Appendix 2: Baseline Review
Baseline Review

1.1 Baseline Review
This section outlines the key issues arising from the baseline analysis and is set out according to individual SEA/SA topics.

1.1.1 Air Quality
1.1.1.1 Relationship with other Plans and Programmes
On European level EU Directive 1996/62/EC on Ambient Air Quality sets the framework for dealing with local air pollution by introducing new air quality standards for previously unregulated pollutants. In addition, the 6th EU Environment Action Programme highlights strategic priorities of the Commission’s environmental policy, amongst others human health - an issue closely related to air pollution. On national level, the UK Air Quality Strategy defines a number of air quality objectives for several pollutants, whilst PPS 23 ‘Planning and Pollution Control’ stresses the importance of the proximity principle in siting new developments and thereby separating incompatible land uses.

1.1.1.2 Baseline Information
The monitoring of air quality is important in ensuring that levels of identified pollutants remain below national standards and targets to protect human health and eco systems. Identified pollutants include:

- Nitrogen oxides (NOX);
- Nitrogen dioxide (NO2);
- Particulate matter (PM10);
- Sulphur dioxide (SO2);
- Benzene;
- Carbon monoxide (CO); and
- 1, 3-butadine.

The ambient pollution concentrations and the number of days where air pollution was moderate or high have been collected. This data has been compared to regional data and national targets.

Table 1 shows the estimated pollutant levels\(^1\) of Watford Borough Council, St Albans City Council, Dacorum Borough Council, and Three Rivers District Council. The data was derived by calculating the average of for all sites in the Local Authority area. Data was not available for SO\(_2\) and CO levels in 2005. The

\(^1\) Air Quality Archive: [http://www.airquality.co.uk/archive/lqm/lqm.php](http://www.airquality.co.uk/archive/lqm/lqm.php)
data below displays a general trend of decreasing pollutant levels between 2001 and 2008.

Table 1: Pollutant Levels.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Watford Borough Council</th>
<th>St Albans City Council</th>
<th>Dacorum Borough Council</th>
<th>Three Rivers District Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>65.04 53.51 34.69</td>
<td>63.77 52.52 28.71</td>
<td>43.87 39.59 19.10</td>
<td>60.00 49.33 28.58</td>
</tr>
<tr>
<td>NO&lt;sub&gt;2&lt;/sub&gt;</td>
<td>34.20 29.90 22.46</td>
<td>33.67 29.36 18.41</td>
<td>25.92 22.89 12.93</td>
<td>32.33 28.25 19.03</td>
</tr>
<tr>
<td>SO&lt;sub&gt;2&lt;/sub&gt;</td>
<td>3.6 - -</td>
<td>3.76 - -</td>
<td>3.42 - -</td>
<td>3.6 - -</td>
</tr>
<tr>
<td>Benzene</td>
<td>0.72 0.63 -</td>
<td>0.60 0.52 -</td>
<td>0.46 0.41 -</td>
<td>0.59 0.52 -</td>
</tr>
<tr>
<td>CO</td>
<td>0.42 - -</td>
<td>0.38 - -</td>
<td>0.32 - -</td>
<td>0.37 - -</td>
</tr>
<tr>
<td>1, 3-butadine</td>
<td>0.31 0.25 -</td>
<td>0.27 0.21 -</td>
<td>0.19 0.17 -</td>
<td>0.27 0.21 -</td>
</tr>
</tbody>
</table>

Units: NOX (ugm-3 as NO2 annual mean); NO2 (ugm-3 annual mean); PM10 (ugm-3 grav. annual mean); SO2 (ugm-3 annual mean); Benzene (ugm-3 annual mean); CO (mgm-3 annual mean); 1, 3-butadine (1, 3-butadine 2001 ugm-3 annual mean)

Table 2 below displays estimated pollutant level data for the East of England<sup>2</sup>. The data was derived by calculating the average of the predictions for all sites in the East of England. No data was available for benzene or 1, 3-butadine. It can be seen that between 2001 and 2005 pollutant levels fall.

Table 2: Pollutant levels for the East of England.<sup>2</sup>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>2001</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>60.87</td>
<td>40.58</td>
</tr>
<tr>
<td>NO2</td>
<td>28.93</td>
<td>23.95</td>
</tr>
<tr>
<td>PM10</td>
<td>21.33</td>
<td>21</td>
</tr>
<tr>
<td>SO2</td>
<td>8.1</td>
<td>6.48</td>
</tr>
<tr>
<td>Benzene</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CO</td>
<td>0.4</td>
<td>0.24</td>
</tr>
<tr>
<td>1, 3-butadine</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Units: NOX (ugm-3 as NO2 annual mean); NO2 (ugm-3 annual mean); PM10 (ugm-3 grav. annual mean); SO2 (ugm-3 annual mean); Benzene (ugm-3 annual mean); CO (mgm-3 annual mean); 1, 3-butadine (1, 3-butadine 2001 ugm-3 annual mean)

<sup>2</sup> Air Quality Archive: [http://www.airquality.co.uk/archive/data_and_statistics.php?action=exceedence_pre_step&go=Go](http://www.airquality.co.uk/archive/data_and_statistics.php?action=exceedence_pre_step&go=Go)
Table 3 displays the national targets for pollutant levels\(^3\) and the year by which they are to be achieved whereas Table 5 shows the number of days when air pollution was ‘moderate’ or ‘high’ for PM\(_{10}\) at the local level.

