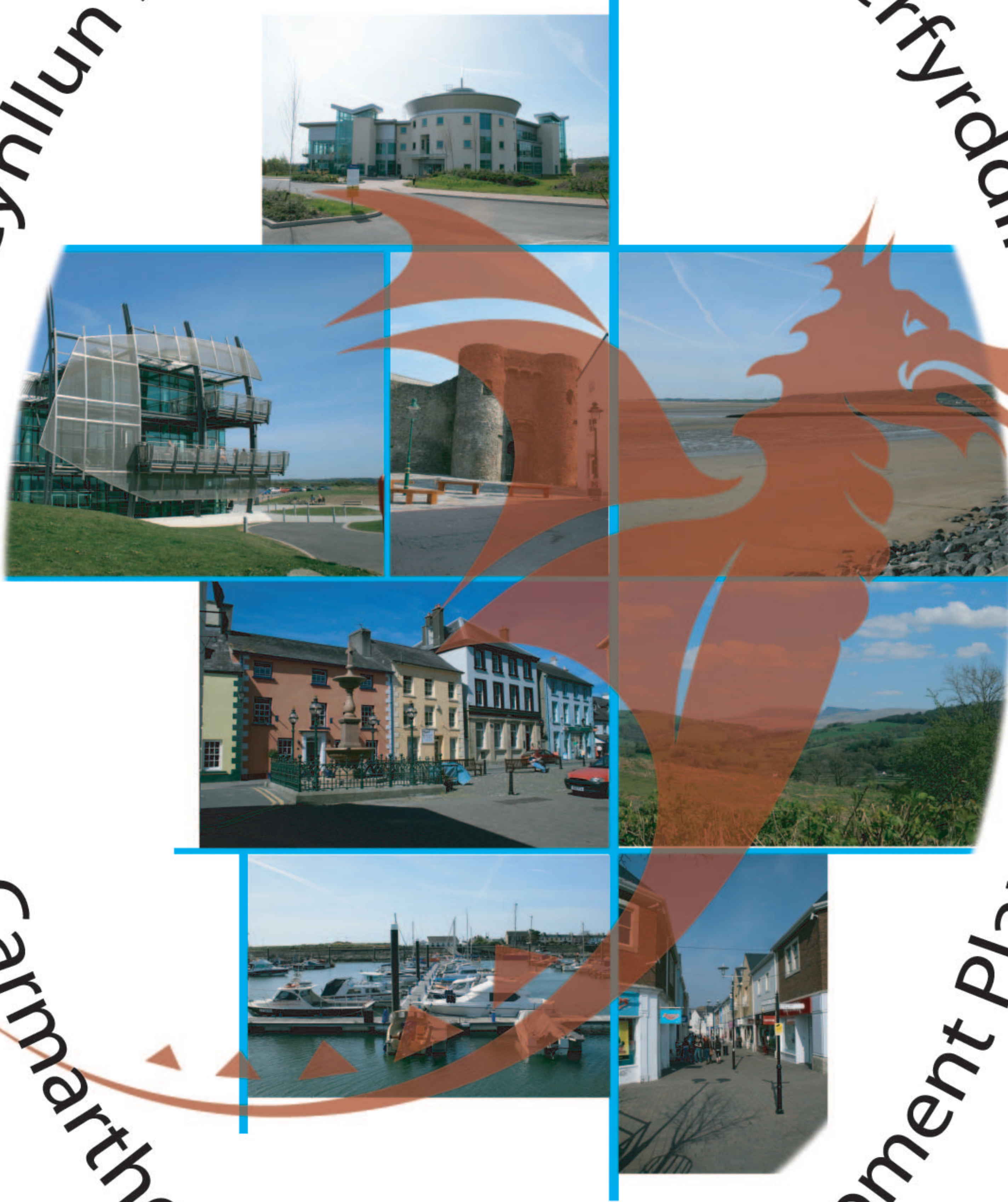


Sustainable Development and Climate Change - Draft Topic Paper 5

Cynllun Datblygu Lleol Sir Gaerfyrddin



Carmarthenshire Local Development Plan

October 2010

Overview

Carmarthenshire County Council is in the process of preparing a Local Development Plan (LDP) for its area (excluding that part contained within the Brecon Beacons National Park).

The LDP will set out the Authority's policies and proposals for the future development and use of land within its administrative area. Upon adoption, the LDP will supersede the existing Unitary Development Plan (UDP), with decisions on planning applications primarily based on its content. It therefore provides a measure of certainty about what kind of development will, and will not, be permitted in particular locations during the plan period.

The Council, as part of the preparation of the LDP, was required under regulation 15 of the Local Development Plan Regulations to publish its pre-deposit proposals (or the Preferred Strategy as it is often referred to) for public inspection and invite comments accordingly. The Preferred Strategy was published in November 2009 and is available for viewing on the County Council's website. The pre deposit proposals include an Initial Sustainability Appraisal –Strategic Environmental Assessment (SA-SEA) report and the Habitats Regulations Assessment (HRA) Preliminary Screening Report. A SA-SEA Scoping Report, which includes a sustainability evidence baseline, was published back in September 2008 and is also available on the County Council website.

The Council is formulating the Deposit LDP in accordance with the Delivery Agreement. This paper seeks to inform the Deposit LDP and will contribute towards the evidence base which will underpin the Plan.

How to Have Your Say

Whilst this paper is the not subject to a formal consultation the Council as part of its ongoing community involvement, would welcome your views on its content.

Regard should also be had to the pre deposit proposals documents and associated background material. All of the documents are all available on the County Council website or by contacting the Forward Planning Section. Authorisation to publish this Paper for informal public consultation was attained at the LDP Advisory Panel held on the 30 March 2010.

Executive Summary

The promotion of Sustainable Development (SD) is embedded into the heart of the Welsh Assembly Government's (WAG) constitution and as such the WAG has a statutory duty to develop Wales in ways which contribute sustainably to people's social, economic and environmental wellbeing. Accordingly, the prevalence of SD as a central organising principle means that it is of high relevance to the land use planning system.

This paper reviews important national, regional and local Plans Policies and Programmes (PPP) concerning SD. Given the over arching role of SD, the focus of this Paper will be on land use planning relevant PPP. It should be noted that a full and detailed review of national and regional PPP is provided within the Sustainability Appraisal-Strategic Environmental Assessment (SA-SEA) Scoping Report (available on the County Council website)

In terms of the ecological footprint of Carmarthenshire by theme, the paper clearly notes that Housing (21%), Food (27%) and Transport (21%) take up a sizable proportion of the overall figure. These are all issues that a land use plan can make a contribution towards addressing.

The ecological footprint for per person for Carms according to 2006 figures was 4.39 and for Wales it was 4.41. One Wales One Planet sets out a target of reducing the per person figure to 1.88 within the lifetime of a generation and the Carmarthenshire LDP pre deposit proposals contain a framework consisting of strategic objectives, policies, targets/indicators and a spatial strategy that seek to make a contribution towards reducing the ecological footprint of the County.

The carbon footprint measures the global green house gas emissions of consumption. In *One Wales One Planet* (2009), the WAG gives a commitment to radically reduce by 80-90% the Country's use of carbon based energy, resulting in a similar reduction in greenhouse gas emissions. This equates to a 3% annual reduction in carbon emissions. This has direct relevance to the LDP.

In terms of the role of the LDP in promoting SD and tackling Climate Change, there is potential to make tangible and quantifiable/measurable contributions within the following areas:

- **The protection and enhancement of species and landscapes;**
- **Ensuring that carbon neutral buildings and homes are delivered.** This includes promoting sustainable construction modes via BREEAM and the Code for Sustainable Homes (see appendix 5 of the full Paper);
- **Planning for sustainable transport** and reducing the km driven by motor car can be promoted via **good spatial planning** and ensuring that good relationships exist between public transport, places of work, homes and leisure destinations. Scope also exists to support local level initiatives such as travel plans and Sustainable Travel Town schemes;
- **Planning for food security and promoting local production;**
- **Planning for sustainable waste management;**
- **Planning for water management** (including securing a sustainable water supply of high quality and promoting sustainable drainage modes) does fall within the remit of the LDP. The LDP must also reduce the vulnerability of communities by ensuring that development is not located in flood risk areas;

- **Planning for Wellbeing** (including promoting good health, reducing poverty and helping to deliver affordable housing);
- **Planning for a resilient economy** (via the promotion of green jobs, sustainable tourism and energy security/innovation and renewables).

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APPENDICIES

1 Introduction

- 1.1 The promotion of Sustainable Development (SD) is embedded into the heart of the Welsh Assembly Government's (WAG) constitution and as such the WAG has a statutory duty to develop Wales in ways which contribute sustainably to people's social, economic and environmental wellbeing. Accordingly, the prevalence of SD as a central organising principle means that it is of high relevance to the land use planning system. It should be noted that SD is already a central organising principle with regards the Community Strategy Review process.
- 1.2 The promotion of SD is a key underpinning principle of the LDP and as such the LDP will seek to address some headline sustainability issues. This includes socio-economic factors such as obesity, energy/food security and also mitigating against the cause and effect of climate change eg flooding, waste and carbon emissions. The LDP will make a contribution towards addressing socio-economic issues such as obesity, energy/food security and access to housing, and will also assist in ensuring that communities are resilient and adaptable to the causes and effects of climate change. A specific and relevant strategic town planning intervention is to reduce the need to travel by motor car and this is a key underpinning principle of the existing development plan for the County – the Unitary Development Plan.
- 1.3 The UK's shared framework for sustainable development states that the goal of sustainable development is to : "enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations".
- 1.4 At a Welsh level, the WAG states that : "In Wales, sustainable development means enhancing the economic, social and environmental wellbeing of people and communities, achieving a better quality of life for our own and future generations: In ways which promote social justice and equality of opportunity; and In ways which enhance the natural and cultural environment and respect its limits – using only our fair share of the earth's resources and sustaining our cultural legacy".
- 1.5 ***According to the WAG, "Sustainable Development is the process by which we reach the goal of sustainability". Crucially, in terms of land use planning and the context of this paper, this statement does not class development as detrimental to sustainability, so long as that development is based upon the principles of sustainability.*** Therefore, a clear link is made between land use planning (which is set up to mediate and shape development) and sustainability. Accordingly, the prime objective of the LDP is not to stop development, but to ensure that development is beneficial and sustainable. It is therefore clear that the land use planning system has an important role in delivering sustainable development at a local and national level within Wales.
- 1.6 Whilst acknowledging and reviewing existing SD data, priorities and policies, this Paper will also consider 'futures issues'/trends via a 'horizon scanning' approach. As stipulated in the WLGA Sustainable Development Framework Guidance, failure to recognise and respond to future trends represents a strategic risk to the capacity of communities to become resilient to the effects of climate change. At a time when economic pressures are focusing attention

onto the present, it is more important than ever that the LDP is equally informed by 'future issues'.

1.7 This Topic Paper will provide a key part of the evidence base for the LDP. The paper includes the following :

- An overview of SD and Climate Change as a topic area.
- A review of relevant national and regional plans policies and programmes in respect of SD and Climate Change
- A review of relevant local plans policies and programmes in respect of SD and Climate Change
- Tackling the cause and effect of climate change via SD approaches.
- A discussion on the role of the LDP in addressing some of the issues identified.
- Further work required and evidence base development.

1.8 This paper has been informed by the first of the UKCP09 scientific reports "The climate of the United Kingdom and recent trends" Met Office Hadley Centre, Exeter, UK - Jenkins, G.J., Perry, M.C., and Prior, M.J. (2008). It is also informed by 'FUTURES, TRENDS AND HORIZON SCANNING FOR WELSH LOCAL GOVERNMENT' Dr. Alan Netherwood (July 2008). It also draws significantly upon the "Wales' Ecological Footprint - Scenarios to 2020" E. Dawkins, A. Paul, J. Barrett, J. Minx and K. Scott (2008) Stockholm Environment Institute. This report recalculates Wales' ecological footprint using 2003 data, and also calculates this for the six Spatial Plan areas in Wales, and for each of the 22 local authorities. For the first time, a time series for the Welsh ecological footprint, covering the period 1990-2003, is provided. This report is referred to as the 'Stockholm Paper' throughout this Topic Paper. The 2006 estimates used within this Paper have been generated using Version 2 of the Resources and Energy Analysis Programme (REAP). The 2006 estimates supersede the 2004 estimates generated through REAP Version 1 and previously available online at www.sei.se/reap . They also supersede the 2003 results generated for the Welsh Assembly Government and the South East of England published in early 2008. Estimates for 2001, 2003, 2004 and 2006 are not directly comparable due to improvements in the source data and methodology used.

