What is Worcestershire like now and how is it likely to change?

Spatial portrait

March 2011

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The Council is preparing a *Waste Core Strategy*: a plan for how to manage all the waste produced in Worcestershire up to 2027. To help provide a robust evidence base for the Waste Core Strategy the Council has prepared a series of background documents. These outline current thinking and have informed the approach taken in the development of the Waste Core Strategy.

We welcome any comments you would like to make on any of the background documents during the *Publication Document (Regulation 27) Consultation.* The consultation will run from **22nd March – 4th May 2011**.

To make comments, request paper copies of the documents or for further information please contact:

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Introduction

This document sets out a detail Spatial Portrait of Worcestershire and has been used to inform the development of the Waste Core Strategy.

Spatial Portrait

1.1 **Location[1]:** The County of Worcestershire covers an area of 173,529 ha and is part of the West Midlands Region. It is adjacent to the major West Midlands Conurbation and Staffordshire to the north, the Marches Counties of Herefordshire and Shropshire to the west, Gloucestershire and the South West Region to the south and Warwickshire to the east. It includes six District, City and Borough Councils, Bromsgrove, Malvern Hills, Redditch, Worcester City, Wychavon and Wyre Forest. Although the County Council is responsible for determining planning applications for Waste related development, the District and Borough Councils must address the waste implications for all other development.

1.2 Waste planning in Worcestershire is conditioned by what already exists. The County's natural and historic environment, its existing social and economic investment and its people's attachment to their local communities and the landscape must be respected and valued. The Core Strategy must evolve from what exists today towards how we want waste to be managed in the County in and beyond 2026.

2.1 **Geology[2]:** The geology of the County is very varied. The Malvern Hills are formed of Pre Cambrian granite (600 million years old) and later metamorphic rocks. The Suckley and Abberley Hills to their north, of alternating outcrops of limestones and shales of Silurian age (440 million years old, forming prominent well wooded escarpments. East of the Malverns, Keuper Marl of Triassic age (200 million years old, forms a gently undulating landscape. South east of the Keuper Marl, Lower Lias Clay of Jurassic age forms a flat plain, broken only by a Jurassic inlier at Bredon Hill. North of the Keuper Marl, sandstones of Triassic and Permian age, form prominent escarpments to the north east of Bromsgrove and west of Kidderminster. Glaciation during the Ice Ages covered extensive areas with drift deposits and produced a series of river terraces in the main river valleys. The European Geoparks Association has designated the west of the County as part of the Abberley and Malvern Hills Geopark, one of only three geoparks in the UK.

2.2 **Physiography[3]:** Worcestershire is one of the most diverse Counties in Britain. The combination of geology, topography, soils, tree cover, settlement patterns and land use have produced 22 significantly different rural landscape types in the County. These create both the distinctiveness of the County and the sense of specific 'places' within it. The Council has analysed these landscape types into land description units and land cover panels to identify the building blocks of the landscape. This work will be fundamental to the principle of landscape gain and will be used to connect, restore and enhance the characteristics of the landscape over the foreseeable future.[4] The Malvern

[1] A new look at the landscape of Worcestershire, Worcestershire County Council, 2004 http://www.worcestershire.gov.uk/home/tourism/cs-env-planning-landscape.pdf
[2] See 1
[3] See 1
[4] "Landscapes of Worcestershire" WCC: www.worcestershire.whub.org.uk/home/wccindex/wcc-planning/wcc-planning-env-policy/wcc-lca-home.htm?hilightTerm=Landscapes%20of%20Worcestershire

Hills AONB is almost wholly and the Cotswolds AONB is partly within the County. Not only does the County have a varied geology and topography but also it encompasses the southern limit of many northern plant and animal species and the northern limit of species found in the south and so is exceptionally rich biologically. There are 111 SSSIs in the County, of which Worcestershire's unimproved neutral grasslands are of national importance with over one quarter of the UK resource. There are also two SACs (European designated Special Areas of Conservation) in the County. Together all of these sites represent an irreplaceable combination of habitats and species important for nature conservation which the Council is legally and morally obliged to maintain and enhance. The West Midlands Biodiversity Partnership is developing the "Landscapes for Living"[5] project as part of which Bio diverse rich and Vulnerable areas and Opportunities to improve biodiversity will be identified within Worcestershire. These will inform the development of the County over the next 50 years.

2.3 **Cultural factors**[6] have also had a significant influence in making the County distinctive. The County spans the boundary between what Oliver Rackham and other landscape experts describe as the ancient landscapes of the north and west of Britain and the planned landscapes associated with much of Central England. There are over 15,000 archaeological sites, 235 Scheduled Ancient Monuments and 6,800 Listed Buildings in the County.

Both the number and range of protected sites are likely to increase and priorities within them are likely to change (e.g. through English Heritage's Heritage at Risk Programme). The character of the landscape depends not only on these kinds of designated sites, but also on their setting and the contribution non-designated assets make, all which need protecting. It is more than these. It is the setting for everything else and reveals the long interaction between man and nature. More information about the landscape will become available over time, e.g. through the County Historic Landscape Characterisation programme. This should enable the prediction of hitherto unrecorded components of the historic landscape, including above ground and buried archaeological remains. Worcestershire is however more than the historic evolution and surviving historic character of its place.

Map 1 (Appendix 1) shows Sites Protected for their Conservation Importance in Worcestershire. The location, design and management of all future development should enhance the character and quality of the County and must take account of all these considerations, no matter how difficult. Ultimately, however, Worcestershire embraces intangibles such as cultural and psychological perceptions and historical associations. It encompasses all the senses of belonging, alienation, strangeness and familiarity. The specific issues discussed below must therefore be read in this broader context.

4. **Land Drainage and Pollution Issues**[7]**:** Topographically, the contrast of hard rocks to the north and west and softer rocks in the central and southern areas gives Worcestershire the appearance of a shallow basin surrounded by a ridge of higher ground, forming the catchment of the River Severn and its tributaries the Teme, Avon and Stour. The River Severn forms a significant barrier to east-west movement across the County and both the Teme and Avon have limited crossing points. Land drainage and flooding issues are important influences on development in several of the County's towns. Worcester, Bewdley and Upton upon Severn are all located at bridging points across the Severn. Evesham and Pershore bridge the Avon and Tenbury Wells bridges the Teme. Many villages also adjoin these rivers and their tributaries.

[5] "Landscapes for Living" West Midlands Biodiversity Partnership www.wmbp.org/landscapes_for_living
[6] See 1
[7] See 1

5. **Flood Risk[8] :** Approximately 10% (167 hm^2) of the land area of Worcestershire is at risk of flooding. This area includes at least 9,146 properties, 4% of the total in the County. All of these represent a pollution risk – apart from being vulnerable themselves. Flooding at landfill sites and the surrounding access roads could also cause problems for the disposal of waste. PPS 25 states that landfills and sites for the management of hazardous waste are a 'more vulnerable use' and should only be permitted in Flood Zone 3a where an exception test has been undertaken and passed. This has important implications for where such facilities can be located.

5.1 Strategic Flood Risk Assessments are being undertaken across the County and will be taken into account as the Waste Core Strategy is produced. It is clear however, that the development of every town in Worcestershire will continue to be significantly influenced by the continued possibility of significant local flooding. The fact that many waste materials are potentially very polluting makes it essential that the Waste Core Strategy takes full account of these issues. Of 47 severe weather impacts recorded in the County in the years 1997-2007, 40 were floods. Six days of severe flooding in 2007 affected 156 wards, every town in the County and caused at least £150m worth of damage in lost tourism income and at least £6 million in highway repairs. Climate change is likely to make such events more frequent. The areas most at risk of flooding are shown in Map 2b (Appendix 1). Large areas of the County should therefore be regarded as unsuitable for waste development because of water related issues unless it can be demonstrated otherwise.

5.2.1 **Other water related issues:** It is equally possible that water shortages could frustrate development, including waste management, over the life of the Strategy. Customer security of water supplied by Severn Trent Water is ranked 20th out of 23 (where 23rd is the poorest performance) in England and Wales[9].

5.2.2 **Water treatment:** Many sewage works are in or close to flood plains. Seven such works in the County are classified as being at risk of capacity. In itself his could cause further pollution, attract vermin and spread disease On the positive side, future changes such as waste treatment systems based on reedbed/WET/bio-technology methods may make it possible to create new wetland features. These can be of considerable ecological, landscape and land drainage value.