Table 5 shows the number of days when air pollution was ‘moderate’ or ‘high’ in the East of England, and in England overall\(^4\). Figures for the East of England were calculated by taking an average of the sites where days were recorded (Norwich Centre, Southend-on-Sea, Thurrock, St Osyth, Sibton, Weybourne, and Wicken Fen). The number of days where air pollution was ‘moderate’ or ‘high’ in England does not include figures taken at St Osyth, Weybourne, Stockton-on-Tees Yarm, Hull Freetown, and Coventry Memorial park due to the fact that these were new sites\(^5\).

**Table 3: National Targets\(^3\)**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Objective concentration</th>
<th>measured as</th>
<th>Year to be achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_2)</td>
<td>200 µg/m(^3) not to be exceeded more than 18 times per year</td>
<td>1 hour mean</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td>40 µg/m(^3)</td>
<td>annual mean</td>
<td>2005</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>40 µg/m(^3)</td>
<td>annual mean</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>50 µg/m(^3) not to be exceeded more than 35 time per year</td>
<td>24 hour mean</td>
<td>2004</td>
</tr>
<tr>
<td>SO(_2)</td>
<td>350 µg/m(^3) not to be exceeded more than 24 times per year</td>
<td>1 hour mean</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>125 µg/m(^3) not to be exceeded more than 3 times per year</td>
<td>24 hour mean</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>226 µg/m(^3) not to be exceeded more than 35 times per year</td>
<td>15 minute mean</td>
<td>2005</td>
</tr>
<tr>
<td>Benzene</td>
<td>16.25 µg/m(^3)</td>
<td>annual running mean</td>
<td>2010</td>
</tr>
<tr>
<td>CO</td>
<td>10 mg/m(^3)</td>
<td>running 8 hour mean</td>
<td>2003</td>
</tr>
<tr>
<td>1, 3-butadine</td>
<td>2.25 µg/m(^3)</td>
<td>annual running mean</td>
<td>2003</td>
</tr>
</tbody>
</table>

**Table 4: The number of days where air pollution was ‘moderate’ or ‘high’\(^4\).**

<table>
<thead>
<tr>
<th>Local Authority</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watford Borough Council</td>
<td>5</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>St Albans City Council</td>
<td>4</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Dacorum Borough Council</td>
<td>0</td>
<td>4</td>
<td>(4)</td>
</tr>
<tr>
<td>Three Rivers District Council</td>
<td>5</td>
<td>8</td>
<td>13</td>
</tr>
</tbody>
</table>

\(^3\) APIS: [http://www.apis.ac.uk/overview/regulations/overview_UK_NAOS.htm](http://www.apis.ac.uk/overview/regulations/overview_UK_NAOS.htm)

\(^4\) Herts Link – Quality of Life Indicators [http://www.hertslink.org/portal/Observatory/Data%20by%20Subject/Life%20by%20the%20community/Quality%20of%20Life%20Indicators](http://www.hertslink.org/portal/Observatory/Data%20by%20Subject/Life%20by%20the%20community/Quality%20of%20Life%20Indicators)

Table 5: The number of days where air pollution was ‘moderate’ or ‘high’.

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site Type</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>East of England</td>
<td>Average (Urban and Rural)</td>
<td>40</td>
<td>69</td>
</tr>
<tr>
<td>England Urban</td>
<td>Urban</td>
<td>19</td>
<td>51</td>
</tr>
<tr>
<td>England Rural</td>
<td>Rural</td>
<td>34</td>
<td>68</td>
</tr>
</tbody>
</table>

The pollutant levels in the area encompassed by Three Rivers District Council decreased between 2001 and 2008. The levels of NOX and NO2 in both 2001 and 2008 can be seen to be above the levels for the East of England, but below the national target level of 40 µg/ m³. The levels of PM10, SO2 and CO in both 2001 and 2005 were below the East of England level, and the national targets. The levels of benzene and 1, 3-butadine were also below the national targets.