2 Future issues and scenarios

- 2.1 This Section outlines an introductory overview of how society could look if sustainable development approaches are/are not incorporated into the way we work and live. Some key issues/discussion points are bolded as a means of facilitating discussion/developing awareness of the some of the key issues within the SD subject area.
- 2.2 Section 2.3 offers a **hypothetical** account of a society which is poorly equipped to deal with the impact of climate change. This society has done little to tackle the cause and effect of climate change via the promotion of SD. The passage is sourced (and slightly modified) from the WLGA SD Framework (2009) material <http://www.wlga.gov.uk/english/environment-regeneration/future-horizon-scanning-report/>. A series of issues (threats & opportunities) are now facing this society. The passage provides an useful precede when considering the key role of SD within the preparation of the LDP.

2.3 Society and Climate Change in 2040 - a **hypothetical** scenario:

- 2.3.1 In 2040 Carmarthenshire is experiencing a range of impacts from **climate change** both within the area and through the effects on the global and national **economy**. The **landscape, infrastructure** and the **social fabric of communities is affected**. Global average annual **temperatures** have continued to rise up to 4oC from 2008 levels, as the global economy has **failed to curb emissions**. This has caused **environmental catastrophe** in low lying areas around the world. 250 million people are now **living outside their country of origin**. The EU and UK has opened its doors to environmental **refugees**. UK government policy requires Carmarthenshire to **accommodate** 6,000 additional **migrants** within its valley communities and main towns over the next 5 years, **stretching local services** significantly beyond their limit.
- 2.3.2 Regional economies all over Europe are becoming retrenched as a result of **failing food supply** chains due to **climate change** elsewhere. There are signs that the local food economy is responding positively to more **local demand**. While local agriculture has been able to **diversify the crops** it is able to grow, this and further population growth has put **water resources under extreme pressure**. The **water cycle is less predictable** making medium term water planning difficult. The past four summers have seen standpipes in many of Carmarthenshire's communities and local politicians are being called to account in the local media. There are drives by water companies for a **new reservoir** in Carmarthenshire to help this situation, but this **would mean flooding existing communities** and a designated nature conservation site in a valley in the north of the borough.
- 2.3.3 Wales is experiencing **unprecedented flooding** as sea levels have **risen by 2metres** (double the predicted levels due ice melt and ocean expansion) and rainfall has become more **extreme** in both winter and summer. This has made some **communities** in Carmarthenshire **untenable**. There is not enough money for **flood protection** and there is a clear need to **relocate up to 20,000 people** in the short term and plan for **future migration inland**. There are some critical **infrastructural problems** resulting from increased flooding in Carmarthenshire. On the coast there is an old landfill site which, if

flooded, would cause dispersed pollution affecting an internationally protected nature reserve and coastal communities. The main **transport** routes in the area are regularly **affected by flooding**, increased subsidence and landslips – this is affecting the local economy and potential investment from outside Wales. **Travel is interrupted** by road surface melt and buckling rails due to hotter temperatures in summer. **Sewerage and drainage systems are not coping** with increased summer rainfall.

2.3.4 **Regular heat waves** every summer (34oC+) are causing **increased mortality and acute health problems** among the elderly and very young. Schools are **regularly closed** due to high temperatures and many care centres are finding it difficult to keep residents and visitors cool due to **high energy prices** for air conditioning and **un-adaptable facilities**. The local **tourist economy is experiencing growth** as ski-ing is no longer available in Europe and **fuel prices are high**. Many UK residents are holidaying in Wales due to its **environmental quality**. There is **greater use of public open space** and demand for **local recreational facilities** including several planning applications for open air swimming pools. **Increased tourist numbers are testing existing parks, transport and waste infrastructure to the limit**.

2.3.5 For service providers and organisations in Carmarthenshire the **speed of climate change and subsequent impacts and demands have come as a shock**. All of the trends are set to **continue and worsen** due to past **emissions already within the climate system**. A strategic and decisive response is required from the Local Authority and partners to ensure basic well being of its citizens.

2.3.6 Section 2.4 below offers a vision of a sustainable society. The passage depicts what a sustainable society looks like and is sourced from the WAG One Wales One Planet document p 20 (2009). A series of issues and opportunities emerge from the passage. These demonstrate how a sustainable society will produce sustainable communities that can become resilient to the negative effects of climate change and also take advantage of the positive effects. The passage provides an useful precede when considering the key role of SD within the preparation of the LDP.

2.4 The vision of a Sustainable Society:

2.4.1 Across society there is recognition of the need to **live sustainably** and **reduce our carbon footprint**. People understand how they can contribute to a **low carbon, low waste society**, and what other sectors are doing to help. These issues are firmly embedded in the curriculum and workplace training. People are taking action to **reduce resource use, energy use and waste**. They are more strongly **focused on environmental, social and economic responsibility**, and on local **quality of life** issues, and there is **less emphasis on consumerism**. Participation and transparency are key principles of Government at every level, and individuals have become stewards of natural resources. We have strong, active, resilient and supportive **communities** where people take responsibility for their own actions and how they affect others. Wales is a **bi-lingual society**, is **fairer and more equal**, and there is a **reduction in the gap between rich and poor**. **Employment** levels are **high**, and people enjoy a greater work-life balance, with more opportunities for volunteering.

- 2.4.2 People **work closer to home**. Many communities are taking action locally to reduce emissions and have developed local carbon budget programmes. Action has been taken to ensure that **reducing greenhouse gas** emission and the impacts of **climate change do not increase social exclusion** in Wales. People are active in maintaining the quality of the local environment where they live. **Economic regeneration** is undertaken with **sustainable development at its core**, and promotes **low carbon, low waste** ways of **working**. There has been a **huge growth in businesses that supply the goods and services needed to support a sustainable economy**, including within the third sector. **Efficiency** is everything. This growth has been underpinned by the development of training and qualifications in key sectors and in key skills needed for the production of low carbon, low waste goods and services. Wales is home to a number of **world-leading technology development** companies and manufacturing plants. The emphasis is on durable, recycled, recyclable and re-usable goods, and goods which are low carbon. These products are used locally and exported. Much **more freight** is moved **by rail**.
- 2.4.3 **The energy intensity of society has decreased significantly**. There has been a consistent **drop in energy and water demand**. There has been a major **increase in renewable energy** generation, **offshore and onshore**. All remaining fossil fuel plants have much **improved energy efficiency**, use their waste heat **productively**, and have **carbon capture and storage** fitted.
- 2.4.4 **Heavy industry** and the power generation sector have **greatly improved** the energy **efficiency** of their processes and reducing the embedded carbon in their products. Large, **energy intensive sites** are maximising the **productive use of waste heat** and supplying other businesses and homes.
- 2.4.5 **Waste - whether of energy or other resources is taboo** - both from a cost and societal impact. There is less light pollution. **Resources are valued**, and as a result there has been a huge **reduction in waste production** and a much greater **emphasis on reuse**. Composting and recycling are at very high levels, and the **third sector** is active in providing services to enable reuse and recycling.
- 2.4.6 **Walking** and **cycling** are much more **commonplace**. There is greatly **enhanced provision** for cyclists and pedestrians within towns and cities, with improved walking and cycling **networks**, as well as better **street design** and **traffic management** measures. There are fast, reliable, affordable **public transport services** connecting **major settlements**. There are frequent, reliable mass transit services within cities and more heavily urbanised regions. There is a **coherent network** of sustainable **transport options** within rural Wales. **Travel Plans** are part of all new developments. All employers develop and implement Travel Plans. The 'school run' has been replaced by organised school transport or group walking/cycling. **Petrol and diesel prices remain high**, engine efficiency has increased with the widespread take-up of hybrid vehicles. People buy smaller, more efficient cars, and lift-sharing is a common way of travelling. **The carbon content of transport fuels has reduced**. The rate of growth in **air travel** has slowed down and it is **no longer** regarded as a **necessity**.

- 2.4.7 **Good quality housing for all is the norm. Homes and businesses are far more energy efficient and sustainable** - all **existing buildings**, at least meet Energy Performance Certificate Standard C, and many are **on the way** to becoming **carbon neutral**. All **new buildings are constructed to the highest standards of energy and water efficiency and are zero carbon**. **New development and infrastructure is located, designed and constructed for the climate it will experience over its design life, and to minimise travel needs**. The public sector has led the way in this area, and **sustainable development** is the **central organising principle** of public service. Public buildings, schools, further and higher education institutions, hospitals and community buildings have been early, visible demonstrators of **greater energy efficiency and renewable technology**. They have also pioneered staff and service delivery approaches that **minimise the need to travel**. Many **services** are available **locally** and **IT is used extensively** to connect to specialist services.
- 2.4.8 Sustainable development and global citizenship is firmly embedded into all levels of educational provision and lifelong learning in Wales, and all schools are Eco and Fair Trade schools. Levels of **educational attainment** are high. There is a much greater emphasis on **preventative health care** throughout society, and many more people are **living healthy** lives through eating better and **getting exercise more regularly** as part of their everyday lives.
- 2.4.9 **Increased localisation** means that people are eating more **seasonal fresh local produce**, and this has **stimulated agriculture and horticulture** in Wales, and there is much greater consideration given to the **provenance** of food. Much more food is **traded locally** where possible and fairly with the developing world when not. There is a huge **expansion in allotments and community gardening**. The **agricultural industry has adapted** to a changing climate, including making provision for the **impacts of warmer summers, and changes in land use and management**.
- 2.4.10 Wales' **historic landscapes have been preserved**, and we have learnt lessons from our past which inform our future management. We are now also **managing land** for the wider **ecosystem services** it can deliver, including **carbon storage, water quality, flood management, and landscape quality and connectivity for wildlife to adapt to climate change**. As a result, the **loss of biodiversity has been halted** and there is a **greater** number, range and genetic diversity of **wildlife**. There is a greater understanding and appreciation of our **interdependence with the other species** we share the planet with. The **marine environment** is managed **sustainably** on an ecosystem approach, and there is an ecologically coherent, representative and well managed network of marine protected areas. Many more people enjoy **sustainable access** to enjoy the **countryside and coast**. Wales' **historic environment and heritage is sustainably managed** and is **accessible** to all, **sustainable transport** options for **visitors** are more commonplace, and this underpins Wales' brand as a **sustainable tourism destination**. Wales is recognised internationally as a leader in sustainable development, and learns from, and exports its learning to, other small nations and regions in Europe and wider afield.

- 2.5 The issues derived from the 2 scenarios provide a pre cursor for the reminder of the Topic Paper. The bolded/headline issues captured from the passages are outlined in appendix 1. The Paper will now undertake to discuss how the land use planning system, and the LDP in particular, can play a key role in delivering the *sustainable society* outlined in Section 2.4. This *sustainable society* will better equip local communities to manage and address the 'future issues' impacts as outlined in Section 2.3.

3 A review of relevant national and regional Plans, Policies and Programmes (PPP) in respect of Sustainable Development & Climate Change.

3.1 This section will review important national and regional Plans Policies and Programmes (PPP) concerning SD. Given the over arching role of SD, the focus of this Paper will be on land use planning relevant Plans Policies and Programmes (PPP). It should be noted that a full and detailed review of national and regional PPP is provided within the Sustainability Appraisal-Strategic Environmental Assessment (SA-SEA) Scoping Report (available on the County Council website).

3.2. **Planning Policy Wales Edition 2 (June 2010)** confirms the prominent position of SD and Climate Change within the planning process. It also underlines the fact that the promotion of SD is manifested within the functions, policies and strategies of the WAG.