5.2.3 **Groundwater protection:** Large parts of the County overlie aquifers. There are nitrate vulnerable zones in Worcestershire and almost all of the County east of the Severn and areas to the west of it are designated groundwater or source protection zones. The risk to these and to surface waters everywhere in the County from pollution is obvious. 89.3% of water bodies in the county are at risk from diffuse Phosphate and 84% from diffuse Nitrate pollution[10]

6.1 **Soil types[11]:** The soil structure of the County reflects its varied geology and drainage systems. The central and western parts of the County are free draining, with better status sandy soils in the river valleys (albeit subject to seasonal flooding) and very

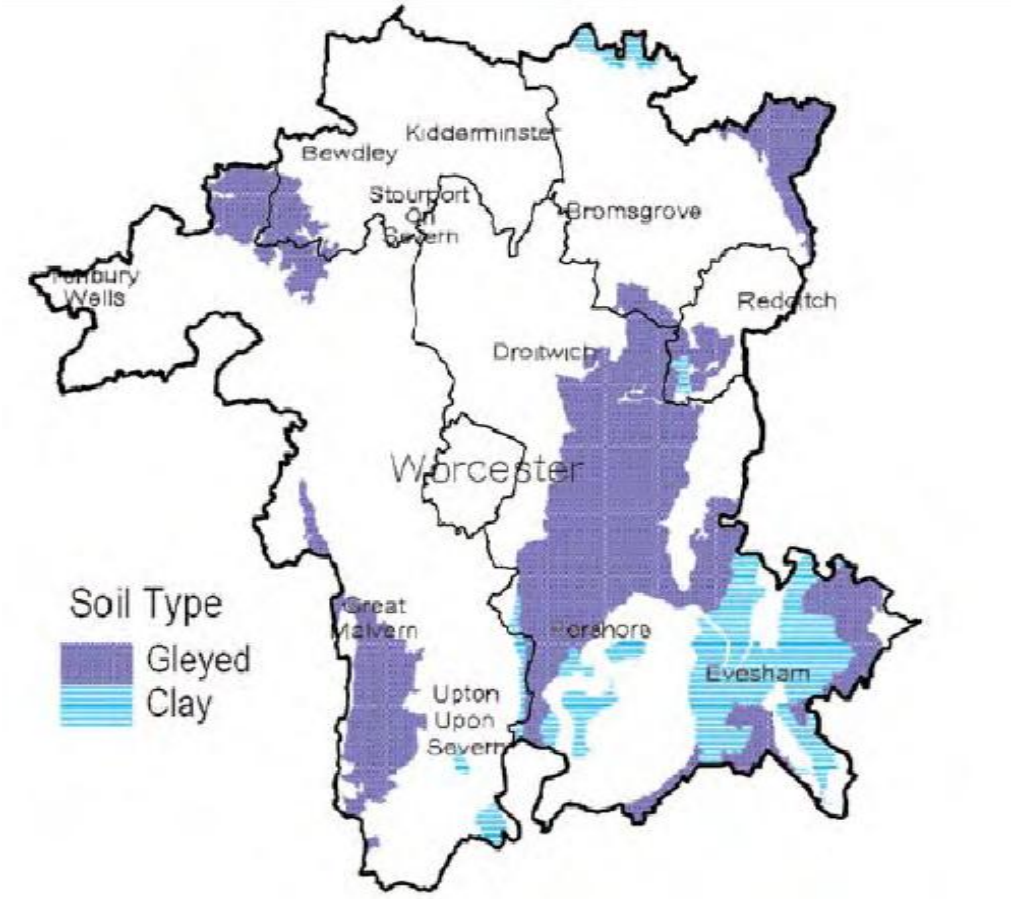
[8] Worcestershire Climate Change Impact Study September 2004 http://worcestershire.whub.org.uk/home/wcc-sustainability-climate-impactstudyfullreport.pdf
[9] Ofwat "Security of Supply 2006-07 report http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/SecuritySupply_06-07.pdf/$FILE/SecuritySupply_06-07.pdf
[10] Land drainage and subsequent water pollution details from "Water for Life and Livelihoods, River Basin planning summary of significant water management issues, River Severn Basin District" (Environment Agency 2007) and "Planning for Water in Worcestershire" (Worcestershire County Council 2008) http://worcestershire.whub.org.uk/home/planning_for_water_in_worcestershire.pdf .
[11] See 1

fertile soils in the Vale of Evesham. Soils in the north of the County are the most acid and impoverished, large areas of gleyed soils occur associated with glacial drift, shales and lias clays and there are poorly drained wetland soils away from river valleys, e.g. at Longdon and Feckenham.

6.3 **Risks to soils[12]:** Parts of North Worcestershire have significant areas of potentially erodible soils. The County's climate is already warmer and drier than the average for the West Midlands and significantly more so than that of the UK. The Worcestershire Climate Change Strategy specifically identifies gleyed and clay soils as particularly at risk from subsidence as a result of climate change, this is shown on Plan A below. Decreases in soil moisture of between 12% and 23% per year overall, with significant declines of summer rainfall of 12% by 2020 and 50% by 2080 are possible. In combination with possible increases of winter rainfall and the number of extreme weather events, these changes may have widespread effects on other soil types. The Vale of Evesham is already the driest part of the Region and Great Malvern has already experienced some of the highest temperatures ever recorded in the West Midlands. Soil droughtiness and erosion may well become both more serious and more widespread in Worcestershire in the foreseeable future. Under Cross Compliance, farmers must keep their land in Good Agricultural and Environmental Condition (GAEC) and are inspected to ensure that the standard is met. To meet the standards, farmers have to complete an annual Soil Protection Review. Soil Management Plans may also soon become commonplace. Provided they are of an appropriate kind, waste materials have great potential as soil improvers and could be significant in ameliorating some of the effects of climate change. This could be promoted over the life of the Strategy. How such materials are used needs careful consideration, however, to ensure that both the composition and volumes applied are safe.

[12] See 6

Plan A: Map of increased risk of Subsidence in Worcestershire



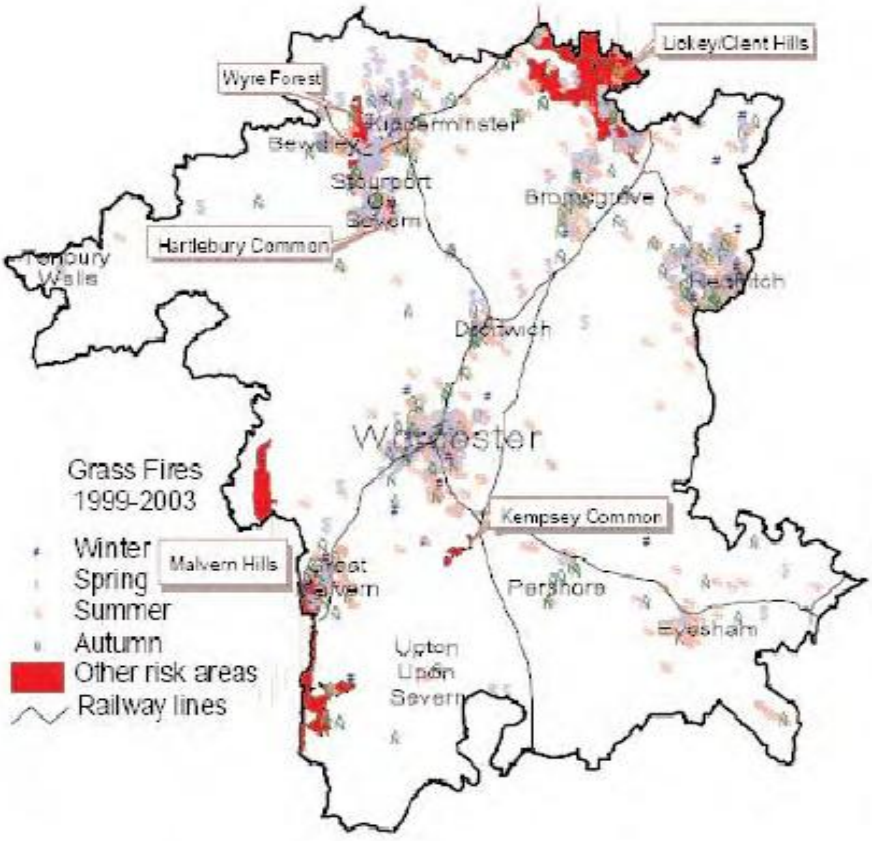
Source: Worcestershire Climate Change Impact Study September 2004
http://worcestershire.whub.org.uk/home/wcc-sustainability-climate-impactstudyfullreport.pdf

6.3 **Waste Soil:** Some soils, notably subsoils, are created in large volumes as a by-product of development and building generally, are not well used at present and could damage the character of the County in the future. Some of this material has been clearly disposed of where it was produced, often in the form of crude unnatural looking mounds. This has been a common practice adjoining highway works The creation of similar features around new development sites, often purporting to be “noise protection” screens, is also frequent. These often appear to be little more than unauthorised waste tipping and are rarely attractive or justifiable. Some of this material has also been used to fill in folds in the land, holes, old quarries and the like on farmland. Such activity may well have damaged features of nature conservation or geological value. The re-use of waste soils is likely to be increasingly important in the future if such harm to the landscape is to be prevented.

6.4 **Special Soils:** Some soils have qualities that make them valuable for their landscape, archaeological and nature conservation interest as much as or more than for their use as agricultural land. The most extensive of these in Worcestershire are heathland, unimproved grassland and unimproved Commons[13]. These need protection for cultural, landscape and/or biodiversity reasons. All are likely to be adversely affected by increased summer temperatures and reduced summer rain.

7. **Fire risk[14]:** There have been over 500 outdoor fires in Worcestershire every year since 2000 and there were over 800 in both 2003 and 2006. A 1°C rise in temperature is expected to increase this number by between 17% and 28% per year. Fire risk may be an increasingly important issue in the future. The Worcestershire Climate Change Strategy specifically identifies heathland as particularly at risk of fire as a result of Climate Change, this is shown below on Plan B.

Plan B: Map of areas at risk from outdoor fires in Worcestershire



Source: Worcestershire Climate Change Impact Study September 2004
http://worcestershire.whub.org.uk/home/wcc-sustainability-climate-impactstudyfullreport.pdf

8. **Land Use**

[13] See 1
[14] See 6

The area has a reputation of being a desirable place in which to live, work and visit. As a consequence of its environment location and transport links it is an area of development pressure and is subject to significant levels of in-migration. The challenge for its local authorities is to develop an approach which ensures an efficient use of land, balancing social and environmental pressures and economic growth which creates high quality environments and sustainable development.

