers, car share parking spaces, home working technology and support through a Reward scheme and BUGs (bicycle user group). Other considerations currently being investigated include parking charges, car clubs, team travel budgets, and better links to public transport; buses, park and ride, and trains.

## **10. Water Resources and Flooding**

Water management is an integral part of this strategy, its availability through-out the year is likely to change with climate change and Shropshire will suffer increased periods of drought and flooding, impacting on environmental, social and economic issues in the County.

Flooding is an issue identified as a problem and associated costs to the Council have been estimated in excess of £5million for the flooding experienced in the summer of 2007 alone. In contrast, drought in Shropshire could provide a significant issue for agriculture and economic stability. Increased dry periods will mean a higher dependency for abstraction from the River Severn. This will add to water stresses.

Water consumption in Shropshire is in line with the national average of 150 litres per day. However, in the long term, this level of use is not sustainable. The Government target is 130 litres per capita per day by 2030 although indications suggest this may not be enough and 80 litres per capita per day may need to be achieved.

Policy CS18 in the Core Strategy is, Sustainable Water Management, which seeks to ensure that new development integrates a set of measures to reduce flood risk, avoid an adverse impact on water quality and quantity and provide opportunities to enhance biodiversity, health and recreation. In terms of managing flood risk, the policy requires development to be in accordance with PPS25

and for proposals to provide evidence that surface water will be adequately managed, particularly in areas of identified surface water flood risk. Policy CS18 will be supported by a Water Management SPD, which will give more detailed guidance on designing developments to be safe in times of flood, and managing surface water drainage effectively.

Level 1 Strategic Flood Risk Assessments (SFRA) were completed in 2007 for the former district authority areas within Shropshire. The Level 1 SFRAs provide strategic flood risk maps which show flooding from all sources including flood zones and areas at risk of flooding from other sources. The assessments also provide an overview of the implications of climate change for flood risk. The SFRAs will help applicants to apply the Sequential Test and prepare site specific Flood Risk Assessments in accordance with the requirements of PPS25. A Level 2 SFRA was undertaken for Shrewsbury town centre (within the river loop) in 2009. This provides more detailed modelling of the River Severn through Shrewsbury in relation to flood extent, depth and velocity.

The Shropshire Water Cycle Study was completed in the summer of 2010. It seeks to assess the impact of development on the water environment and that water services infrastructure either has sufficient capacity or can be provided in a timely manner. In terms of flood risk, the study builds on the evidence within the SFRAs by adding surface water flood risk mapping to identify the vulnerability of different settlements throughout Shropshire to surface water flooding. The study also includes mapping to identify the types of SuDS that may be applicable in different locations.

Work is currently underway with six Surface Water Management Plans within Shropshire. These plans provide greater focus on six of the urban areas which are deemed to be at greatest risk of surface water flooding, and also take into account the level of planned development. The plans include detailed modelling of all drainage pathways and can be used to best plan mitigation measures and assess the effect of future development.

As part of the Council response to the Flood and Water Management Act 2010, nine flood forums have been established across Shropshire. These forums will bring together the different organisations involved in dealing with flooding problems with the aim of identifying and discussing issues in the local area. They provide Shropshire Council with a link to local communities via the Town and Parish Councils, who are active forum members.

The Flood and Water Management Team are now consultees to the planning process. When planning applications meet certain criteria, they are flagged and passed on for comment with regard to drainage and flooding issues. Factors of safety are employed when checking the

drainage calculations that accompany planning applications to ensure that an allowance for climate change is included where appropriate.

<http://www.shropshire.gov.uk/environmentmaintenance.nsf/open/C79EE6B8A61CDB608025772E00482EE4>

### **Conclusions**

The Shropshire Council Climate Change Strategy sets out the Council's approach to meeting the challenges placed by climate change. It draws together a range of policies, strategies and specific actions from services across the Council to help mitigate and adapt to climate change and to ensure a sustainable future for the County.

The strategy is intended to provide a concise focus for climate change in Shropshire and should be seen as central in guiding corporate, collective and individual actions to mitigate and adapt to the anticipated effects over time.

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