3.2.1 PPW Edition 2 offers an useful definition of SD in Wales, thus:
*“Sustainable development in Wales means enhancing the economic, social and environmental well being of people and communities, achieving a better quality of life for our own generations in ways which:
“promote social justice and equality of opportunity; and
enhance the natural and cultural environment and respect its limits – using only our fair share of the earth’s resources and sustaining our cultural legacy”*

3.2.2 In a similar way to Section 2 of this Topic Paper, PPW Ed 2 utilises a scenario/future issues approach to communicate the importance of planning for climate change. PPW Ed 2 also confirms the importance of taking forward a complimentary or ‘twin track’ approach towards tackling climate change through recognising:

(a) the causes of climate change – *by acting, and acting urgently, to cut emissions of greenhouse gas emissions that cause climate change in order to avoid the worst impacts of climate change; and*

(b) the consequences of climate change – *the impact of the changes in the climate that are already locked into the climate system which will occur as a result of past emissions.*

3.2.3 The document provides some key information that must be utilised within the deposit LDP. This guidance includes the following

- **General Principles** – these underpin the WAG approach to planning policy;
- **Key policy objectives** – these should be taken into account in the preparation of development plans and in development management;
- **Priorities for urban and rural areas** – including sustainable urban regeneration and the promotion of sustainable rural communities;
- **Sustainable settlement strategies** – the promotion of sustainable patterns of development in accordance with the policy goals of the WSP (note - the Carmarthenshire LDP Preferred Strategy is based upon a Sustainable Distribution Spatial Option);

- **Use of local designations** – eg green wedges;
- **Preference for re use of land** – a definition is provided;
- Conserving the best and most **versatile agricultural land**;
- **Sustainability through good design** (see appendix 5 of this paper for BREEAM and the Code for Sustainable Homes);
- Supporting the **welsh language**

3.2.4 National guidance is particularly relevant to SD because it clarifies the tools available within the land use planning system to progress SD approaches. These include:

- The proximity principle – locating development and settlements in a manner which reduces the need to travel;
- Conservation and enhancement of the historic and natural environment;
- Reduction in waste and in the use of non renewables;
- Promotion of sustainable energy and infrastructure;
- Avoiding flood risk and unfavourable ground conditions;
- Re use of brown field land wherever possible;
- High standards of design;
- A suitable range and mix of housing for all members of society;
- A suitable supply of employment land and acknowledgment of diversity;
- Accessibility to services, retail and leisure including recreation, education and community buildings.

3.3 **People Places Futures – The Wales Spatial Plan (WSP) Update (WAG 2008)**

3.3.1 The WSP offers a framework for Wales which is underpinned by 5 themes that seek to promote SD approaches. These themes are:

- Building Sustainable Communities;
- Promoting a Sustainable Economy;
- Valuing our Environment;
- Achieving Sustainable Accessibility; and
- Respecting Distinctiveness.

3.3.2 The WSP also offers a settlement hierarchy which is particularly relevant within the context of LDP plan preparation. Carmarthenshire is covered by 3 Wales Spatial Plan Strategic Areas, which emphasises the County's strategic importance at a national and regional level. A detailed account of the visions for these strategic areas is provided within the LDP Preferred Strategy (available on the Council website). All of the three WSP area visions emphasise the importance of sustainability and provide a local context to the wider national WSP framework as set out in 3.3.1 above. There is also a need to pay regard to the recently published **Low Carbon Wales** – Regional Priorities for Action, Sustainable Development Commission (Nov 2009) – see <http://www.sd-commission.org.uk/publications.php?id=1018>

3.3.3 Llanelli, Carmarthen and Ammanford/Cross Hands are identified as settlements of a regional importance in the WSP due to the fact that they are key socio-economic hubs for the region.

3.3.4 **Carmarthen** has a key role to play as a major service centre and cross boundary settlement. It is the gateway to West Wales and plays an important sub regional role given its prominent hierarchical classification within the Haven, Western Valleys and Central Wales Area Action Plans and Strategic Frameworks.

3.3.5 **Llanelli** is a major service centre and plays an important sub regional role within the Swansea Bay & Western Valleys Action Plan and Strategic Frameworks (including the Sustainable Regeneration Framework and the Waterfront Master plan).

3.3.6 **Ammanford/Cross Hands** is a major service centre and plays an important sub regional role within the Swansea Bay & Western Valleys Action Plan and Strategic Frameworks (including the Sustainable Regeneration Framework and Valleys Regional Park).

3.4 Sustainability Appraisal – Strategic Environmental Assessment

3.4.1 The undertaking of a Sustainability Appraisal (SA) is an integral part of LDP preparation and is mandatory under the provisions of the Planning and Compulsory Purchase Act 2004. The SA will consider the LDP's social and economic effects as well as the environmental aspects. In accordance with the EU Strategic Environmental Assessment Directive (2001/42/EC) and as part of the LDP preparatory process, the Authority is required to undertake a formal environmental assessment of plans and programmes which are likely to have significant effects on the environment.

3.5 Habitats Regulations Assessment (HRA)

3.5.1 In accordance with European Directive 92/43/EEC (The Habitats Directive) competent authorities are required to undertake an Appropriate Assessment (AA) when a land use plan, either alone or in combination with the effects of other plans or projects, is likely to have a significant effect on one or more European designated sites. In preparing their LDP, good practice requires that local planning authorities should endeavour to adapt their plans to ensure that the integrity of the European Designated site is not adversely affected.

3.6 One Wales – A progressive agenda for the WAG

3.6.1 This document sets the agenda for the future governance of Wales and provides an overview of the political commitment to tackling the cause and effect of climate change. It also provides commitments to reduce carbon emissions and increase green energy production.

3.7 One Wales – One Planet (May 2009)

3.7.1 One Wales: One Planet (May 2009) sets out how WAG intends to promote sustainable development in the exercise of its functions. This document confirms the prominent role that the land use planning system has to play in delivering sustainable development at a local, regional and national level.

3.7.2 The document outlines a vision for sustainable development within Wales and then proceeds to outline how this vision can be achieved, thus:

The vision for a Sustainable Wales is one where Wales:

- lives within its environmental limits, using only its fair share of the earth's resources so that our ecological footprint is reduced to the global average availability of resources, and we are resilient to the impacts of climate change;
- has healthy, biologically diverse and productive ecosystems that are managed sustainably;
- has a resilient and sustainable economy that is able to develop whilst stabilising, then reducing, its use of natural resources and reducing its contribution to climate change;
- has communities which are safe, sustainable, and attractive places for people to live and work, where people have access to services, and enjoy good health;
- is a fair, just and bilingual nation, in which citizens of all ages and backgrounds are empowered to determine their own lives, shape their communities and achieve their full potential.

3.7.3 The document reinforces the importance of sustainable development as a central organising principle for WAG and encourages and enables others to embrace sustainable development. Stressing the importance for Wales to use only its share of the planet's resources, it sets out a series of targets and objectives aimed at delivering on this commitment.

3.7.4 The Strategy is organised according to 5 headline indicators. These are outlined below:

- **Sustainable Resource Use** – Wales Ecological Footprint;
- **Sustaining the Environment** – percentage of Biodiversity Action Plans and habitats recorded as stable or increasing;
- **A Sustainable Economy** – GVA and GVA per head;
- **A Sustainable Society** – percentage of the population in low income households;
- **Wellbeing** – the wellbeing of Wales.

3.8 The UK's Shared Framework, One Future – different paths (2005)

3.8.1 The UK's shared framework, One Future - different paths states that the goal for sustainable development will be: *"pursued in an integrated way through a sustainable, innovative and productive economy that delivers high levels of employment, and a just society that promotes social inclusion, sustainable communities and personal well-being. This will be done in ways that protect and enhance the physical and natural environment, and use resources and energy as efficiently as possible"*

3.8.2 The overarching principles of the UK shared framework is:

- Living within environmental limits;
- Ensuring a strong, healthy and just society;
- Achieve a sustainable economy;
- Promoting good governance;
- Using sound science responsibly.

3.9 **Energy Wales Route Map Consultation Document**

3.9.1 This document is discussed in detail within the Energy Topic Paper, however it should be noted here that a national commitment is in place from the WAG to develop renewable energy and to cut carbon emissions. The **Energy Policy Statement (WAG March 2010)** ‘ A Low Carbon Revolution’- states that Wales has the potential to produce nearly twice the amount of electricity it currently uses, through wholly renewable sources by 2025. The strategy sets out the Assembly Government’s ambitions to accelerate the transition to a low carbon energy economy in Wales and provides the detail of how this will be achieved. It sets out a three tiered approach which focuses on maximising energy savings and efficiency, moving to resilient low carbon electricity production via secure indigenous renewable forms of energy such as marine, wind, water and biomass, and ensuring that the transition to low carbon energy maximises opportunities for practical green jobs and skills.

3.10 **Environmental Strategy for Wales (WAG 2006)**

3.10.1 This Strategy sets out a commitment to place sustainability at the core of activity and thus making it a central organising principle in a strategic manner. Reference will be made to this document as part of LDP plan making preparation and the development of the evidence base, particularly within the context of SD and climate change issues.

3.11 **The Pitt Review – learning lessons from the 2007 floods (2007)**

3.11.1 A series of recommendations are provided within the review and a number of them have land use planning relevance. Detailed reference to the Pitt Review will be contained within the Strategic Flood Consequence Assessment Paper (SFCA) which is included within the Water Management Topic Paper. The SFCA is a vital element of the evidence base for the LDP, particularly with regards to SD and climate change.

3.12 **Local Vision: Developing and Delivering Community Strategies (WAG, 2008)**

3.12.1 This document provides guidance on updating community strategies and on forming Local Service Boards (LSB). The guidance emphasises the importance of integration, joined up working and collaboration. The document sets out three main aims for LSB and Community Strategies and the progression of SD is one of these main aims. Action on climate change is also discussed as a Community Strategy priority.

3.12.2 Reference will be required to this document as it provides an useful over arching framework for the progression of SD and tackling climate change via Community Strategies. This is of utmost importance to LDP plan making preparation because the LDP has a key role in delivering land use planning relevant parts of the Community Strategy and indeed the visions and objectives of both plans should be closely interlined. Version 2 of the LDP Issues, Vision and Objectives Topic Paper will undertake to evaluate the relationship between the emerging LDP and the Community Strategy review process so as to ensure that synergy is in place.

3.13 Draft climate change Bill 2007

3.13.1 This Bill, once passed into UK law, will introduce a statutory carbon emissions target of a 60% reduction from 1990 levels by 2050. The final details of the legislation are to be decided, however what is certain is that these requirements will have a huge impact at National level within the WAG and also at local level within Local Authorities. It is clear therefore that the LDP will have a role in assisting Wales to meet these national targets for reduction of carbon emissions.

3.14 Planning and Climate change (2006 consultation)

3.14.1 This document discusses the huge global challenge presented by climate change. Reference will be required to this document as it suggests that land use planning has a key role to play in combating the cause and effect of climate change.

3.14.2 The document includes a draft MIPPS on climate change and makes clear recommendations as to how the land use planning system can make a contribution in a number of ways. Some of the main aspects are outlined below:

- The design of developments will need to consider climate change mitigation and adaptation measures
- The use of sustainable building standards will need to be considered
- The incorporation of local renewable and low carbon energy sources should be implicit
- High standards for strategic sites, including master planning, are key.

3.14.3 It is clear from the above that the LDP will need to provide a mechanism for combating the cause and effect of climate change.

3.15 Other key documents that will inform the SD Evidence Base

3.15.1 Reference will also be needed to the below documents when preparing the LDP (It should be noted that a full and detailed review of national and regional PPP is provided within the Sustainability Appraisal-Strategic Environmental Assessment (SA-SEA) Scoping Report (available on the County Council website).

- Improving your home: A climate change guide;
- Sustainable Homes: A national strategy for Wales (2009);
- Code for Sustainable Homes;

- Fuel Poverty Strategy 2009;
- Climate Change Strategy;
- Food and Drink from Wales Strategy;
- Wales Transport Strategy and regional/local plans;
- Sustainable Travel Towns Initiative % SWWITCH – Progress in Partnership RTP for South West Wales 2010-15;
- Safe Routes in Communities Programme;
- Sustainable Tourism Framework;
- Sustainable Tourism Strategy;
- Environment Strategy and Action Plan 2008-11;
- Farming Food and Countryside – Building a Secure Future;
- Rural Development Plan 2007-13;
- Wales Soils Action Plan;
- Bio Energy action plan;
- National Energy Efficiency and Savings Plan;
- Sustainable Development Framework for Local Government (WLGA);
- Strategic Policy Position on Water;
- River Basin Management Plans, Water Framework Directive;
- Integrated Coastal Zone Management Strategy;
- Wales Fisheries Strategy;
- Green Jobs Strategy;
- Skills that Work for Wales Strategy;
- Renewable Energy Route map;
- Marine Energy Strategic Plan;
- Rural Health Plan and Health Inequalities Strategy;
- Quality food for all in Wales Strategic Action Plan;
- Water Recreation Strategy;
- Walking and Cycling Action Plan for Wales;
- Climbing Higher;
- Creating an Active Wales;
- Child Poverty Strategy;
- Iaith Pawb.