8.1 **Transportation and related issues[15]:** River barriers still significantly influence travel within Worcestershire. As a corollary, strategic routes, notably the M5 and the Birmingham to Bristol Railway, are markedly north-south. Motorway links to the M42 and M50 do however mean that long distance movements into and across the County, including those carrying waste, are easily possible.

Journey to work (JTW) movements from Worcestershire generally demonstrate a north/south divide in the county[16]. JTW movements originating from settlements in the north of the county generally travel towards Birmingham and the Black Country for access to jobs and services, with some movement to/from Worcester and between Kidderminster, Bromsgrove and Redditch. In South Worcestershire, JTW movements are largely self-contained between settlements, in particular towards Worcester, with some movement north towards Birmingham and east towards Stratford-upon-Avon and further out to London. Travel demands are also placed along the Central Technology Belt, between the employment nodes of Malvern, Worcester, Droitwich, Bromsgrove and Birmingham.

8.1.2 As identified in the LTP2, the key movement corridors are outlined below:

- **Bromsgrove – Birmingham**
  - 15,000 two-way journeys in total by all modes (2001 Census data)
  - Nearly a third of these journeys from Birmingham into Bromsgrove
  - Places pressure on M42 Junction 1 and A38
  - Largest number of rail commuters on this corridor (870 per day in 2001 with significant growth since).

- **Malvern – Worcester**
  - Over 9,000 journeys in each direction (2001 Census data)
  - Bus routes provide direct links to employment sites in eastern Worcester
  - Parallel rail route, but constrained by poor rail service reliability and lack of car parking at the Malvern stations

- **Wychavon – Worcester**
  - Includes Droitwich, Evesham, Pershore and a large number of villages
  - Demand is dispersed over wide number of routes
  - Difficult to provide attractive alternative to the car by improving single public transport route.

- **Redditch – Birmingham/Warwickshire**
  - Pressure on M42 Junctions 2 and 3
  - Forms southern terminus of the Cross-City railway line
  - Travel demand on this corridor will potentially grow with the redevelopment of the Longbridge Works and the development of the Central Technology Belt sites in Birmingham.

[15] Worcestershire's Local Transport Plan 2006-2011 http://worcestershire.whub.org.uk/ltp-2006/wcc-transport-ltp-final-2006-2011.pdf
[16] Worcestershire's Local Transport Plan 2006/11

- **Bromsgrove – Redditch**
  - Approximately 5,500 two-way journeys per day[17]
  - Close proximity, good road links and short travel time, high levels of employment opportunities in each town.

- **Wyre Forest – Black Country, Birmingham and Wychavon**
  - Reflects proximity of the District to the conurbation
  - Pressure on A456 through Hagley and parallel route to Birmingham
  - Strong travel to work corridor to Wychavon due to employment sites that serve Kidderminster and Stourport.

- **Bromsgrove – M42 corridor**
  - Easy access to the motorway and hence employment sites around south and east of Birmingham
  - Pressure on M42 junction 1.

8.1.3 Within the County, the City of Worcester is the key journey-to-work destination, with three quarters of all journey-to-work trips into the city having origins in the surrounding districts[18]. The majority of these trips originate from Malvern Hills and Wychavon (75%). The City itself generates approximately 14,900 single employment journeys daily travelling outwards, with 6,100 (40%) of these to non-Worcestershire locations, namely Birmingham, Herefordshire and the Black Country. The principle gateways to/from Worcester are M5 6, currently accommodating approximately 24% of Worcester's inbound and outbound journeys, and M5 Junction 7.

The vast majority of industrial production is transported by road, mostly in HGVs. These are significantly polluting. Parts of Bromsgrove and Wyre Forest have been designated Air Quality Management Areas because of transport related NO2 emissions. The M5 corridor through the County also has poor air quality generally. The need to improve air quality, mostly by reducing traffic congestion is nationally recognised. Although traffic emissions are important and polluting, emissions to air and water from all forms of industry, including from those handling waste, will need to be increasingly controlled.

The Community Strategy highlights that road repair is second on the list of priorities for the county. 'Road and pavement repairs dominate as a priority in Wychavon, and tend to be the priority for many rural areas in Worcestershire'.[19] This will be significant both in the sense that highways surrounding waste management facilities need to be of a good condition and accessible for HGVs and because the recycling and re-use of road material itself needs to be made as easy as possible.

8.1.4 So far as alternative means of transport are concerned, the River Avon is navigable throughout the County and the Severn as far north as Bewdley. The canal network is extensive and connects to systems to the north, south and east of the county. The potential for the use of water to transport materials, including waste, is considerable, if undeveloped at present. The County is well served by railways but there is very little spare capacity and the development of new stations or railheads will not be easy.

8.2 **Agriculture** dominates the use of land in the County, its appearance and the quality of much of the environment. Map 2a (Appendix 1) shows Grade 1 and 2 Agricultural Land. The greatest part of the County is in productive agricultural use, most distinctively horticulture, particularly orchards and market gardening. Cash crops are

[17] Worcestershire's Local Transport Plan 2006/11
[18] Journey-to-Work Assessment; City of Worcester Passenger Transport Area Review (DRAFT) November 2008
[19] Worcestershire Partnership, Sustainable Community Strategy, "Story of Place", 2008 http://www.worcestershirepartnership.org.uk/home/cabinet_17_july.doc

also important in the Vale of Evesham, terraces of the Severn and sandstones of the north. Mixed farming is typical of most of the rest of the County. The river valleys are notable for their pastures with rough grazing limited to unenclosed common lands, notably around the Malverns. Forestry remains the principal land use of the Wyre Forest. Only 1% of the West Midlands is Grade 1 Agricultural Land Quality. Virtually all of this is in Worcestershire and Herefordshire. About 83% of Worcestershire is grade 1, 2 or 3 Agricultural Land Quality[20] and all of this needs to be given high protection.

8.2.1 **Agricultural Waste and Pollution Issues:** Agricultural slurry and manures however have the potential to be highly polluting which can be locally significant, especially where livestock are raised intensively. Liquid fertilisers, in particular, can affect ground and surface waters. The development of River Basin Management Plans will set out the requirements for water quality and measures for the sustainable treatment of agricultural run off.

8.2.2 Only 55% of the rivers in Worcestershire were of very good or 'good' (for both biological and chemical) condition in 2004 according to the Environment Agency. New standards are will be imposed on river water quality through the Water Framework Directive from 2015[21]. Most rivers in the County are at moderate or high risk of failing to meet the new diffuse phosphate standards. Although many industries share responsibility for this, agriculture was the greatest single source of diffuse water pollution (i.e. where the source is not from a single discharge point). 68.8% of rivers in the County are at risk from diffuse pesticide and sheep dip pollution and 41.2% from diffuse source urban discharges. The main cause of agricultural pollution incidents was containment and control failure, accounting for 58% of incidents in 2004. Slurry was the most common pollutant, reported in 30% of incidents. The Waste Core Strategy will encourage biological methods of treating liquid wastes (e.g. through variations on reedbed systems) where this would be effective. Some of these have been pioneered locally and can be both cheaper and more environmentally friendly than engineered or 'tankered away' methods and have much to recommend them.

8.3.1 **Changes at Farm level[22]:** The forthcoming review of the Common Agricultural Policy (CAP) will significantly affect land use after 2013 and possibly impact beforehand. Export subsidies will no longer be available after 2013. Agricultural changes which result may well have implications for the landscape character and biodiversity of the County and the nature of the wastes produced. One highly visible change, for example, is likely to be a significant increase in the number of agricultural storage reservoirs created in the County. Apart from all the other issues involved, these will generate significant volumes of excavated subsoil, some of which will need to be disposed of carefully to avoid creating large and unnatural features in the landscape. Other changes in agriculture may have indirect but potentially significant effects. Changes in regulatory procedures, for example, have made the disposal of fallen stock difficult. There is only one specialist disposal facility in the region, in Shropshire. Recent animal disease outbreaks have only been contained through emergency methods which have been both ad hoc and expensive. It is not easy to predict what alternatives may be desirable or the scale and location of these. The use of anaerobic digestion to deal with farm and other wastes and growing biomass for energy, as agricultural diversification, could, by contrast, generate welcome new markets for the use of organic wastes. At present, some of these arise in volumes which are too small or too widespread to be useable as fuels. The creation of numbers of small energy generators might enable these to be collected for use as supplements to other fuel stocks. These changes could also lead to

[20] Agricultural Land Classification (ALC) Statistics, DEFRA, www.defra.gov.uk

[21] Environment Agency http://www,environment-agency.gov.uk

[22] DEFRA www.defra.gov.uk

the redevelopment of farm buildings for new uses, some of which could be waste related.