As the levels of NOX and NO2, and PM10 are close to East of England levels, Three Rivers District Council has declared 5 Air Quality Management Areas:

- Chorleywood: Along the M25 from just south of Junction 18 to just north of where the motorway crosses the River Chess extending 74m either side of the centreline (NO2 and PM10);
- Chorleywood: A slightly narrower area from just north of Junction 18, along the M25 to just north of where the motorway crosses the River Chess extending 38m either side of the centreline (PM10);
- Chandlers Cross: An area along the M25 from just west of where Chandler's Lane crosses the M25 to the beginning of Junction 19 of the motorway extending 74m either side of the centreline (NO2);
- Chandlers Cross: A slightly narrower area than that for NO2 extending 38m either side of the centreline (PM10); and,
- Kings Langley: An area surrounding where the M25 crosses the railway extending 74m either side of the centreline (NO2).

Within these areas, the levels of NO2 and PM10 are closely monitored for change. The number of days where air pollution was moderate or high increased between 2001 and 2003 from 5 to 13 days. This level, however, is both below the average for the East of England and the average for England.

Trends

In general, pollutant levels are decreasing, and are below the national targets.
Future baseline

Assuming that the proposed plans and strategies identified in the PPP review will go ahead the current air quality baseline is likely to be maintained in the short term but may deteriorate in the medium to long term. The Local Transport Plans and other strategies are likely to maintain air quality, but beyond these plan periods, if the district is to accommodate the East of England’s housing and employment targets, there is a likelihood of increased commuting therefore emissions.

1.1.2 Biodiversity

1.1.2.1 Relationship with other Plans and Programmes

Numerous international agreements deal with the loss of biodiversity. The Ramsar, Bonn and Bern Conventions aim to protect wetlands, migratory species, wildlife and natural habitats respectively whereas the more recent Convention on Biological Diversity, the Millennium Development Goals and the World Summit on Sustainable Development stress the wider importance of biodiversity and its conservation. On European level, the Birds and Habitats Directive and the EU Biodiversity Strategy make more specific provisions which are than cascaded down into national legislation.

The Bern convention, Birds and Habitats Directive are implemented in the UK via the Wildlife and Countryside Act, whereas the national Biodiversity Action Plan (UK BAP) sets out more detailed commitments for species and habitat protection and enhancement. The Biodiversity Strategy for England aims to embed biodiversity conservations in all main sectors of public policy, while the England Forestry Strategy fosters the sustainable management and expansion of woodland areas. This is supplemented by a number of planning policy statements/guidance notes, such as PPG 2 ‘Green Belts’, PPS 9 ‘Biodiversity and Geological Conservation’ and MPG 6 ‘Aggregates Provision’ which make specific provisions for biodiversity conservation in the planning system. More locally, the Hertfordshire Biodiversity Action Plan aims to contribute to the UK BAP by setting out actions for conservation of certain species and habitats.
Three Rivers falls within the English Nature’s natural areas “London Basin” (number 66) and the “Chilterns” AONB (number 65). The Chilterns is an area of unspoilt rolling chalk hills, beechwoods and valleys. As illustrated in Figure 1, the major part of the district falls into the London Basin. Natural areas are biogeographic zones which reflect the geological foundation, the natural systems and processes, and the wildlife within the area. They follow very similar boundaries to the landscape character areas, although natural areas are often divided into more than one character area. They provide the context in which plans such as the LDF can look to secure, strengthen and enhance the biodiversity and natural features which characterise Three Rivers’ part of the Natural Area.
The English Nature summary for the London Basin starts as follows:

“The London Basin is a large, trough-like basin which was formed around 50 million years ago, and is filled with mostly sands and clay sediments. About one-third of the area is covered by London and the wildlife of the Natural Area is characterised by islands of semi-natural habitats. These habitats include large areas of woodland, with extensive stands of mature beech woods, significant areas of lowland mixed deciduous woodland and numerous large wood pastures and parklands. There are also notable areas of heathland in the Natural Area.”

Three Rivers contains a range of sites designated for their biodiversity value. These are illustrated in Figure 2 and discussed in more detail below.

**Figure 2**

**Designated Areas in SW Herts**

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Figure 2: Designated Areas in South West Hertfordshire

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Three Rivers contains no International or European designations (Ramsar sites, SPAs, SACs). However, five Sites of Special Scientific Interest (SSIs), covering 114 hectares can be found in the district (Whippendell Wood, Croxley Common Moor, Frogmore Meadows, Sarratt Bottom, Westwood Quarry).

English Nature maintains statistics on the condition of all SSSIs in England, and they have a Public Service Agreement target to have 95% of the SSSI area in “favourable” or “unfavourable recovering” condition by 2010.

92.9% of the area covered by Three Rivers’ SSSIs is in favourable or unfavourable and recovering condition. This is just below the PSA target and compares very well with the overall figure for Hertfordshire (66.29%) and England (63%).