3.16 PPW Technical Advice Note 8 (Renewable Energy) contains advice on:

- Renewable Energy and Planning
- Offshore Wind and other Onshore Renewable Energy Technologies
- Design and Energy
- Implications for Development Plans
- Development Control
- Monitoring

In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.17 PPW Technical Advice Note 14 (Coastal Planning) contains advice on:

- Planning the coastal zone
- Recreation
- Heritage coasts and non statutory coastal groupings
- Shoreline management plans

In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.18 PPW Technical Advice Note 15 (Development and Flood Risk) contains advice on:

- Development advice maps
- Nature of development or land use
- Justifying the location of built development
- Assessing flooding consequences
- Surface water run-off from new development
- Action through Development Plans
- Development control

In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.19 PPW Technical Advice Note 12 (Design) contains advice on

- Definition of design
- Design process
- Design issues by topic
- Local planning authority design policy and advice
- Design and access statements

In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.20 Other Technical Advice Notes (including transport, tourism, waste, minerals and the Welsh language) are outlined at: <http://wales.gov.uk/topics/planning/policy/tans/?lang=en>

In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.21 Technical Advice Note 22 'Planning for Sustainable Buildings', supports the MIPPS for Planning for Sustainable Buildings and contains advice on:

- Sustainable building standards
- Reducing carbon emissions by using the energy hierarchy
- Preparing development proposals to deliver sustainable buildings
- The role of local planning authorities
- Planning conditions and obligations
- Setting higher local requirements for sustainability on certain sites.

3.22 In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.23 The WAG new land management scheme, **Glastir (WAG 2010)** will play a vital role in enabling the farming community to respond positively to the challenges posed by climate change. The new Glastir scheme has been designed to reflect the Welsh Assembly Government's commitment to tackle the causes of climate change as well as its strategies on food and farming. It will contract farmers to manage the land in a way that meets today's challenges and priorities, including biodiversity, climate change and water management.

3.24 Other MIPPS (including planning for retailing and town centres, planning for renewable energy, housing, good design and transport are outlined at: <http://wales.gov.uk/topics/planning/policy/mipps/?lang=en>
In order to progress SD within the LDP plan making process, the advice contained within technical advice note will be heeded. It is important, however, not to simply repeat national guidance.

3.25 **The South West Wales Low Carbon Routemap (2010)**

3.25.1 The above document was jointly developed by representatives from a number of public, private and third sector organisations in South-West Wales, together with the WAG and the SDC Wales. It follows the publication of the SDC's Low Carbon Wales report, which looked at how the regions of Wales could move towards low-carbon status.

3.25.2 Under the Routemap, the role of the region's low-carbon task force is to co-ordinate low-carbon activity, build links with business and be a focal point for low-carbon inward investment. Its priorities include establishing a forum for renewable energy development and establishing a low-carbon brand for the region.

3.25.3 The document outlines a vision, mission and priorities for action:

Vision:

"South West Wales is Wales" first low carbon region, having cut its CO2 emissions by at least 80% against a 1990 baseline."

Mission:

"To champion South West Wales" transition to low carbon and inspire its citizens, public servants and businesses to leave no stone unturned in their pursuit of a lower carbon, more sustainable, future. This so that South West Wales is widely recognised as a leading EU region on the transition to low carbon by 2013."

Priorities:

"We are committed, collectively, to develop, inspire and champion action to reduce carbon emissions in South West Wales based on seven critical areas of opportunity":

- Built environment;
- Renewable energy;
- Land use and food;
- Transport;
- Waste;
- Business & skills;
- Hearts & minds.

4 A review of relevant local Plans, Policies and Programmes (PPP) in respect of Sustainable Development & Climate Change.

4.1 A review of local PPP will further enhance the evidence base of the LDP in respect of climate change and SD. Detailed regard should also be given to detailed statistical information obtained in other Topic Papers as well as information contained within the LDP Preferred Strategy, the SA-SEA Scoping Report and the HRA Screening Report (all available on the County Council's websites).

4.2 Profile of Carmarthenshire

4.2.1 Carmarthenshire is located in south west Wales and is the third largest county in the principality, covering some 2,371 square kilometres (11.5% of the total land mass of Wales). The County adjoins seven local authorities - Pembrokeshire, Pembrokeshire Coast National Park, Ceredigion, Powys, Brecon Beacons National Park, Neath Port Talbot and Swansea.

4.2.2 The characteristics drawn out from a review of the baseline data can be summarised as follows:

- Carmarthenshire is a County of contrasts;
- It is a predominately rural area in terms of land mass;
- The more densely populated urban areas are located to the south east of the County.
- It has an ageing population;
- The Welsh language is a key component in the social, cultural and economic life of the County;
- The rural economy, (particularly agriculture).plays an important part in the County's economy;
- Parts of the eastern side of the County have social, economic and environmental pressures relating to the decline of traditional industries;
- The importance of the natural environment is recognised, as is the need to continue protecting its nature conservation and biodiversity interests;
- There is a rich and varied built and historic environment with a large number of designations associated with it (Conservation Areas, Listed buildings, and Scheduled Ancient Monuments)

4.2.3 Carmarthenshire has the fourth highest population out of the 22 local authorities within Wales and accounts for 6% of the total Welsh population. With a resident population of 179,500 at mid-2007, Carmarthenshire has a growing population, which increased by 5,800 from 2001 to mid-2007.

4.2.4 A full statistical profile of the County, along with a summary of some of the key issues and drivers, can be found in the LDP Preferred Strategy (available on the County Council website). Relevant information is also obtainable from the SA-SEA Scoping Report and in other papers that form part of the LDP evidence base.

4.3 **Community Strategy and Environment partnership**

- 4.3.1 The LDP Manual confirms that the Community Strategy should be considered as the relevant overarching strategy for the County. The Carmarthenshire Community Strategy emphasises a key role for sustainability and it is defined as one of the key underpinning themes within the strategy.
- 4.3.2 The Community Strategy for Carmarthenshire sets out 5 Strategic Pillars that convey the sort of place that the Council wants the County to become. These pillars are therefore central to the Council's corporate planning structure and have a significant influence in programming priorities and policy interventions. The 5 pillars have been used to group the principal social, economic and environmental issues that the LDP will seek to address as well as the LDP Strategic Objectives. The Community Strategy mission statement has also directly informed the LDP Vision. The LDP Stakeholder Forum has undertaken considerable work in ensuring that the LDP Vision and Objectives are capable of delivering the land use relevance elements of the Community Strategy (of which sustainable development is a key driver). The LDP Preferred Strategy (available on the County Council website) demonstrates how the LDP vision, objectives and policies intend to deliver the Community Strategy.
- 4.3.3 The LDP must continue have regard to the review of the Community Strategy if it is to deliver on the Community Strategy's sustainability aims. Version 2 of the LDP Issues, Vision and Objectives Topic Paper will undertake to evaluate the relationship between the emerging LDP and the Community Strategy review process so as to ensure that synergy is in place. The LDP will also need to develop a role within the deliberations of the Environmental Partnership.

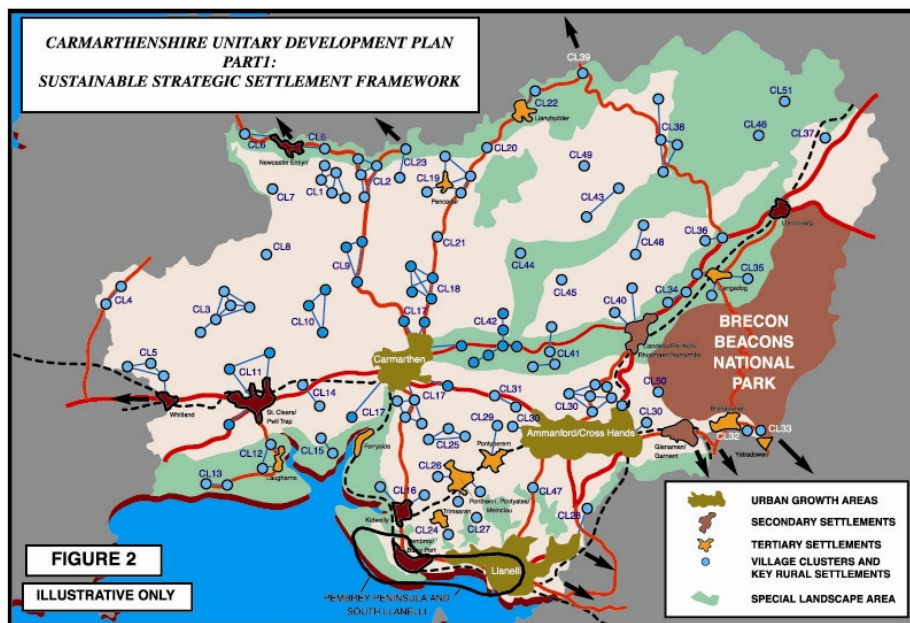
4.4 **Carmarthenshire Unitary Development Plan (adopted 2006)**

- 4.4.1 Adopted in July 2006, the Unitary Development Plan (UDP) is the current land use plan for the Carmarthenshire (excluding that part contained within the Brecon Beacons National Park). The UDP will remain the statutory development plan until superseded by the LDP and as such the UDP will be utilised as the basis for the consideration of all development proposals and planning applications until that time.
- 4.4.2 The UDP was founded on the principles of sustainability and sought to reduce dependence on the motor car, reflect the area's diversity and promote sustainable socially inclusive communities. In seeking to underpin these key sustainability drivers, the UDP set out a hierarchical settlement strategy within its Sustainable Strategic Settlement Framework (SSSF) for the Plan area. This approach centres on a sustainable model wherein settlements are categorised by virtue of their respective level of provision in terms of the services and facilities accessible to their own residents and surrounding communities.
- 4.4.3 The UDP is the current land use plan for the County and is based on a sustainable spatial strategy that promotes SD and seeks to tackle climate change issues. A total departure from the UDP Spatial Strategy is unjustified in the preparation of the LDP because the UDP provides an important

evidence baseline for the consideration of how SD and climate change can be addressed within the LDP.

4.4.4 Reference should be made to the UDP Critique Background Paper that is published as part of the wider LDP evidence base. This paper concludes that the strategic direction of travel set out within the UDP remains relevant, robust and sound, particularly when evaluated against the updated PPW (June 2010). The UDP is continuing to manage the developmental wants and needs of the County against a backdrop of increasingly volatile market conditions. It also continues to offer a degree of certainty within a County of socio-economic & geographical contrast so that the distinctive needs of the rural and urban areas of the County are accommodated. The County remains competitive and attractive on a regional and national basis and the UDP urban growth areas of Llanelli, Carmarthen and Ammanford/Cross Hands have a prominent role in the Wales Spatial Plan and Area Action Plans

4.4.5 The following diagram illustrates the Settlement Framework (SSSF) set out within the UDP:



4.4.6 The SSSF is therefore highly relevant and robust because it seeks to underpin sustainable development approaches.

4.5 Carmarthenshire LDP – Pre Deposit Proposals Documents (2007-2009)

4.5.1 The Council, as part of the preparation of the LDP, was required under regulation 15 of the Local Development Plan Regulations to publish its pre-deposit proposals (or the Preferred Strategy as it is often referred to) for public inspection and invite comments accordingly. The Preferred Strategy was published in November 2009 and is available for viewing on the County Council’s website. The pre deposit proposals were supported by the Initial SA-SEA report and the HRA Preliminary Screening Report. Sustainable Development is at the core of the Pre deposit documents, as outlined overleaf:

(a) Policy and baseline review – The Strategy discusses a series of policies and provides a pre change baseline for the County. This is a key part of evidence for the LDP in respect of SD and climate change.

(b) Issues, Vision and Objectives - The Strategy outlines a range of national, regional and local issues and also provides a vision and strategic objectives for the LDP. This is a key part of evidence for the LDP in respect of SD and climate change. Sustainability is an underpinning theme throughout the issues, vision and objectives contained within the Strategy.

(c) Spatial options- The Strategy discusses 5 possible spatial options and identifies sustainable distribution as the most appropriate option in terms of promoting SD and tackling the cause and effect of climate change. This is a key part of evidence for the LDP in respect of SD and climate change

(d) Preferred strategy, policies and settlement hierarchy (inc key diagram) – The Preferred Strategy offers a settlement framework which is based upon three main growth areas and a series of lower tier settlements. This promotes SD and seeks to reduce the need to travel. The settlement framework is depicted on the LDP Key Diagram. A series of strategic policies are also included within the Preferred Strategy. This is a key part of evidence for the LDP in respect of SD and climate change

(e) Monitoring and indicators – A series of monitoring indicators are included within the Strategy and these are informed by One Wales One Planet. More work needs to be done to enhance the monitoring framework in terms of SD and climate change and as such this Topic Paper will play a role in informing these targets and indicators (particularly in terms of carbon emission reduction, sustainable building standards and sustainable energy production) ahead of the development of the Deposit LDP.