8.3.2 **Changes in the Agricultural Economy:** The most important changes may, however, be the deep but probably irreversible changes in the economy that have made agriculture increasingly less significant to the national economy. As early as 2001, agriculture in England only contributed some £6.5bn to the economy as opposed to £14bn from rural tourism and recreation alone. A survey by the Environment Agency at the time of the 2003 Foot and Mouth epidemic put the economic benefits of agriculture barely £500m per year above its costs to society[23]. None of these diminish the overwhelming spatial significance of agriculture to the appearance of England or of Worcestershire, to its importance as a source of employment in most of the County, or to the power of the imagery it has over our culture. The economic reality is, however, that despite its dominant position in land use, agriculture generates uncertain incomes and employs fewer and fewer people. Many rural landowners are likely to be enthusiastically seeking alternative uses of their land over the life of the RSS. This could be particularly important in the Rural Regeneration Zone on the west of the County. The Waste Core Strategy could include policies to address these changes, at least as far as waste management is concerned.

9. **Forestry:** Map 2a (Appendix 1) shows areas of Ancient Semi-Natural Woodland and Plantations on Ancient Woodland Sites in Worcestershire. As part of the implementation of the Regional Forestry Framework[24], the County Woodland Opportunities Mapping Project should encourage an increase in both woodland planting and management. Both will generate waste wood over the life of the Strategy and opportunities to use it for a variety of potentially sustainable uses, notably the generation of heat and power. These could create employment opportunities, some of which could be waste related, in rural areas.

10. **Biodiversity change:** Over the same long term and at the same strategic regional scale, the "Landscapes for Living" project will set out a 50-year vision for biodiversity for the West Midlands, focusing on the development of a landscape scale approach to restoring and enhancing biodiversity[25]. In the short term, this should produce an agreed regional biodiversity opportunities map, to inform Phase 3 of the revision of the Regional Spatial Strategy:

— identify the linkages and overlap with the key policy initiatives of other sectors likely to impact on landscape scale biodiversity; and

— provide a framework and toolkit for sub-regional/local opportunity mapping and large scale delivery projects.

11. **Population change[26]**

11.1 The population of the County is 555,400 (ONS mid-year estimate 2007), 71% of whom live in urban areas, principally Worcester, Redditch, Kidderminster, Stourport-on-Severn, Bromsgrove, Malvern, Droitwich and Evesham. The population is projected to grow at a rate of 0.57% per annum until 2011 to reach 568,000 (ONS 2006-based projections). The highest rate of growth is expected to be in the 65+ age band. About 4.3% of the population are from minority ethnic groups (ONS 2006-based estimates), the

[23] See 16
[24] West Midlands Forestry Framework http://www.growingourfuture.org/
[25] West Midlands Biodiversity Partnership – Landscapes for Living http://www.wmbp.org/strategy/challenge_2/landscapes_for_living
[26] National Statistics Population estimates for UK, England and Wales, Scotland and Northern Ireland – current dataset http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106

largest single minorities being from Pakistan and India, the oldest established being groups of Travellers. The Council's BPEO Strategy and the Joint Waste Management Strategy are based on these figures. Changes in the population could have significant implications for municipal waste management and this will need to be monitored over the plan period. The RSS Phase 2 revision will include projections of the number of houses that need to be built in the County after 2011.

The RSS will identify the broad locations where new housing and industrial land will be developed. What wastes these will generate and how they should be managed will be pressing issues for the future that the Waste Core Strategy will have to take account of.

The Draft Phase 2 Revision of the RSS sets a strategy to broadly reverse the trend of out migration from the urban core of the West Midlands to the neighbouring Shire Counties. For Worcestershire, future growth is to be concentrated in and around two Settlements of Significant Development; Worcester and Redditch, with Worcester forming a New Growth Point and focus for larger term growth. Outside of Worcester, further development will be focused on larger settlements and market towns which will act as strategic locations for housing and employment growth. Rural development will largely be limited to that necessary to enable villages to remain visible. The extreme west and north west of the County have been designated part of the Rural Regeneration Zone.

12. Employment

12.1 Worcestershire has relatively full employment. In 2006/7, 83.5% of the working population was economically active, 6.2 percentage points above the West Midlands average and 5.0 percentage points above that for Great Britain.[27]

12.2 The economically active rate for 16-24 year olds in 2006/7 was 69.1T, 6.8 percentage points higher in Worcestershire than in the West Midlands and 2.3 points higher than Great Britain. The economically active rate for those aged 50 and over in Worcestershire remains higher than in the West Midlands and Great Britain[28]. This is an ongoing trend and could be attributed to the significant number of older workers in the County.

12.3 **Self-Employment:** In May 2004, it was estimated that 38,800 people were self-employed in Worcestershire, equating to 14.1% of the total working population. This rate is 1.0 percentage point above the national average[29].

12.4 **Employment and Agriculture:** Employment in the County is predominantly urban. The June 2006 Agricultural Survey for England (DEFRA) shows that local labour in the Agricultural Sector numbered 7512 in Worcestershire. This represents a fall of 6.3% from 2004[30]. A growth of about 5,000 jobs in rural areas in the County (in all parts of the economy, not just agriculture) is predicted by 2011 and is supported in the Regional Spatial Strategy Rural Renaissance policies. Waste related development could be a useful if modest source of economic diversification in the countryside and the Waste Core Strategy will encourage this where appropriate. The County Market Towns Initiative could also help foster appropriate kinds of waste related development where this might assist the rural hinterland. Employment growth will however be concentrated in existing employment centres for the immediate future until the revised RSS starts to be implemented and the Waste Core Strategy will need to reflect this.

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[27] Office for National Statistics/NOMIS, 2007. Annual Population Survey http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=10855 .
[28] See 22
[29] See 22
[30] DEFRA, 2006 June Agricultural Survey, www.defra.gov.uk

12.5 **Unemployment:** Unemployment rates locally, regionally and nationally have all recently steadily increased over the last couple of years. In Worcestershire, 3.1% of the working age population was unemployed in 2006/7, compared to 2.9% in 2004/5. However, this is still markedly below the figures for the West Midlands (5.6%, up from 5.2%) and Great Britain (5.4%, up from 4.8%)[31].

13. Employment by Sector

13.1 The most important employment sectors in Worcestershire in terms of share of the workforce are Retail, Distribution and Hotels etc, Public Administration, Health and Education Services. These employ almost half of the workforce, a greater proportion of employees than is the case regionally or nationally. Textiles and Clothing, Chemicals and other Manufacturing are also locally important. The manufacturing sector appears to be declining, consistent with regional trends. Some industries produce more waste than others and the volumes of waste produced do not simply reflect the numbers involved.

13.2 Changes in the nature of the local economy could have implications for the nature and volumes of waste produced and the forms of management necessary.

13.3 The figures in Table 1 are based on 10% surveys of businesses in the West Midlands in 1998-99 and 2002-03 and are not therefore definitive. They are revealing, however, in that they appear to show significant changes in the distribution of the types of waste produced in the County over even a 5 year period. This apparent volatility is important in both demonstrating some of the limitations of the information available and the difficulty of predicting what wastes are likely to need managing over the life of the Strategy.

[31] Working age is 16-59 for females 16/64 for males www.nomisweb.co.uk.

Table 1: Number and percentage of people employed in different industrial sectors in Worcestershire and the West Midlands and approximate percentage of Worcestershire's waste generated in 1998 and 2003

Broad Sector Groups	Industry Groups (SIC)	Employed in Worcestershire		Employment in West Midlands	Approx. % of Worcestershire waste produced 1998-99	Approx. % of Worcestershire waste produced 2002-03
		No.	%	%	%	%
Primary Sector and Utilities	Agriculture*	970*	0.5*	0.9	} 99	98.6
	Mining, etc	142	0.1	0.1		
	Utilities	1,133	0.5	0.6	1	1.4
	Total	***2,245***	***1.1***	***1.6***	***100***	**100**
Manufacturing	Food, Drink and Tobacco 1.0	3,086	1.4	1.6	23	6.5
	Textiles and Clothing 2.1, 2.2, 2.3	2,525	1.2	0.6	2	10
	Metals and Mineral Products 4.1, 4.2, 3.4	3,437	1.6	2.2	} 22	9
	Engineering5.1, 5.2, 5.3, 5.4, 5.5, 5.6	16,952	7.9	10.6		
	Other Manufacturing 2.4, 2.5, 5.7	7,984	3.7	2.4	5	10
	Sub-Total	***38,077***	***17.8***	***19.2***	***52***	**49.5**
Construction (Not C&D waste)	Construction	7,193	3.4	4.3	3	N/A
	Sub-total	***7,193***	***3.4***	***4.3***	***3***	
Distribution, Transportation, etc	Retail, Distribution and Hotels, etc 9.0, 10.2, 11.0	56,428	26.4	23.8	15	21
	Transport and Communications	10,147	4.8	5.5	10	N/A
	Sub-Total	***66,575***	***31.2***	***29.3***	***25***	**21**
Business and Other Services	*Banking and Business Services*	21,217	9.9	10.5		} 22
	Professional Services	14,417	6.9	6.2		
	Other Services	10,795	5.1	4.6		
	Sub-total 12.0, 14.1, 14.2	**46,753**	**21.9**	**21.3**	**7**	
Non-marketed Services	*Health and Education Services 13.0*	43,790	20.5	19.7	4	
	Public Admin and Defence 14.3	8,930	4.2	4.6	3	6
	Sub-total	***52,270***	***24.7***	***24.3***	***15***	**28**
Total Employment		***213,563***	***100.0***	***100.0***	***Approx 100***	**Approx 100**

Source: (Employment Figures) Annual Business Inquiry, 2002. % of waste: Environment Agency Waste Management Assessment 1998-99 and 2002-03
NB: The June 2003 Agricultural Census shows 7,558 people employed in agriculture and is a more reliable estimate. This figure is about 3.54% of the total workforce.