(f) Candidate Sites – A methodology, which is strongly aligned with the promotion of SD, is contained within the appendices of the Strategy. This is a key part of evidence for the LDP in respect of SD and climate change.

4.6 **LDP Background/Topic Papers relating to SD and climate change**

4.6.1 The preparation of the Preferred Strategy was informed by, and is supported through, a robust evidence base including a range of background papers and documents. These documents are available, where applicable, for download on the Authority's website and are outlined below. These documents form a key part of the evidence base for the LDP in respect of SD and Climate Change.

(a) Topic specific Discussion Papers that set out the key issues for the LDP were published in 2007. These include a full review of key sustainability issues facing the County and a discussion on how land use planning can contribute towards promoting SD and tackling the cause and effect of climate change.

(b) LDP Key Stakeholder Forum Consultation Reports that set out the pre deposit consultation undertaken with a range of stakeholders were published in 2008-9. The need to plan for a sustainable County that has resilient communities was at the heart of the deliberations of Forum members.

(c) Topic Papers covering: Issues, Vision and Objectives, Spatial Options, Population and Settlement Hierarchy were published in 2009. These documents form a key part of the evidence base for the LDP in respect of SD and Climate Change.

4.7 **The SA-SEA Scoping Report** forms a key part of evidence for the LDP in respect of SD and Climate Change. It was published in September 2008 and collected a wide range of evidence, including a review of local, national and regional PPP. The SA-SEA also developed a series of strategic objectives for the County and these provide the basis for the sustainability framework which will be used to measure the sustainability of the LDP. The most up to date version of the Sustainability Objectives are outlined in appendix 3 of this Paper. The SA-SEA Scoping Report contains a range of evidence in respect of the below sustainability topics.

- Sustainable Development;
- Biodiversity;
- Air Quality;
- Climatic Factors;
- Water;
- Material Assets;
- Soil;
- Cultural Heritage;
- Landscape;
- Population;
- Health and Well Being;
- Education and Skills;
- Economy;
- Social Fabric.

4.8 **An Initial SA-SEA Report** was published alongside the Preferred Strategy. The initial SA-SEA report evaluates the Preferred Strategy's sustainability (including its strategic objectives, options and policies) by measuring it against the Sustainability Framework. This forms a key part of evidence for the LDP in respect of SD and Climate Change and shows the iterative function of the SA process within LDP plan making. Areas of non compatibility between the Preferred Strategy and the Sustainability Framework will need to be addressed as part of the preparation of the deposit LDP. The SA/SEA process will now proceed in tandem with the Plan making process and a Draft Environmental Report (essentially the full SA/SEA Report) will be published accordingly. In order to view how the SA/SEA Initial Report is being used iteratively to inform the LDP, reference should be made to the reporting of the Preferred Strategy to full Council on the 21/4/10. This report demonstrates how suggested improvements to the strategic policies contained within the SA/SEA Initial Report are being iteratively built into the LDP policy framework. Version 2 of the Issues, Vision and Objectives Topic paper will also clarify how incompatibilities between the Preferred Strategy and the Sustainability

Framework can be addressed via the mitigation measures and policy controls.

- 4.9 **A Habitats Regulations Assessment (HRA) Preliminary Screening Report** was published alongside the Preferred Strategy. The HRA screening report outlines all of the European sites found within the County and the immediate region and reviews their features and conservation objectives before evaluating the potential impact of the Preferred Strategy (including its strategic sites and policies) thereon. In addition to reviewing the Strategy, the HRA screening report considers other plans and policies so as to highlight any potential in combination effects. This forms a key part of evidence for the LDP in respect of SD and Climate Change. Areas of potential adverse impact on European Sites that were raised within the Screening Report will need to be addressed as part of the preparation of the Deposit LDP. The Forward Planning Section and JACOBS are already working with key agencies such as the Environment Agency and the Countryside Council for Wales in order to address some of the issues raised (eg air quality). These discussions include giving due consideration to potential mitigation measures that can be built into the emerging LDP policy framework. Where it is deemed appropriate, more detailed assessments of potential impacts on international nature conservation sites will be undertaken as the plan making process proceeds.
- 4.10 **A Technical Officer's Group** meeting has been convened. The remit of this group will include ensuring that the promotion of SD, and the tackling of the cause and effect of climate change, remains at the core of the LDP. The deliberations and contribution of this group is likely to yield key evidence in respect of SD. Authorisation to convene this group was attained at the LDP Advisory Panel meeting held on the 30 March 2010.
- 4.11 **There are also a range of studies/topic papers currently under development** that will assist in identifying the role of SD and climate change within the LDP. These documents form a key part of the evidence base for the LDP in respect of SD and Climate Change.
- 4.12 In terms of Carmarthenshire County Council strategies, the following are directly relevant to this paper and are available for viewing/download on the County Council's website:
- **Carmarthenshire County Council SD Policy (2004)**
 - **Carmarthenshire County Council SD Strategy (2005)**
 - **Carmarthenshire County Council Climate Change Strategy (2006).**

5 Tackling the cause and effects of Climate Change by incorporating Sustainable Development approaches.

5.1 Overview

- 5.1.1 According to the UKCP09 scientific reports, warming of the global climate system is unequivocal, with global average temperatures having risen by nearly 0.8 °C since the late 19th century, and rising at about 0.2 °C/decade over the past 25 years. The UKCP09 scientific reports also state that it is very likely* that man-made greenhouse gas emissions caused most of the observed temperature rise since the mid 20th century (*very likely = >90% probability, likely = >66% probability).
- 5.1.2 According to Anderson (2007), increases in carbon concentrations as a result of industrialisation have resulted in a 1 degree celsius increase in global temperature. Research suggests that a 2 degree Celsius increase would result in dangerous climate change and 4 degree Celsius increase would result in catastrophic climate change. If current carbon emissions continue at their current rate, then the UK will have emitted two thirds of its total emissions to 2050 if it is to stay within a safe budget of emissions. It is clear therefore that reductions are required to UK emissions and at a Wales level these commitments are communicated via One Wales One Planet.

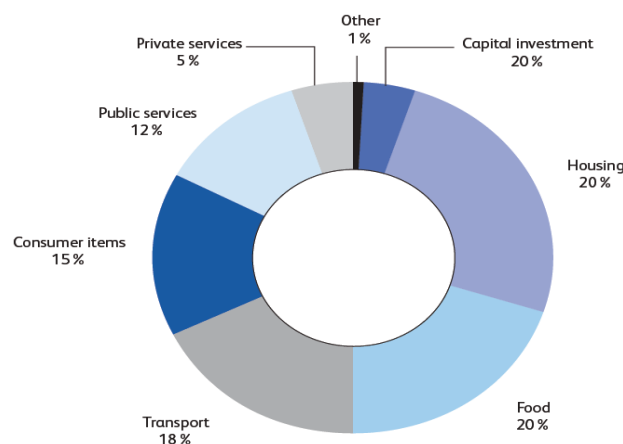
5.2 The Ecological Footprint

- 5.2.1 Put simply, an ecological footprint can be defined as a measurement of sustainability. The ecological footprint is essentially an accounting system that recognises the impact of every good and service purchased by taking into account all of the energy and resources used to make the product. The added value of measurement is the emphasis placed on exploring where reductions can be made through policies which influence consumption patterns and behaviour. A concise and helpful definition is provided within the Stockholm Report; thus:
- 5.2.2 “The ecological footprint is an indicator of the total environmental burden we place on the planet. It represents the area of land needed to provide raw materials, energy and food, and to absorb pollution and waste created... It is measured in global hectares and is usually expressed as a per person measure...It accounts for the environmental consequences throughout the supply chain of what people buy and use”
- 5.2.3 “The ecological footprint takes account of carbon dioxide emissions (CO₂) associated with consumption activities and expresses them as an area of land... The burning of fossil fuels contributes to the ‘CO₂ area’ component of the ecological footprint and in addition the ecological footprint also accounts for the area required to produce the food and fibre people consume and the area required to provide space for Welsh productivity infrastructure such as roads and buildings... It is a completely separate indicator from the carbon footprint. The carbon footprint measures the global green house gas emissions of consumption only”

5.3 Wales Ecological Footprint by theme

5.3.1 The below chart depicts the ecological footprint of Wales by theme. The Chart has been lifted from One Wales-One Planet (WAG, 2009). It can be clearly noted that Housing (20%), Food (20%) and Transport 18% take up a sizable proportion of the overall figure. These are all issues that a land use plan can make a contribution towards addressing. The ecological footprint per person for Wales according to 2006 figures was 4.41 and for the UK it was 4.64. The footprint of Wales has increased at an average rate of 1.5% per person between 1990 and 2003. One Wales One Planet sets out a target of reducing the per person figure to 1.88 within the lifetime of a generation.

5.3.2 Ecological footprint in global hectares per capita by theme for Wales (2003). Source: One Wales One Planet.

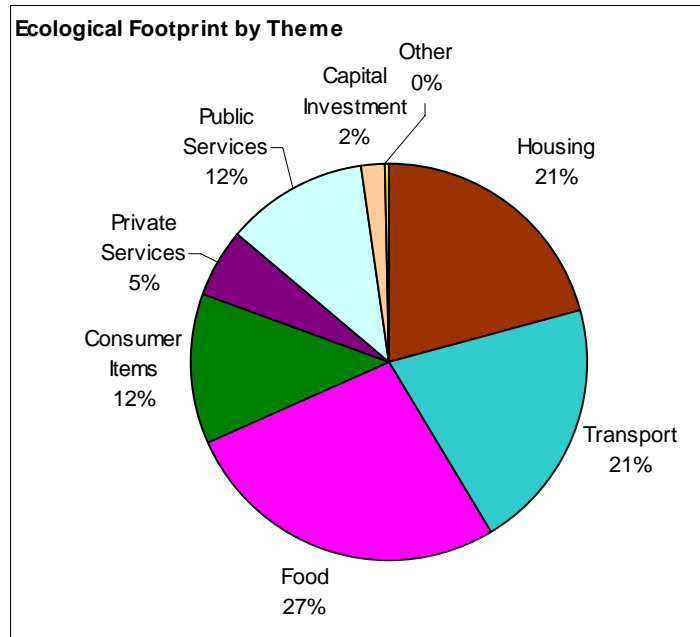


5.4 Carmarthenshire Ecological Footprint by theme

5.4.1 The chart overleaf depicts the ecological footprint of Carmarthenshire by theme. It can be clearly noted that Housing (21%), Food (27%) and Transport (21%) take up a sizable proportion of the overall figure. These are all issues that a land use plan can make a contribution towards addressing. The LDP Preferred Strategy sets the context for making a contribution towards reducing the ecological footprint of the County. The Strategy seeks to reduce the need to travel and is underpinned by a settlement framework that reflects the County's rural and urban characteristics, needs and issues

5.4.2 The ecological footprint for per person for Carmarthenshire according to 2006 figures was 4.39 and for Wales it was 4.41. One Wales One Planet sets out a target of reducing the per person figure to 1.88 within the lifetime of a generation and the Carmarthenshire LDP pre deposit proposals contain a framework consisting of strategic objectives, policies, targets/indicators and a spatial strategy that seek to make a contribution towards reducing the ecological footprint of the County.

5.4.3 Ecological footprint in global hectares per capita by theme for Carmarthenshire (2006). Source: Stockholm Environment Institute.



5.5 Carbon Footprint

5.5.1 The carbon footprint measures the global green house gas emissions of consumption.

5.5.2 In One Wales One Planet, the WAG gives a commitment to radically reduce by 80-90% the Country's use of carbon based energy, resulting in a similar reduction in greenhouse gas emissions. This equates to a 3% annual reduction in carbon emissions. This has direct relevance to the LDP.

5.5.3 The table below outlines the Carbon and Green House gas footprints of the UK, Wales and Carmarthenshire. It is clear that the LDP will have a role in addressing these issues at a local level, particularly given that the SA-SEA Scoping Report identified that the County is the fourth highest in Wales in terms of Km driven by the motor car. Accordingly, the LDP Preferred Strategy outlines a spatial strategy that builds upon the UDP SSSF in terms of reducing the need to travel.