14. **Local Economic Forecast:** The Local Economic Forecasting Model from Cambridge Econometrics[32] provides future projections for a number of economic measures at County, regional and national level. The latest projections cover the period up until 2020. It is important to note that the data is based on Cambridge Econometrics' projections, which extrapolate historic trend data to estimate the future position, independent of any external factors that could affect the situation. Many initiatives to foster the agriculture and high technology sectors in the County, for example, would affect modelled data. Given these provisos, however, the forecasts for the County's economy up to 2015 are:

14.2 **Changes in Investment:** Total investment in Worcestershire is projected to increase by 2.4% per annum between 2004 and 2010 (compared to 2.3% in the West Midlands and 3.1% in the UK) and by 2.3% per annum between 2010 and 2015 (compared to 2.2% in the West Midlands and 2.6% in the UK). The figures indicate that only Worcestershire's Financial and Business Services sector will suffer a negative period of investment until 201 (-0.6%), although during the period 201 to 2015, investment is forecast to increase (2.7%). The data also shows relatively large projected increases in investment within the sectors of Transport and Communication (5.0%) and Government Services (4.7%) between 2004-2010. Although to a slightly lesser degree, this trend is repeated across the West Midlands and the UK.

14.3 With the exception of Financial and Business Services, investment growth across all sectors in Worcestershire is expected to be lower in 2010-2015 compared with 2004-2010. Again, this pattern is repeated on a regional and national level.

14.4 **Changes in Regional Economic Policy and its implications for Worcestershire:** The Regional Economic Strategy (RES) and RSS set out the principles, and the Economic Strategy for Worcestershire, the local framework, for how the County's economy should be fostered. They also identify a broad range of how much employment land will need to be found (the indicative requirement is about 288 HA up to 2026). The vision for its delivery emphasises that the local economy should be prosperous, sustainable and driven by high value added businesses, by modernisation and technology-led enterprises. One of the key findings of the RES, theme 3 "Functioning Economic Geography", is that "the spatial patterning of economic activity in the West Midlands is shifting outwards from Birmingham and the Black Country to a belt that encircles the conurbation". This belt incorporates Bromsgrove and Redditch in the north of the county, Worcester, Malvern and the areas on either side of the M5. Within this context however the RSS recognises that Worcestershire is experiencing significant economic change and Kidderminster, Redditch and Worcester have been identified as Local Regeneration Areas (where the aim is to improve their longer-term economic prospects). To this end, the RSS proposes that new development should be particularly focused on Worcester and Redditch, both of which are designated Settlements of Significant Development, i.e. towns capable of balanced and sustainable growth. It also promotes the further development of the Central Technology Belt between Birmingham and Malvern, which should link existing developments in Worcestershire, notably in Malvern and Bromsgrove, with the redevelopment of Longbridge (a possible Regional Investment Site) and the expansion of Worcestershire University. These could all be major investment areas over the life of the Strategy.

Figure 2 Central Technology Belt and Key Locations in Worcestershire

These sites should help realise the Innovations Technology Council's five main themes for future development:

[32] Cambridge Econometrics
http://www.camecon.com/consultancy_capability/reg_local_econ_development.htm

Advanced Materials,
Medical Technology,
Environmental Technology,
Advanced Media Technology,
Transport Technology,

the first three of which are already well established in the County.

14.5 **Spatial Changes to the Economy:** The Community Strategy for the County reflects these themes and also encourages the development of renewable sources of energy in the County. This is likely to be an increasingly important issue over the life of the Waste Core Strategy. The potential exists for both encouraging agricultural diversification and for treating some waste streams in this way. It is possible however that a concomitant of any such developments will be the production of residual waste which will need attention.

14.6 In the medium term, however, most activity will continue to be through the existing economic structure of the County. This is fairly mixed but there are concentrations of some sectors in some areas. Crudely simplified, the towns in the north of the county have traditionally relied on manufacturing and have looked to Birmingham for markets. In Bromsgrove and Kidderminster, the collapse of the car and carpet industries respectively has weakened the local economies. Redditch, by comparison, has retained a more mixed, more robust employment base. Both Kidderminster and Redditch are nonetheless identified in the County Economic Strategy as undergoing economic restructuring and the Waste Core Strategy could contribute to this. The expansion of all of these towns is however restricted by the Green Belt. Stourport and Kidderminster also have infrastructure problems, which are hampering their recovery. By contrast, Worcester, Malvern and to a lesser degree Droitwich have large Distribution and Professional and Educational sectors. Worcester is also the County's largest retail centre and Malvern its largest high technology and defence-based research centre. Food-related industries are important in the southern half of the County. In the Vale of Evesham there is therefore a greater dependence on employment in "vulnerable sectors" such as engineering/manufacturing and food processing than the national average. Workplace incomes are lower here than the County and national average. The South Worcestershire Joint Core Strategy identifies a particular need to protect such vulnerable elements but does not lead to an over reliance on them. Some towns, notably Bewdley, Pershore, Upton and Tenbury, still provide a traditional market town role, serving an extensive rural hinterland. The Economic Strategy for Worcestershire identifies the Rural Regeneration Zone as an area of market failure and disadvantage. Together with Stourport and Evesham, these towns are likely to be a focus for work to assist rural regeneration.

14.7 Map 3 (Appendix 2) shows currently Designated Industrial Sites in the County. The suitability of these for future development and in particular for waste management purposes will depend, in part, on the findings of the Strategic Flood Risk Assessments currently being undertaken. The wide distribution of these sites at present is however obvious.

14.8 The County is not a closed unit however, it is part of regional, national and global society and its economy and the wastes generated, transported and managed within it, reflect this. Most of the implications of these are diffuse but the there are important cross boundary issues with Herefordshire, in particular through the Joint Municipal Waste Management Strategy which links the Municipal Waste Collection and Disposal Services of Herefordshire, Worcestershire County and the six Worcestershire District Councils, reflecting the two counties' Integrated Waste Management Strategy. There are also

significant inter county movements of waste from rural areas into the County towns and from the County to other regions to specialist waste treatment facilities.

So far as future development, if all kinds are concerned, future cross boundary links with other counties are likely to occur:

- in the High Technology Corridor,
- in Bromsgrove, near Longbridge,
- in South western Wychavon, if much of Tewksbury's growth takes place in Worcestershire or vice versa,
- in the Evesham area, if an eco town is designated at Middle Quinton and to a lesser extent,
- between Tenbury Wells and Burford and
- in the western part of the Rural Regeneration zone, if significant regeneration occurs in the west of the County, mid Wales or South Shropshire.

At the same time the County is under pressure to discourage in-migration southwards from Birmingham and the Black country and commuting northwards from Worcestershire residents into these areas.
The Strategy will need to consider the implications of these developments.

14.8 **Changes to the County Economic Strategy:** One of the most significant elements of the County's economy is, however, how mixed it is in terms of activity and how widely geographically distributed it is. There are over 90 areas designated for industry in the County. Although some of these are likely to increase in size and new, large sites may be developed over the life of the RSS in connection with the Worcester Growth Point and the Settlements of Significant Development, the economic base of the County is likely to remain very widely distributed, in terms of both geography and industrial sectors, for the foreseeable future.

14.8.1 Within Worcestershire congestion is a major constraint on growth. In terms of highways, the River Severn creates a barrier to east-west movement across the County, with limited crossings creating congestion at those locations. The M5 operates at, or near capacity, for most of the day as it approaches Birmingham[33] and significant sections of the M5 and M42 were amongst the most unreliable motorways in England in 2005[34]. As highlighted in the LTP2, specific congestion problems have been identified by the Highways Agency (HA) on the M5 motorway at Junctions 4, 5, 6 and 7 and on the M42 at Junctions 1, 2 and 3, where excessive demand for car travel results in severe congestion at peak times. However, the most recent modelling work undertaken by the HA suggests that Junction 7 on the M5 is currently operating within its capacity during peak periods[35].

14.8.2 **Highways:** To improve some of the existing capacity issues at junctions on the M5 and M42 motorways, the Highways Agency has several current and planned improvement projects under way:

- M42/M5/M6 (Birmingham Box) Route Management Strategy (RMS)
  - Status: **current**
  - Includes M5 Junction 5 and M42 Junctions 1, 2 and 3
  - Formulating a strategic plan for the next 15 years

[33] Worcestershire County Council, 'Worcester Transport Strategy: Major Scheme, Technical Report', 2008
[34] West Midlands RSS Preferred Option – Regional Transport Strategy/Draft Implementation Plan (2007)
[35] The South Worcestershire Joint Core Strategy Preferred Options; Response by the Highways Agency (December 2008)

- M5 Junction 4 Improvement Scheme
  - Status: **current**
  - Improvements to ease congestion and queuing
  - Work due to have started early 2009

- M5 Junction 5 Improvement Scheme
  - Status: **current**
  - Various measures to improve capacity through the junction
  - Works started in January 2009-04-20

14.8.2 In terms of the local highway network, Worcestershire's LTP2 identifies the sections of the local road network within Worcestershire where traffic congestion is at its worst. Three levels of congestion are identified:

- Red routes – prone to congestion at any time of day, weekends and weekdays;
- Amber routes – generally congested at peak periods and prone to congestion at off-peak periods on weekday; and
- Yellow routes – generally congested during weekday peak periods.

14.8.3 Some of the most heavily congested highways within the county include Worcester's A4440 Southern Link Road (SLR), which is congested for most of the day and at times operates at levels near 100% over capacity; Evesham High Street (A4184); and the A38 between Bromsgrove and M42 Junction 1, all of which are designated 'Red Routes'. Other congested highways include Evesham Bypass; radial routes into Evesham town centre; sections of the A449 in Malvern Link; sections of the A441 in southern Redditch; and the A38 between Bromsgrove and M5 Junction 5, all of which are designated as 'Amber' and 'Yellow' Routes.

14.8.4 The majority of the large settlements in Worcestershire suffer from congestion. In Worcester, heavy congestion is experienced between the M5 and the regional and local highway network around the city, particularly M5 Junction 6 which is currently operating close to capacity. Traffic congestion in the city centre is exacerbated by limited river crossings and inappropriate use of the car for short distance local trips. These issues are intended to be addressed by the Worcester Transport Strategy (WTS), a package of measures included new and enhanced Park & Ride sites, associated Bus Rapid Transit (BRT) routes, dualling of the Southern Link Road, city centre urban realm enhancements and enhanced pedestrian and cycle routes. The proposed Worcester Parkway located at Norton would make up one of the Park & Ride multimodal interchanges, although the business case for this scheme is separate to the overall WTS package.

14.8.5 In Evesham, the A4184 Abbey Bridge and Viaduct are significantly below strength and are suffering under the weight of heavy traffic, with the serious possibility of the bridge closing within the next five years[36]. The bridge and viaduct are due to be fully replaced and the scheme has been submitted for consideration to the Regional Funding Allocation for the West Midlands. The High Street is also due to undergo enhancements to improve the pedestrian environment and bus interchange facilities, with the scheme intended to commence early in the 2009/10 financial year.

14.8.6 **Rail:** Various sections of rail line intersecting the county are hindered by inadequate signalling and lengths of single track, which, along with limited parking at heavily used key stations, combine to constrain commuting by rail. Such constrained lines include sections of the Worcester – Malvern – Hereford line (part of the Cotswold

[36] A4184 Abbey Bridge and Viaduct – A Bid for Capital Maintenance Funding, Halcrow (2009)

Line), with limited parking at Great Malvern and Malvern Link. There is poor track layout between the heavily used Worcester Foregate Street and Shrub Hill stations, both of which sit on the Worcester – Malvern – Hereford line as well as the Worcester – Oxford – London line (also part of the Cotswold Line); Worcester – Birmingham Snow Hill line; Worcester – Birmingham New Street line; and the Worcester – Cheltenham line. Limited parking at these stations adds a further constraint.

14.8.7 The Worcester – Oxford – London line (Cotswold Line) is currently single track from Norton Junction and through Wychavon, which adversely affects rail service reliability. Evesham and Pershore Stations, located on this line, are constrained by lack of sufficient parking.

14.8.8 Due to the strong journey to work movements towards the Birmingham conurbation, the Cross-City South line from both Redditch and Bromsgrove to Birmingham (the Redditch – Birmingham New Street and Worcester – Birmingham New Street lines, respectively) is overcrowded on both corridors. The section of line between Redditch and Barnt Green is currently single track, providing further restriction on the efficient operation of the line, with demand in Bromsgrove being suppressed "principally by an inadequate station, car parking facilities and relatively infrequent service levels"[37], as identified by Network Rail.

14.8.9 The section of the Worcester – Birmingham Snow Hill line between Stourbridge Junction and Cradley Heath to Birmingham currently experiences congestion, with Kidderminster Station the second most heavily used station in the County after Worcester Foregate Street[38], suffering from a poor location and limited integration with bus operators.

14.8.10 The County also suffers from lack of direct access to the Birmingham – Bristol line, which bypasses Worcester to the east.

14.8.11 Various proposals exist for improvements to rail infrastructure in Worcestershire. For the County as a whole, a package of rail improvement measures is currently being considered up to the year 2028; the Worcestershire Rail Package. The package includes improvements to Worcester Foregate Street and Malvern Link station; with aspirations for track doubling between Droitwich Spa and Stoke Works; and a potential station at Redditch North. The flagship project in the Rail Package is Worcestershire Parkway, proposed to be located on the intersection of the Worcester – London and Birmingham – Bristol railway lines. The Park & Ride interchange will offer direct access to national rail services, as well as providing additional car parking for travel to Birmingham and London and will help relieve congestion on the M5 motorway. The Business Case for this project is currently being updated by Worcestershire County Council.

14.8.12 Other proposals being actively considered to improve rail infrastructure include upgrading the Cotswold Line to double track from Evesham to Charlbury (Oxfordshire), resulting in increased reliability, capacity and services and allowing an hourly service to London from Worcester. The scheme is anticipated to be delivered commercially by September 2010. Furthermore, there is an aspiration for double tracking of the Cotswold Line from Norton Junction to Pershore, as identified in the LTP2 and West Midlands RSS Infrastructure Review Report[39]. Network Rail are also intending to improve the Cross City Line South to Redditch with an extension of the line to Bromsgrove, increasing the service frequency to stations to three trains per hour, resulting in increased passenger and operational capacity.

[37] Network Rail SBP Route Plans, Route 17 West Midlands (April 2008)
[38] Office of Rail Regulation, 2006/07 station usage figures
[39] West Midlands Regional Spatial Strategy – Infrastructure Review Report (November 2007)

14.8.13 As part of these Network Rail proposals to improve Cross City Line South services, there are strong aspirations to relocate and upgrade Bromsgrove Station to a multimodal interchange and to build an additional platform at Redditch. Similarly, an upgrade is also proposed for Kidderminster Station. The Bromsgrove station package already has £11 million of the required £17 million committed from third parties and the Network Rail Discretionary Fund, with the final funding anticipated to come from the Regional Funding Allocation. The Kidderminster Station package scheme is estimated to cost between approximately £5.5-6 million and is about to procure Network Rail's GRIP (Guide to Railway Investment Projects) Stage 4 (Single Option Development), which means its scope is fixed.
14.8.14 As a general rule however the capacity for increased freight movement by rail from and or within Worcestershire is not likely to be significant.

14.8.15 **Bus:** Generally, bus services throughout Worcestershire are limited by infrequent services, with poor service reliability and delays in many settlement centres due to traffic congestion and lack of bus priority measures. In particular, non-concessionary fare bus patronage in Worcester has experienced "a year-on-year decline of approximately 10%...since April 2006"[40]. Many railway stations are currently limited by poor integration with local bus services, with the clear need for improved accessibility and integration with other modes of travel.

14.9 These constraints are likely to mean that little significant change in the distribution of economic activity is likely over the life of the RSS.

14.10 The emphasis in the County Economic Strategy is not to attract large numbers of new jobs but to modernise and diversify the local economy. Key strategic objectives in the Strategy itself and the Joint Investment Plan developed to implement it are to promote technology led growth, develop the County ICT and transport infrastructure and remove barriers to employment. The Council`s first Community Strategy encouraged the development of food and drink clusters, tourism and the technology corridor. These will all have implications for waste production and its management. Food and Drink, for example, already produces the County's largest waste stream. The further development of this cluster could therefore increase both the total volume of such waste and create local concentrations. Growth in tourism would by contrast probably generate modest increases in a large number of dispersal sites. The development of the Technology Corridor could generate the production of very small volumes of difficult wastes (e.g. electronic, clinical, hazardous or radioactive materials), materials which need specialist, expensive treatment facilities unlikely to be located in the County.

14.11 The Professional Services sector is an important employer in Worcestershire and even a growth in this area, which produces very little physically, could be significant. The ongoing University expansion and new Library are likely to have locally important effects on the short term generation of C and D waste and long term increases in the generation of MSW in Worcester itself. Wider structural changes in the economy could have other, unforeseen effects. The number of home workers in the County is steadily increasing, from 34,291 in 2001 to 42, 626 in 2005 (15.1% of the residential workforce). The effects on waste generation of this group are not known at present. It is possible that they may generate increasing amounts of waste paper and we may therefore see a change in the composition of MSW if this proves to be the case. The average household receives 18 items of junk mail per week, equivalent to 4% of all paper waste. Any increase in such material would add to this waste stream. Any reduction, however, e.g. through the promotion of the Mailing Preference Scheme, could usefully lessen it. The Joint Municipal Waste Management Strategy includes a policy for the Local Authorities in

[40] Worcestershire County Council, "Worcester Transport Strategy: Major Scheme, Technical Report", 2008

Worcestershire to work to promote waste minimisation initiatives. Since the Strategy was launched in November 2004, the County Council have focused on reducing the amount of municipal waste created; consequently the growth in waste has been halted and tonnages are now starting to decline.

14.12 On the other hand, reductions in employment in sectors that currently produce high volumes of waste and/or growth in those that produce low volumes could contribute to a reduction in both the rate and total volumes of waste produced. All business sectors are likely to be affected by the drive for waste minimisation and changes in thinking to treat waste as a resource rather than something to be disposed of. The Waste Management sector will cover a very wide range of activities, some of which are likely to remain low value, high volume, bad neighbour businesses. Some, however, could be linked to high value, high technology activities and technical innovation. Some could also employ large numbers of people. The Waste Core Strategy will make provision for the possible implications of these. The County Economic Strategy, for example, has "Increasing the proportion of energy generated from renewable resources" as one of its priorities. The West Midlands Forestry Strategy promotes the same and it is possible therefore that the Waste Core Strategy might be able to assist this by contributing subsidiary fuel streams to any such developments.