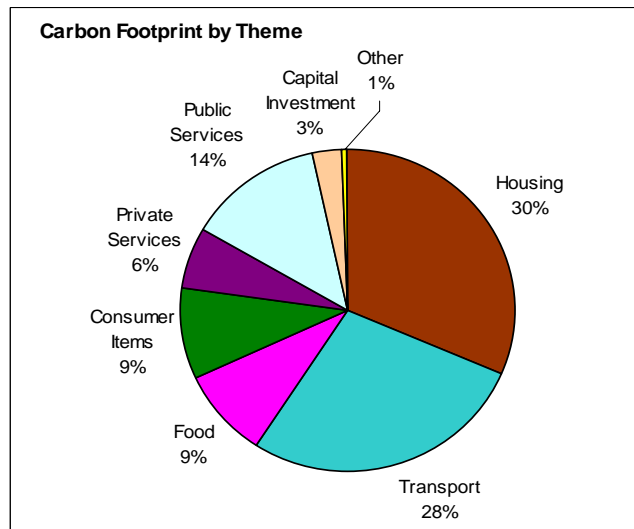
5.5.4 Carbon Footprint (tonnes CO₂/capita) and GHG Footprint (tonnes CO₂eq/capita) for UK, Wales and Carmarthenshire (2006).
Source: Stockholm Environment Institute

Carbon Footprint (tonnes CO ₂ /capita)	GHG Footprint (tonnes CO ₂ eq/capita)
12.10	16.24
UNITED KINGDOM	
11.72	15.64
WALES	
11.89	15.87
CARMARTHENSHERE	

5.6 Carmarthenshire Carbon Footprint by theme

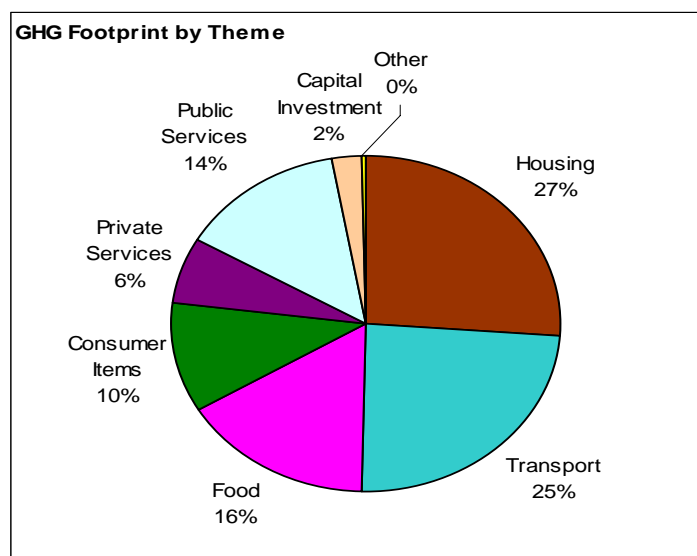
5.6.1 The below chart depicts the carbon footprint of Carmarthenshire by theme. It can be clearly noted that Housing (30%) and Transport (28%) take up a sizable proportion of the overall figure. These are issues that a land use plan can make a contribution towards addressing. The LDP Preferred Strategy does stress the importance of sustainable energy use and high building standards (including the promotion of BREEAM and the Code for Sustainable Homes).

5.6.2 Carbon footprint in tonnes of CO₂ per capita by theme for Carms (2006):
Source: Stockholm Environment Institute.



5.6.3 The Chart below outlines the greenhouse gas footprint of the County and of particular reference within this chart is the emissions generated by food and transport (as well as housing)

5.6.4 Greenhouse gas footprint in tonnes of carbon dioxide equivalent (CO₂eq) per capita by theme for Carms (2006). Source: Stockholm Environment Institute.



- 5.6.5 For a detailed explanation of the methodology used to determine the data depicted on this Section, reference should be made to the Stockholm Report. The footprint results are broken down in detail; 63 household consumption categories, with a further 73 categories attributed to government services and public infrastructure (capital investment). See <http://www.resource-accounting.org.uk/downloads>. A detailed breakdown on the County's ecological footprint is provided in Appendix 4. The 2006 estimates have been generated using Version 2 of the Resources and Energy Analysis Programme (REAP). The 2006 estimates supersede the 2004 estimates generated through REAP Version 1 and previously available online at www.sei.se/reap. They also supersede the 2003 results generated for the Welsh Assembly Government and the South East of England published in early 2008. Estimates for 2001, 2003, 2004 and 2006 are not directly comparable due to improvements in the source data and methodology used.

6 Climate Change effects, Horizon Scanning and Future issues.

6.1 Future society

6.1.1 Whilst reviewing existing SD data, priorities and policies, this Paper also seeks to acknowledge 'futures issues'/trends via a 'horizon scanning' approach. As stipulated in the WLGA Sustainable Development Framework Guidance, failure to recognise and respond to future trends represents a strategic risk to the capacity of communities to become resilient to the effects of climate change. At a time when economic pressures are focusing attention onto the present, it is more important than ever that the LDP is equally informed by 'future issues'. Section 2 of this paper provides a hypothetical scenario, which is based upon material contained within the WLGA SD Framework, and is also informed by the UKCIP 2002 data.

6.1.2 The headline 2040 climate change effects/future issues for Wales from the horizon scanning/scenarios work undertaken within the WLGA material discussed suggest that:

- The infrastructure & social fabric of communities will be affected;
- Environmental catastrophe could take place;
- Refugees are likely to be living outside their country of origin;
- There will be stretched services and failing food supplies;
- Local demand will increase and there will be diversification of crops;
- Water resources will be under extreme pressure and the water cycle will be less predictable;
- There may be need for new reservoirs which would mean flooding existing communities;
- There may be unprecedented flooding as the sea level has risen by 2 metres;
- Communities will become untenable and future migration inland will take place;
- There will be infrastructural and transport problems;
- Sewerage and drainage systems will not be coping;
- There will be regular heat waves with increased mortality and acute health problems;
- Un-adaptable facilities will be regularly closed due to high heating bills
- Peak oil has been reached and fuel prices are high;
- The tourist economy is growing and opportunities for green innovation, (including renewable energy production);
- Increased tourist numbers are testing existing parks, transport and waste infrastructure to the limit;
- The speed of climate change and subsequent impacts and demands will have come as a shock;
- Habitats and species are vulnerable;
- The gap between rich and poor will increase.

6.1.3 It should be noted that the above scenarios are based on worse case climate change effects and is based on a 2040 society that had not sought to tackle SD and climate change issues decades earlier. The above effects portray the importance of communities becoming resilient and thus the importance of incorporating SD as a central organising principle within contemporary Wales

is clear. A passage, outlining a hypothetical scenario for a society which is vulnerable to the effects of climate change, is provided in section 2 of this paper. This passage is based upon the WLGA SD Framework, which has been informed by the UKCIP 2002 data. Factual information on climate change effects and scenarios can be sourced from UKCIP 2002 data and the UKCP09 scientific reports.

6.2 Mitigation Measures for tackling the cause and effect of climate change and promoting SD approaches within the LDP

6.2.1 Whilst acknowledging the key role of the LDP in promoting SD and tackling the cause and effect of climate change, it should be noted that the LDP cannot seek to secure these benefits in isolation. The Stockholm Report states that although National policies are moving in the right direction, substantial reductions in Wales' per capita footprint by 2020 will require additional measures (many of which are above and beyond the scope of land use planning). An expansion of measures which improve the energy performance of **existing housing** and **reduce food waste** have considerable potential to reduce the ecological footprint of Wales. High profile examples, such as the Code for Sustainable Homes, will need to be supported by **complementary measures** such as an expanded **retrofit programme** for existing housing. Although good sustainable transport schemes exist, more needs to be done to reduce the footprint associated with travel behaviour on a national level. Potential opportunities are offered by the Wales Spatial Plan to deliver a modal shift in travel **behaviour**.

6.2.2 In general, no one policy or measure can deliver a reduction in the footprint by itself – rather, **a package of measures within and across different policy areas**, reinforcing each other and sending out consistent messages, is required. This is important to note within the context of the LDP, because the LDP alone cannot address the issues raised within this paper. High level policy intervention/legislation will be required to change mindsets and tackle issues such as improving the energy efficiency of existing buildings and homes.

6.2.3 In terms of the role of the LDP, there is potential to make tangible and quantifiable/measurable contributions within the following areas:

- The protection and enhancement of species and landscapes;
- Ensuring that carbon neutral buildings and homes are delivered that minimise energy demand. This includes promoting sustainable construction modes via BREEAM and the Code for Sustainable Homes (see appendix 5);
- Planning for sustainable transport and reducing the km driven by motor car can be promoted via good spatial planning and ensuring that good relationships exist between public transport, places of work, homes and leisure destinations. Scope also exists to support local level initiatives such as travel plans and Sustainable Travel Town schemes;
- Planning for Food Security and promoting local production does fall within the remit of the LDP;
- Planning for sustainable waste management (eg promoting sites for sustainable waste management which promote re use and recycling) does fall within the remit of the LDP;

- Planning for Water management (including ensuring a sustainable supply of quality water, promoting sustainable drainage modes and addressing flooding issues) does fall within the remit of the LDP. This includes reducing the vulnerability of communities by ensuring that development is not located in flood risk areas;
- Planning for Wellbeing (including promoting healthy communities by tackling inactivity/ obesity, reducing poverty and helping to deliver affordable housing) does fall within the remit of the LDP;
- Planning for a resilient economy (via the promotion of green jobs, tourism and energy security/innovation and renewables) does fall within the remit of the LDP;
- Paragraph 3.2 on page 14 of this Paper outlines the list of requirements contained within PPW for promoting SD within the land use planning system. Reference will also be made to PPW Edition 2 (June 2010) as the plan making process proceeds towards deposit;

6.3 One Wales – One Planet

6.3.1 One Wales One Planet offers a series of SD indicators that can be utilised to inform the monitoring and indicators contained within the LDP. These SD themes, headline indicators and supporting indicators are outlined below.

6.3.2 The indicators of SD

Theme	Headline Indicator	Supporting Indicators
Sustainable Resource Use	Wales Ecological Footprint	Total Resource Use, Greenhouse Gas Emissions, Waste arisings, Household Waste recycled or composted and mobility
Sustaining the Environment	% of biodiversity action plan habitats and species recorded as stable or increasing	Trends in bird populations, Ecological impacts or air pollution, Air Quality, River Quality, Soil Quality and Sustainable Water Resource Management
A Sustainable Economy	GVA and GVA per head	Employment, Resource Efficiency, Electricity from renewable resources
A Sustainable Society	% of population in low income households	Health inequality, benefit dependency, housing, accessibility, crime
Wellbeing	Wellbeing in Wales	Education, childhood poverty, pensioner poverty, workless households, active community participation and Welsh language

6.3.3 **Reducing Wales Ecological Footprint** - One Wales One Planet states that there is a need to reduce Wales's ecological footprint to 1.88 global hectares per person. It suggests that this can be achieved by:

- Over a lifetime of a generation, Wales will need to radically reduce by 80-90% its use of carbon based energy, resulting in a similar reduction in greenhouse emissions;
- To achieve the above, Wales will need to make annual 3 % reductions in greenhouse gas emissions, make all new buildings zero carbon and move towards producing as much electricity from renewable sources by 2025 as is consumed;
- Wales will need to move towards becoming a zero waste nation;
- There is a need to organise the way we live and work so that there is a reduction in the need to travel;
- Wales will need to have a resilient economy that is sustainable;
- Wales will need to source more food locally within season;
- Wales will need to reduce the gap between rich and poor and make commitments to tackle child and fuel poverty.

6.3.4 **Planning for Water Management** will include interpreting flooding data and the Strategic Flood Consequence Assessment currently being commissioned. The LDP will need to factor in water supply and quality issues and promote sustainable urban drainage systems. It should allocate land in areas that are resilient to flooding & coastal erosion. The importance of this topic to SD and climate change is clear; particularly with regards to reducing the future vulnerability of communities. It is also key to ensuring a sustainable supply of quality water into the future and managing foul and surface water.

6.3.5 **Planning for Food Security and encouraging local production** includes protecting land of high agricultural value and key provisions such as allotments. The importance of this topic to SD and climate change is clear; particularly with regards to irrigation issues, globalisation, resource use, migration, conflict and health. The LDP will need to provide a policy framework that encourages and supports local production and consumption. 'Glastir' (WAG 2010) is an important policy consideration.

6.3.6 **Planning for Energy Security, reducing Waste and increasing GVA** will include interpreting the evidence gathered within the Energy, Utilities and Infrastructure research and the Waste Topic Paper. The importance of this topic to SD and climate change is clear, particularly with regards to Energy Security issues (including the increasing & volatile prices of fuel and globalisation pressures), Information Technology dependency, and Tourism growth. The LDP will need to provide a policy framework (inc targets and indicators) that provides favourable conditions for green innovation and sustainable resource use/production whilst also reducing waste and reliance upon landfill.