15. **Distribution of Population**

15.1 Worcester is the County town and a Cathedral City and, with about one-sixth of the County population, has a sub regional role as its main service and employment sector. The designation of the City as a Growth Point and Settlement of Significant Development in the Regional Spatial Strategy Phase 2 Revision Preferred Option and the expansion of Worcester University (due to be completed by 2011) will enhance this role. The city is tightly constrained however and to fulfil its role as a focus for balanced development, the growth of Worcester City will need to extend beyond its administrative boundaries through the South Worcestershire Joint Core Strategy, into Wychavon and Malvern Hills District. Most of the remainder of the County`s population live in towns in the north of the County in and around Droitwich, Bromsgrove, Kidderminster, Bewdley, Stourport and Redditch[41]. Most future development over the life of the RSS will also be concentrated most notably in Redditch, which is also designated a Settlement of Significant Development in the Phase 2 Revision of the RSS. Other towns, notably Malvern in the west of the County and Evesham to the south, are locally important. The other larger settlements and market towns will act as strategic locations for housing and employment ground. Proposed industrial land allocations reflect these distributions. The thrust of the RSS is to generally monitor the current distribution of population in the County. There is considerable uncertainty at present about the number of new dwellings likely to be required (e.g. whether the Nathaniel Lichfield and Partners Options or the possible Eco Town at Middle Quinton will be acted on). Infrastructure problems, e.g. highway congestion and limited bridging points (see earlier), will limit when some of this development can be made. Flooding and Green Belt issues will also significantly affect where development can take place; every town in the County is affected by the former, Worcester, Droitwich, Kidderminster, Bromsgrove and Redditch are significantly constrained by the latter. Some of Bromsgrove and Redditch's new development could take place in adjoining Districts.

The Regional Spatial and Housing Strategies for the West Midlands drive housing Strategies in the County. The Phase 2 Revision of the RSS should be approved by the Secretary of State before the Waste Core Strategy is submitted. The number and distribution of housing across the County should therefore become clearer over the plan period.

[41] Office of National Statistics, 2004

15.2 About one-third of the population lives in rural areas of the County. Many villages are becoming dormitory settlements. Over half of Parishes have no shop or Post Office. Both the Regional Spatial Strategy and the Community Strategy recognise that rural regeneration and access to services and opportunities in the countryside need to be encouraged to stimulate the rural economy and protect existing jobs.

15.3 **Deprivation:** Overall, Worcestershire does not have high levels of deprivation but small pockets do exist[42]. Of the 361 Super Output Areas in Worcestershire, 30 fall in the most deprived 20% nationally, with 7 of those in the most deprived 10%. Six of these areas are in Kidderminster (including Birchen Coppice, Habberley, Offmore Farm, Greenhill and Central Kidderminster), 11 are in Redditch (including Church Hill, Woodrow, Batchley and Enfield) and 11 in Worcester City (including Warndon, Tolladine, Ronkswood, Dines Green and Gorse Hill). The remaining two areas are The Walshes in Stourport and Pickersleigh in Malvern.

15.4 The most deprived district in the county is Redditch, which is ranked 131 out of the 354 authorities in England. Wyre Forest is ranked 154, Worcester City is 162, Malvern Hills is 240, Wychavon is 261 and Bromsgrove is the least deprived district, ranked 299.

15.5 Some rural parts of the County are within the top 1% most deprived areas in England in terms of geographical access to services. These include Lindridge, Teme Valley, Tenbury and Longdon, all in Malvern Hills District.

16. Housing in Worcestershire – A 'Snapshot'

16.1 Worcestershire is part of the (West Midlands) South sub-regional housing market area and is characterised by high prices, high demand and acute affordability problems. In the past the north of the County, notably Redditch, Bromsgrove and Droitwich, saw rapid housing growth as a result of conscious "overspill" policies which directed migration out from Birmingham and the Black Country. The current RSS is based on a fundamental change in policy direction, that the Major Urban Areas (MUAs) should meet their own economic and social needs within their own boundaries wherever possible, limiting out migration. The corollary to this policy is to encourage housing growth in Worcestershire and the associated transport and economic infrastructure to Worcester and Redditch as Settlements of Significant Development, with Worcester as a New Growth Point. Other development should be concentrated in larger settlements and market towns. This approach has implications for the Green Belt and some adjustments to it may be necessary.

16.2 In the short term, the trends over the last five years are that dwelling completions have been above the level predicted, that targets for the use of brownfield land have been exceeded and that 80% of completions were within urban areas. The number of demolitions has been higher than predicted. The majority of these were demolitions of private dwellings in rural areas. The forecast for the period up to 2026 is 66p.a. Much of this material can be recycled. Site Waste Management Plans could do much to reduce the waste generated during the building process itself and the Strategy could encourage the Planning Authorities in the County to impose these as conditions on the planning permissions they grant

16.3 Excavated material, mostly footings created in house building, represents a significant source of waste material. Anecdotally, much of it appears to be disposed of on 'exempt' sites. The subsoil produced is of very little value and is probably landfilled under another guise (e.g. in "landscaped" mounds on site, "golf courses" or disposed of

[42] Communities and Local Government, 2007. Indices of Deprivation 2007.

on farmland under Permitted Development Rights). The waste Core Strategy could address this.

16.4 Future dwellings are likely to be constructed at high densities, sometimes more than 50 dwellings per hectare. Development at such densities needs to make express provision for waste collection. It may also make small scale 'bring' sites (e.g. bottle banks) viable at more locations than present. Provision needs to be made for waste arisings from all significant new developments. The design and layout of all new housing areas should in future therefore include specific provision to manage all the wastes new housing will produce, including that from its construction and demolition.

17. **Sustainability**

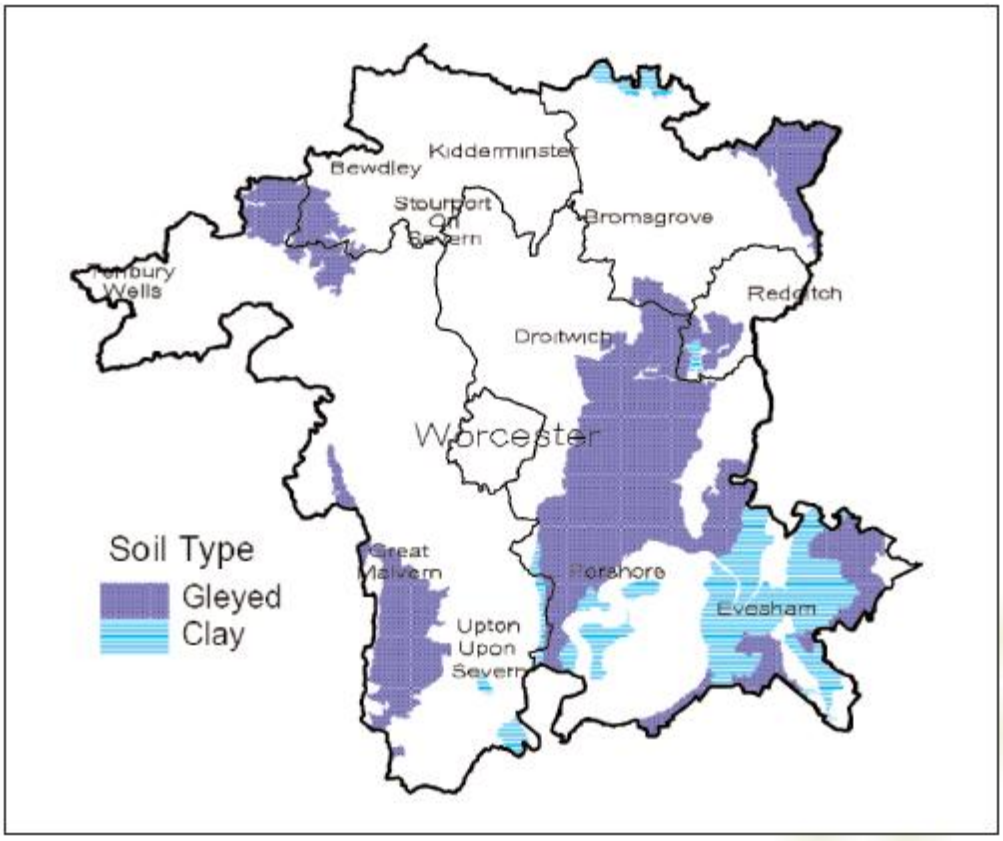
One final point is of the highest significance. The County produces significant volumes of greenhouse gas (around 5.3mt of CO^2)[43]. At 9.7 tonnes/per head, emissions are higher than the West Midlands regional figure (9.1 t/head). The Worldwide Fund for Nature has produce a sustainability survey of 60 UK cities. Worcester comes in at number 24. The figure for the rest of the County is likely to be very similar, which means that on average each of us is living on a resource base equivalent to 2.93 planets. The picture is even worse when looking at the rank order for food and transport, where Worcester comes in at 46th and 33rd respectively. The survey suggests that even if everyone in the city led exemplary sustainable private lives, they would still be taking up twice the capacity the planet can afford because of our share of our infrastructure and services. There is no reason to imagine that the same basic criticism would not apply across the whole County. This means that another "planet's worth" of solutions must come from central and local government and the business sector[44]. We all need to work together to address how we can achieve this; the Waste Core Strategy will be one way forward.