6.3.7 **Planning for Sustainable Buildings** will include promoting BREEAM and the Code for Sustainable Homes. The LDP must provide a policy framework (inc targets and indicators) to deliver sustainable buildings, however there will need to consider and test the deliverability of these objectives within market conditions (particularly with regards to the viability of affordable housing). See Appendix 5 for more.

- 6.3.8 **Planning for Transport** will include contributing towards reducing the km driven by private motor car and promoting sustainable & accessible transport modes. The LDP Preferred Strategy provides a framework for nurturing good relationships between public transport, places of work, homes and leisure destinations. This Topic is of particular importance to the LDP because Carmarthenshire is the 4th highest County in Wales in terms of km driven by private motor car. The County is characterised by large rural areas with the majority of services, homes and employment situated in the South East. As well as reducing emissions and promoting good air quality, the LDP will seek to ensure equality of access for all given the envisaged increase in fuel costs. The LDP will also promote walking, cycling etc. The Transportation Topic Paper will inform and support the deposit LDP.
- 6.3.9 **Planning for the Natural Environment** will include protecting and enhancing habitats and species as well as the landscape. The LDP will need to provide a policy framework that provides favourable conditions for habitats and species and as such the Habitats Regulations Assessment will provide a useful input into these aims.
- 6.3.10 **Planning for Wellbeing** will include acknowledging the issues that will emerge from increasingly complex and diverse trends and demographics; including population, poverty levels (including access to transport, fuel, services and affordable homes) and health. The LDP will also need to acknowledge the diversity that exists within the County in terms of culture, heritage and recreation and will need to provide a policy framework that provides favourable conditions for promoting equality within the built and natural environment.

6.4 SD and climate change - local issues and drivers.

- 6.4.1 14 headline issues and elements of vision for the LDP are identified within the Preferred Strategy. A total of 69 issues and drivers, comprising 16 national & regional (NRID), and, 53 local (LID) are grouped under the 5 strategic pillars of the Community Strategy. The 14 headline issues are underlined in the issues section and are captured in word-bites grouped under the Community Strategy's 5 pillars. The Strategy advises that stakeholder engagement and consultation and a review of baseline data have resulted in identification of the issues. This section follows an overview of the profile of Carmarthenshire which outlines the geographical context and reviews the environmental, social and economic characteristics of the area.
- 6.4.2 In response to the identification of the 14 headline issues, the WAG has commented (within its response to the Preferred Strategy) that it is critical that the issues are transparently evidence-based. It was also felt that it may be of benefit to clarify the key questions that the Strategy needs to address under each of the abbreviated key issues because it would benefit the focus of the LDP strategy and deposit plan if a small number of critical land-use issues were clearly identified which the LDP will aim to address and to deliver on. Accordingly, this paper will inform the further development of the land use relevance and focus of the 14 headline issues within the context of SD and climate change. Potential exists within Version 2 of the Issues, Vision and Objectives Topic Paper to re visit these issues in light of the SD and Climate Change issues raised within this Topic Paper.

7 Enhancing the LDP Evidence base in respect of Sustainable Development and Climate Change.

7.1 There are matters that have arisen from this Paper that emphasise that the SD and climate change evidence base will need to be expanded ahead of the preparation of the deposit LDP. These are outlined below:

- **An Energy Hierarchy** will need to be referenced within the LDP Deposit Plan (see appendix 5)
- **The Community Strategy Review** will be continually incorporated into the evidence base.
- The deliberations of the **Technical Officer's Group** will need to be continually incorporated into the evidence base.
- The **SA-SEA and HRA** must be continually incorporated into the evidence base.
- The **targets and indicators** outlined within the LDP Preferred Strategy need to be firmed up by developing detailed targets that align to the SD indicators as outlined within One Wales-One planet. The targets and indicators should also be informed by the evidence presented within this Paper and other evidence to hand/to be developed. Key areas are waste, affordable homes, sustainable energy production and sustainable buildings.
- **Ministerial Interim Planning Policy Statement (MIPPS) 01/2009** – (Planning for Sustainable Buildings) and **Technical Advice Note 22** 'Planning for Sustainable Buildings' provide opportunities and challenges for the LDP in respect of SD and climate change issues (see appendix 5)
- **The Waste Topic paper** will provide challenges and opportunities in respect of SD and climate change issues.
- **The Leisure and Recreation** (including open space assessment) work will provide challenges and opportunities in respect of SD and climate change issues.
- **The Biodiversity Corridor Settlement Study** will provide challenges and opportunities in respect of SD and climate change issues.
- **The Housing and Population Work** will provide challenges and opportunities in respect of SD and climate change issues.
- **The Water Management Work** (including SFCA, flooding, CFMP, SUDS and supply – eg water management plan of Dwr Cymru) will provide challenges and opportunities in respect of SD and climate change issues.
- **The Energy, Utilities and Infrastructure Work** will provide challenges and opportunities in respect of SD and climate change issues.
- **The Food Security and Agricultural land (including allotments) Work** will provide challenges and opportunities in respect of SD and climate change issues. 'Glastir' (WAG 2010) is an important policy consideration.
- **The Employment Land Study** will provide challenges and opportunities in respect of SD and climate change issues.
- **The Transport Topic paper** will provide challenges and opportunities in respect of SD and climate change issues.
- **The Affordable Housing work** will provide challenges, particularly in terms of deliverability, viability and sustainable design.

- 7.2 **An Initial SA-SEA Report** was published alongside the Preferred Strategy. The initial SA-SEA report evaluates the Preferred Strategy's sustainability (including its strategic objectives, options and policies) by measuring it against the Sustainability Framework. This forms a key part of evidence for the LDP in respect of SD and Climate Change and shows the iterative function of the SA process within LDP plan making. Areas of non compatibility between the Preferred Strategy and the Sustainability Framework will need to be addressed as part of the preparation of the deposit LDP. The SA/SEA process will now proceed in tandem with the Plan making process and a Draft Environmental Report (essentially the full SA/SEA Report) will be published accordingly. In order to view how the SA/SEA Initial Report is being used iteratively to inform the LDP, reference should be made to the reporting of the Preferred Strategy to full Council on the 21/4/10. This report demonstrates how suggested improvements to the strategic policies contained within the SA/SEA Initial Report are being iteratively built into the LDP policy framework. Version 2 of the Issues, Vision and Objectives Topic paper will also clarify how incompatibilities between the Preferred Strategy and the Sustainability Framework can be addressed via the mitigation measures and policy controls.
- 7.3 **A Habitats Regulations Assessment (HRA) Preliminary Screening Report** was published alongside the Preferred Strategy. The HRA screening report outlines all of the European sites found within the County and the immediate region and reviews their features and conservation objectives before evaluating the potential impact of the Preferred Strategy (including its strategic sites and policies) thereon. In addition to reviewing the Strategy, the HRA screening report considers other plans and policies so as to highlight any potential in combination effects. This forms a key part of evidence for the LDP in respect of SD and Climate Change. Areas of potential adverse impact on European Sites that were raised within the Screening Report will need to be addressed as part of the preparation of the Deposit LDP. The Forward Planning Section and JACOBS are already working with key agencies such as the Environment Agency and the Countryside Council for Wales in order to address some of the issues raised (eg air quality). These discussions include giving due consideration to potential mitigation measures that can be built into the emerging LDP policy framework. Where it is deemed appropriate, more detailed assessments of potential impacts on international nature conservation sites will be undertaken as the plan making process proceeds

8 Feedback to this Topic Paper

The below prompts are set out in order to stimulate responses to this Paper, however any other comments in relation to the content of the Paper will be welcomed as part of the informal consultation being undertaken.

- Does Section 2 develop an effective scenario of what future societies could look like as a result of changes to the climate and SD approaches ?
- Does section 3 offer an useful overview of national/regional Plans Policies and Programmes and confirm the role of the land use planning system in tackling the cause and effect of climate change via the promotion of SD ?
- Does section 4 offer a fair overview of local Plans Policies and Programmes and confirm the role of the LDP in tackling the cause and effect of climate change via the promotion of SD?
- Does Section 5 provide an useful definition of Ecological Footprint and Carbon Footprint measurements ?
- Do Section 5/6 adequately cover the cause and effect of climate change ?
- Does section 6 adequately cover the potential mitigation measures and SD approaches that can be taken as a means to offset future threats and maximise future opportunities ?
- Does section 7 identify the evidence that still needs to be developed and the further work that is required ahead of the preparation of the Deposit LDP ?
- What are your 'top three' SD and Climate Change issues that the LDP needs to address ?
 - Protection and enhancement of species and landscapes;
 - Delivering carbon neutral buildings and homes;
 - Promoting Sustainable Transport and reducing the km driven by motor car;
 - Food Security and promoting local production;
 - Water management, including water supply and flooding issues;
 - Wellbeing - health(inc obesity), poverty and affordable housing;
 - Economy - green jobs, tourism and energy security/innovation;
 - Other (please list)

APPENDICIES

APPENDIX 1 – HEADLINE ISSUES/WORDS TO EMERGE FROM
SCENARIO PASSAGES IN SECTION 2

Passage 1

- climate change
- economy
- landscape, infrastructure & social fabric (of) communities is affected
- temperatures
- failed to curb emissions
- environmental catastrophe
- living outside their country of origin
- refugees
- accommodate
- stretching local services
- failing food supply
- climate change
- local demand
- Diversify the crops water resources under extreme pressure.
- water cycle is less predictable
- new reservoir
- would mean flooding existing communities
- unprecedented flooding
- risen by 2metres
- extreme
- communities
- untenable
- flood protection
- relocate up to 20,000 people
- future migration inland
- infrastructural problems
- transport
- affected by flooding
- Travel is interrupted
- Sewerage and drainage systems
- not coping
- Regular heat waves
- increased mortality and acute health problems
- regularly closed
- high energy
- un-adaptable facilities
- tourist economy is experiencing growth
- fuel prices are high.
- environmental quality.
- greater use of public open space
- local recreational facilities
- Increased tourist numbers are testing existing parks, transport and waste infrastructure to the limit.
- speed of climate change and subsequent impacts and demands have come as a shock.
- continue and worsen
- emissions already within the climate system

Passage 2

- live sustainably
- reduce our carbon footprint
- low carbon, low waste society
- reduce resource use, energy use and waste.
- focused on environmental, social and economic responsibility,
- quality of life
- less emphasis on consumerism.
- communities
- a bi-lingual society
- fairer and more equal,
- reduction in the gap between rich and poor.
- Employment
- High
- work closer to home.
- reducing greenhouse gas
- climate change do not increase social exclusion
- Economic regeneration
- sustainable development at its core
- low carbon, low waste ways of working.
- huge growth in businesses that supply the goods and services needed to support a sustainable economy,
- world-leading technology development
- more freight by rail.
- The energy intensity of society has decreased significantly.
- drop in energy and water demand.
- increase in renewable energy
- offshore and onshore.
- improved
- efficiency,
- productively
- carbon capture and storage.
- Heavy industry greatly improved
- efficiency
- energy intensive sites
- productive use of waste heat
- Waste - whether of energy or other resources is taboo
- Resources are valued,
- reduction in waste production
- emphasis on reuse.
- third sector
- Walking
- cycling
- commonplace.
- enhanced
- networks,
- street design
- traffic management
- public transport services

- major settlements.
- transport options
- Travel Plans
- Petrol and diesel prices remain high,
- The carbon content of transport fuels has reduced.
- air travel no longer regarded as a necessity.
- Good quality housing for all is the norm.
- Homes and businesses are far more energy efficient and sustainable
- existing buildings, on the way to becoming carbon neutral.
- New buildings are constructed to the highest standards of energy and water efficiency and are zero carbon.
- development and infrastructure is located, designed and constructed for the climate it will experience over its design life, and to minimise travel needs.
- sustainable development - central organising principle
- greater energy efficiency and renewable technology.
- minimise the need to travel.
- services locally
- IT is used extensively
- educational attainment.
- preventative health care
- living healthy
- getting exercise more regularly
- Increased localisation
- seasonal fresh local produce
- stimulated agriculture and horticulture
- provenance of food.
- traded locally
- expansion in allotments and community gardening.
- agricultural industry has adapted
- impacts of warmer summers, and changes in land use and management.
- historic landscapes have been preserved,
- managing land
- ecosystem services
- carbon storage, water quality, flood management, and landscape quality and connectivity for wildlife to adapt to climate change.
- loss of biodiversity has been halted
- greater wildlife.
- interdependence with the other species
- marine environment
- sustainably
- sustainable access
- countryside and coast.
- historic environment and heritage is sustainably managed accessible
- sustainable transport
- visitors
- sustainable tourism destination.