In Worcestershire the most likely impacts from climate change are an increased risk of subsidence in areas with clay soils (Figure 1) and more likelihood of extreme weather such as flooding events[45] and higher wind speeds. Some areas are also likely to experience increased fire risk (Figure 2).

[43] Environment Agency 2007, http://www.environment-agency.gov.uk/.
[44] Source where not cited – "Worcestershire Sustainable Community Strategy" (2008) http://www.worcestershirepartnership.org.uk/home/cabinet_17_july.doc – "Worcestershire Employment Requirements; Final Report" (G V A Grimley November 2007)

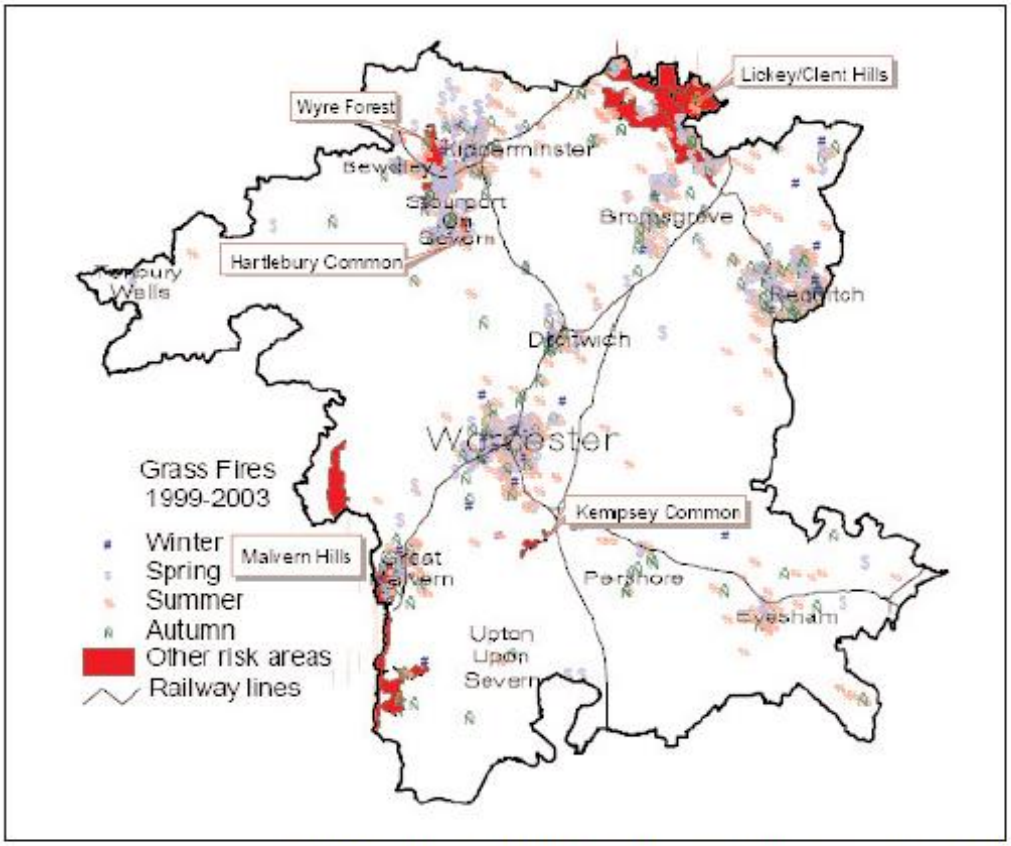
[45] Flood risk is dealt with in more detail in WCS2.

Figure 1. Map of increased risk of subsidence in Worcestershire



Source - Worcestershire Climate Change Impacts Study

Figure 2. Map of areas at risk from outdoor fires in Worcestershire



Source - Worcestershire Climate Change Impacts Study

Appendix 1: Worcestershire Waste Core Strategy Background Documents

To help provide a robust evidence base for the Waste Core Strategy the Council has prepared a series of background documents. These outline current thinking and have informed the approach taken to date in the development of the waste core strategy. All of these background documents are *living document* and are in a state of development and comments are invited on all available documents during the consultation period.

Key Themes

- *Towards a Vision Statement*: sets out the vision which is driving the Waste Core Strategy and details how it has evolved through consultation process.

- *Spatial Portrait:* provides additional detail to the spatial portrait set out in this consultation. It includes a description of the County and the local factors that need to be taken into account in developing the Waste Core Strategy.

- *Spatial Strategy:* Set out how the Spatial Strategy for the WCS has been developed

- *Arisings and capacity gap:* considers waste arisings in Worcestershire and makes projections about future arisings, treatment capacity and the need for facilities.

- *Monitoring Baseline*: Establishes the baseline for indicators set out in the WCS monitoring schedule and makes recommendations for those indicators that are not currently monitored

- *Identifying 'areas of search'*: sets out the approach to identifying locations suitable for waste management development, termed 'areas of search' and details all of the alternatives methods considered. It lists all potential locations assessed and details why they were, or were not, considered suitable for waste management development. This document has been informed by *ERM Industrial Estate Report.*

- *Climate Change:* is intended to form a basis for addressing climate change issues in the Waste Core Strategy. It considers mitigation through the reduction of greenhouse gas emissions, energy demands and the adaptation of waste management facilities to climate change.

- *Links with Districts & Neighbouring Local Authorities Plans and Strategies:* identifies the aspects of the guidance 'Creating Strong, Safe and Prosperous Communities' which are relevant to the production of the Waste Core Strategy. As a result of the guidance, this paper goes on to examine the links to waste in Worcestershire's Districts and neighbouring Local Authorities plans and strategies. It also evaluates what these links mean for the Waste Core Strategy.

- *Waste Sites in Worcestershire:* details existing waste management operations in Worcestershire and analysis of the relationship between size and throughput. In order to gain this information, the majority of known waste sites in the County were visited between September 2008 and July 2009. During these visits operators were asked

about any issues currently faced, any future changes anticipated, these meetings are summarised in the report.

- *Inland Waterways:* The document was developed in response to consultation comments received on behalf of British Waterways regarding the Worcestershire County Council Waste Core Strategy: Refreshed Issues & Options Consultation. It sets out the policy context relating to Inland Waterways in Worcestershire.

- *Waste Freight by Rail:* considers the potential for movements of waste by rail in Worcestershire.

Waste Streams

- *Municipal Waste:* sets out the national and local policy context. It also includes details of the waste arisings and available capacity for treatment of municipal waste within the County.

- *Commercial and Industrial Waste:* sets out the national and local policy context. It also includes details of the waste arisings and available capacity for treatment of municipal waste within the County.

- *Construction and Demolition Waste:* sets out the national and local policy context. It also includes details of the waste arisings and available capacity for treatment of municipal waste within the County.

- *Agricultural Waste:* considers waste arising from agricultural activities in Worcestershire. It examines what agricultural waste is, how it is treated and explores the planning permitted development rights. and identifies the potential options for making provision through the Waste Core Strategy.

- *Hazardous Waste:* The document considers hazardous waste arising in Worcestershire. It includes information relating to hazardous waste in a national and regional policy context and includes details of the demand and available capacity for the treatment of hazardous waste within the County.

- *Waste Arisings from Healthcare and Related Activities - Clinical Waste and Low Level Radioactive Waste:* considers waste arising from health care and related activities, focusing on Clinical waste; and Non-nuclear low level radioactive waste. It includes information relating to clinical waste and non-nuclear low level radioactive waste in a policy context. It also includes details of the demand and available capacity for treatment of clinical and non-nuclear low level radioactive waste within the County.

  Annex I considers low level radioactive waste from the nuclear industry in more detail, however it is not felt to be a significant issue in the County and is, therefore, not considered in the main body of the report.

Management Facilities

- *Types of Facilities:* is intended to be a simple guide that gives an overview of the processes that tend to happen at a range of different facilities and lists the things that might need to be thought about when deciding where a facility would be best situated. It also sets out some of the possible impacts and benefits of each type of facility.

- *Landfill* includes background data and considers issues around types of landfill and the policy context. It also details of the demand and available capacity for landfill within the County, based on EA data and the Council's own research.

- *Metal Recycling Sites:* considers all sites in Worcestershire involved in the recycling of metal, this includes sites which sort, bulk and/or process metal and any other sites that form part of the chain of processes of recycling waste metal into a material which can be re-used. It sets out the context and background data relating to metal recycling, detailing the demand and available capacity for metal recycling within the County.

- *Waste Transfer Stations:* considers Waste transfer stations, looking at the current need and capacity in Worcestershire and wider policy context.

- *Resource Recovery from Biodegradable Waste - Composting and Anaerobic Digestion* The document considers composting and anaerobic digestion. These treatment options are considered in the same document as they both offer the opportunity to recover resources from biodegradable waste. It sets out the context and background data relating to composting and anaerobic digestion.

- *Recovering Energy from Waste - Biological and Thermal Treatment Technologies:* sets out the context and background data relating to biological and thermal technologies for recovering energy from waste including anaerobic digestion, incineration and refuse derived fuels. There is some overlap with the Worcestershire Waste Core Strategy Background Document: Resource Recovery from Biodegradable Waste: Composting and Anaerobic Digestion.

- *Waste Water Treatment Infrastructure:* examines the need for waste water treatment infrastructure in Worcestershire. It includes information relating to waste water treatment policy context. It also proposes a possible way forward for the potential issues regarding who is responsible for what aspects of managing waste water treatment and related development.