APPENDIX 2 – CONSULTATIONS/MEETINGS HELD TO INFORM THIS PAPER

- 01/07/2009 Meeting held with Eurgain Powell – CCC Sustainability Team
08/12/2009 Meeting held with Eurgain Powell and Kendal Davies CCC Sustainability Team
17/12/2009 Attended WLGA Sustainability Seminar in County Hall Chamber
Dr Alan Netherwood was guest speaker.
01/04/2010 Meeting held with Eurgain Powell – CCC Sustainability Team
20/07/2010 Meeting held with CCC Environment Partnership – Topic paper presented to delegates.

The paper has also been informed by the consultation response received in respect of the consultation held on the Authority's pre deposit proposals documents in November 2009- January 2010.

APPENDIX 3 – SA-SEA SUSTAINABILITY OBJECTIVES FOR CARMARTHENSHIRE

Sustainability Topic	Ref	SUSTAINABILITY OBJECTIVE
1 Sustainable Development	1.1	To live within environmental limits
	1.2	To ensure a strong, healthy and just society
	1.3	To achieve a sustainable economy
	1.4	To remove barriers and promoting opportunities for behavioural change
2 Biodiversity	2.1	To avoid damage or fragmentation of designated sites, habitats and protected species and encourage their enhancement
	2.2	To protect, enhance and create appropriate wildlife habitats and wildlife corridors in urban and rural areas.
3 Air Quality	3.1	To maintain/reduce the levels of the UK National Air Quality pollutants
	3.2	To reduce levels of ground level ozone
	3.3	To reduce the need to travel, through appropriate siting of new developments and provision of public transport infrastructure
4 Climatic Factors	4.1	To deliver a significant reduction in the emission of greenhouse gases
	4.2	To minimise the vulnerability of Carmarthenshire to the effects of climate change through making space for water, coastal retreat and shifting habitat distribution patterns
	4.3	To require all new developments to be climate resilient
	4.4	To encourage energy conservation and higher energy efficiency
	4.5	To minimise energy consumption and promote appropriate renewable energy sources
	4.6	To climate-proof existing development, infrastructure and material assets

Sustainability Topic	Ref	SUSTAINABILITY OBJECTIVE
5 Water	5.1	To ensure water quality of rivers, lakes, groundwater and coastal areas is improved and ensure that the hydromorphological quality of water bodies is maximised
	5.2	To protect and maintain water resources in the public supply chain and ensure enough water is available for the environment at all times of year
	5.3	To minimise diffuse pollution from urban and rural areas
	5.4	To increase water efficiency in new and refurbished developments
	5.5	To make space for water, and minimise flood risk
6 Material Assets	6.1	Minimise the use of finite resources and promote higher resource efficiency and the use of secondary and recycled materials
	6.2	Support the waste hierarchy of reduce, reuse and recycle
	6.3	Encourage needs to be met locally
	6.4	Encourage the use of more sustainable resources
	6.5	Improve the integration of different modes of transport
	6.6	Encourage the use of more sustainable modes of transport (e.g. cycling and walking)
	6.7	Reducing travel needs, meeting local needs and reducing resource use by supporting the development of ICT/broadband infrastructure
7 Soil	7.1	To avoid and reduce contamination of soils, promote the regeneration of contaminated land and the reuse of brownfield sites
	7.2	To avoid loss of soils to non-permeable surfaces and minimise soil erosion
	7.3	To reduce SO ₂ and NO _x emissions and nitrate pollution from agriculture
	7.4	To eliminate the loss of high carbon soils such as peat to development

Sustainability Topic	Ref	SUSTAINABILITY OBJECTIVE
8 Cultural Heritage	8.1	To protect historic and cultural assets and local distinctiveness from negative effects of development/regeneration and support their enhancement
	8.2	To promote high quality design reflecting local character and distinctiveness
9 Landscape	9.1	To protect and enhance landscape/townscape from negative effects of land use change and to enhance landscape character and distinctiveness
	9.2	To take sensitive locations into account when siting development and to promote high quality design
	9.3	To encourage appropriate future use of derelict land
10 Population	10.1	Ensure suitable, affordable housing stock with access to education and employment facilities
	10.2	Promote the retention of younger people
	10.3	Encourage growth of the Welsh language and culture
	10.4	Promote inclusion of disadvantaged and minority groups into society
11 Health and Well Being	11.1	Create opportunities for people to live active, healthy lifestyles through planning activities
	11.2	Provide access to health and recreation facilities and services
	11.3	Encourage walking or cycling as alternative means of transportation
	11.4	Improve access and hence allow the county's population to access, enjoy and understand the local natural heritage.
12 Education and Skills	12.1	Provide accessible educational and training facilities which meet the future needs of the area
	12.2	Increase levels of literacy (in English and Welsh) and numeracy
	12.3	Promote lifelong learning
Sustainability Topic	Ref	SUSTAINABILITY OBJECTIVE
13 Economy	13.1	To promote sustainable economic growth
	13.2	To provide good quality employment opportunities for all sections of the population
	13.3	To promote sustainable businesses in Carmarthenshire

14 Social Fabric	14.1	Improve safety and security for people and property
	14.2	Promote the design of settlements that improve social fabric by removing barriers and creating opportunities for positive interactions
	14.3	Promote the delivery of affordable housing
	14.4	Improve accessibility to services, particularly for disadvantaged sections of society.

APPENDIX 4 – DETAILED BREAKDOWN OF CARMARTHENSHIRE ECOLOGICAL FOOTPRINT**Carmarthenshire****PER CAPITA FOOTPRINT**

	Ecological Footprint (gha/capita)	Carbon Footprint (tonnes CO ₂ /capita)	GHG Footprint (tonnes CO ₂ eq/capita)
TOTAL	4.39	11.89	15.87
Housing			
Actual rentals for housing	0.01	0.03	0.04
Imputed rentals for housing	0.02	0.07	0.08
Maintenance and repair of the dwelling	0.03	0.09	0.11
Electricity; gas & other fuels distribution	0.35	1.42	1.59
Goods & services for household maintenance	0.01	0.02	0.03
Direct fuel use in the home (not including electricity)	0.34	1.63	1.70
Capital Investment Housing	0.15	0.47	0.59
HOUSING TOTAL	0.91	3.72	4.14
Transport			
Purchase of vehicles	0.07	0.24	0.29
Operation of personal transport equipment	0.14	0.56	0.76
Railway transport	0.01	0.04	0.05
Road transport	0.03	0.10	0.11
Air transport	0.14	0.55	0.59
Water transport	0.04	0.14	0.15
Ancillary transport	0.00	0.01	0.01
UK residents abroad	0.09	0.19	0.28
Private vehicle fuel use (direct fuel use)	0.34	1.33	1.42
Capital Investment Transport	0.04	0.14	0.18
TRANSPORT TOTAL	0.91	3.31	3.84

Food			
Meat and meat products (excl. poultry)	0.20	0.13	0.56
Poultry meat and poultry meat products	0.06	0.05	0.22
Wild fish and fish products from catch	0.04	0.02	0.07
Fruit and vegetables	0.26	0.09	0.26
Vegetable and animal oils and fats	0.02	0.01	0.02
Dairy products	0.09	0.07	0.24
Grain mill products; starches and starch products	0.06	0.02	0.07
Bread; rusks and biscuits; pastry goods and cakes	0.04	0.05	0.09
Cocoa; chocolate and sugar confectionery	0.03	0.03	0.06
Other food products (incl. sugar)	0.04	0.04	0.08
Non-alcoholic beverages	0.05	0.06	0.11
Alcoholic beverages	0.04	0.05	0.09
Catering services	0.21	0.37	0.56
Capital Investment Food	0.06	0.08	0.14
FOOD TOTAL	1.19	1.07	2.57
Consumables			
Tobacco	0.03	0.04	0.07
Clothing	0.09	0.19	0.29
Footwear	0.02	0.03	0.06
Furniture; furnishings; carpets etc.	0.05	0.14	0.17
Household textiles	0.01	0.02	0.03
Household appliances	0.02	0.05	0.06
Glassware; tableware & household utensils	0.01	0.04	0.05
Tools and equipment for house & garden	0.01	0.03	0.04
Medical products; appliances & equipment	0.01	0.04	0.06
Telephone & telefax equipment	0.00	0.00	0.00
Audio-visual; photo & info. processing equipment	0.04	0.12	0.16
Other major durables for recreation & culture	0.01	0.02	0.03
Other recreational equipment etc.	0.19	0.16	0.35
Newspapers; books & stationery	0.02	0.05	0.06

Personal care	0.03	0.09	0.12
Personal effects nec	0.02	0.05	0.07
Capital Investment Consumables	0.00	0.01	0.02
CONSUMABLES TOTAL	0.54	1.07	1.64
Private Services			
Water supply and miscellaneous dwelling services	0.01	0.05	0.14
Out-patient services	0.00	0.01	0.01
Hospital services	0.00	0.00	0.01
Postal services	0.00	0.00	0.01
Telephone & telefax services	0.02	0.06	0.07
Recreational & cultural services	0.03	0.09	0.13
Package holidays	0.00	0.00	0.00
Education	0.01	0.02	0.03
Accommodation services	0.03	0.05	0.08
Social protection	0.01	0.03	0.04
Insurance	0.03	0.11	0.13
Financial services nec	0.02	0.05	0.07
Other services nec	0.01	0.02	0.03
Capital Investment Private Services	0.06	0.22	0.28
PRIVATE SERVICES	0.24	0.72	1.03
Public Services			
Public administration (central)	0.14	0.46	0.57
Education (central)	0.00	0.00	0.00
Health & vet services (central)	0.13	0.41	0.55
Social work activities (central)	0.00	0.01	0.01
Recreational services (central)	0.01	0.01	0.02
Public administration (local)	0.06	0.20	0.24
Education (local)	0.06	0.15	0.19
Health & vet services (local)	0.00	0.00	0.00

Social work activities (local)	0.05	0.11	0.15
Sanitary services (local)	0.01	0.04	0.18
Recreational services (local)	0.01	0.02	0.02
Capital Investment Public Services	0.06	0.20	0.25
PUBLIC SERVICES	0.51	1.61	2.20
CAPITAL INVESTMENT	0.09	0.31	0.39
OTHER	-0.01	0.07	0.06

APPENDIX 5
SNAPSHOT OF PLANNING FOR SUSTAINABLE BUILDINGS

The Welsh Assembly Government is committed to improving the sustainability of new buildings in Wales in order to reduce their impact on the environment and to tackle climate change. The Assembly Government published a new national planning policy that expects most new developments to meet a sustainable building standard as part of the planning application process.

These standards are as follows:

New Homes - From 1st September 2009 applications for 5 or more dwellings were expected to meet Level 3 of the Code for Sustainable Homes. They are also expected to reduce their Carbon Emissions by 31% above Building Regulations 2006. The Assessment is undertaken via the code for Sustainable Homes. The Code measures the sustainability performance of a home against nine design categories, rating it from one to six stars. The results of the Code assessment are recorded in a certificate assigned to the dwelling. Assessment procedures depend on a network of specifically trained and accredited independent assessors. The 9 Categories are: Energy/C02, Water, Materials, Surface water run-off, Waste, Pollution, Health & Well-being, Management and Ecology. From September 1 2010, Applications for 1 or more dwellings will be expected to meet Level 3 of the Code.

New other buildings (offices, industrial, retail etc) - From 1st September 2009, major* non-residential applications will be expected to meet 'Very Good' under the Building Research Establishment Environmental Assessment Method scheme (BREEAM) (or equivalent). They are also expected to meet a higher 'Excellent' standard for reducing carbon emissions (a Carbon Index of 40). The BREEAM method covers a range of common building types such as offices and retail units, and for building outside these types they can be assessed against tailored criteria using the bespoke BREEAM version. The BREEAM scheme covers nine categories in total and scores them against 5 different ratings of Pass, Good, Very Good, Excellent and Outstanding. The 9 Categories are: Management, Health & Wellbeing, Energy, Transport, Water, Materials, Waste, Land Use & Ecology and Pollution. *Major non residential development is defined as buildings with a floor space of 1,000 sq m or more or construction on a site of 1ha or more.

Reducing Carbon Emissions - The policy expects a significant reduction in the amount of carbon emissions a new building generates. The energy hierarchy should be applied to reduce energy demand (orientation etc) and improve energy efficiency (insulation etc) first before incorporating low and zero carbon energy sources such as solar panels and combined heat and power.