English Nature reports for the condition of SSSIs were reviewed to find the reasons behind certain SSSI areas falling in the ‘part destroyed/destroyed’ category. These should be taken into account in the LDF plan making process to avoid the degeneration of SSSIs in future.

There are no National Nature Reserves (NNR) in Three Rivers itself; however NNR Ruislip Woods is situated just outside Hertfordshire. It is designated for its woodland, open water, lowland grassland habitats. According to English Nature\(^7\) there are nine Local Nature Reserves in Three Rivers, and the locations of these sites have been taken into account in the assessment of the LDF:

- Oxhey Woods (100 ha);
- Croxley Common Moor (41 ha);
- Stockers Lake (38 ha);
- The Withey Beds (7.5 ha);
- Chorleywood House Estate (65 ha);
- Batchworth Heath (4 ha);
- The Aquadrome (41 ha);
- Prestwick Road Meadows (2.8 ha); and,
- Chorley Wood Common (76 ha).

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Table 6: Reasons for adverse conditions of SSSIs (Source: English Nature).

<table>
<thead>
<tr>
<th>Reason for adverse condition</th>
<th>% of unit area not meeting PSA target</th>
<th>Reason for adverse condition</th>
<th>% of unit area not meeting PSA target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overgrazing</td>
<td>34.38%</td>
<td>Inappropriate prescription</td>
<td>1.02%</td>
</tr>
<tr>
<td>Moor burning</td>
<td>26.42%</td>
<td>Fire – other</td>
<td>0.95%</td>
</tr>
<tr>
<td>Drainage</td>
<td>8.98%</td>
<td>Siltation</td>
<td>0.84%</td>
</tr>
<tr>
<td>Sea fisheries</td>
<td>6.93%</td>
<td>Water abstraction</td>
<td>0.79%</td>
</tr>
<tr>
<td>Air pollution</td>
<td>6.73%</td>
<td>Inappropriate water levels</td>
<td>0.76%</td>
</tr>
<tr>
<td>Forestry and woodland management</td>
<td>6.45%</td>
<td>Inappropriate dredging</td>
<td>0.67%</td>
</tr>
<tr>
<td>Inappropriate scrub control</td>
<td>6.10%</td>
<td>Inappropriate cutting/mowing</td>
<td>0.63%</td>
</tr>
<tr>
<td>Undergrazing</td>
<td>5.89%</td>
<td>Inappropriate pest control</td>
<td>0.52%</td>
</tr>
<tr>
<td>Other - specify in comments</td>
<td>5.88%</td>
<td>Pesticide/herbicide use</td>
<td>0.29%</td>
</tr>
<tr>
<td>Coastal squeeze</td>
<td>5.71%</td>
<td>Peat extraction</td>
<td>0.26%</td>
</tr>
<tr>
<td>Inappropriate ditch management</td>
<td>5.10%</td>
<td>Game management - pheasant rearing</td>
<td>0.22%</td>
</tr>
<tr>
<td>Water pollution - agriculture/run off</td>
<td>3.21%</td>
<td>Vehicles - other</td>
<td>0.21%</td>
</tr>
<tr>
<td>Inappropriate weed control</td>
<td>2.55%</td>
<td>Military</td>
<td>0.20%</td>
</tr>
<tr>
<td>Water pollution - discharge</td>
<td>2.44%</td>
<td>Game management - other</td>
<td>0.20%</td>
</tr>
<tr>
<td>Public access/disturbance</td>
<td>1.49%</td>
<td>Earth science feature obstructed</td>
<td>0.18%</td>
</tr>
<tr>
<td>Inappropriate coastal management</td>
<td>1.47%</td>
<td>Vehicles - illicit</td>
<td>0.18%</td>
</tr>
<tr>
<td>Agriculture - other</td>
<td>1.44%</td>
<td>Planning permission - other mineral and waste</td>
<td>0.16%</td>
</tr>
<tr>
<td>Deer grazing/browsing</td>
<td>1.41%</td>
<td>Earth science feature removed</td>
<td>0.11%</td>
</tr>
<tr>
<td>Fertiliser use</td>
<td>1.34%</td>
<td>Planning permission - general</td>
<td>0.10%</td>
</tr>
<tr>
<td>Inappropriate stock-feeding</td>
<td>1.04%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"A 50 Year Vision for the Wildlife and Natural Habitats of Hertfordshire"* was drawn up for Hertfordshire as a response to the UK Biodiversity Action Plan. It evaluates the status of habitats and species in the county and thereby identifies key habitats, species of national and local significance and High Biodiversity Areas. The Hertfordshire BAP lists species to be protected. Development stages should make reference to this BAP in addition to the UK BAP.

Species for which action plans have been prepared include, amongst others, great crested newt, bittern, stone curlew, song thrush, freshwater white-clawed crayfish, water vole, otter, dormouse, cornflower and a number of local species. Priority habitats for which action plans have been prepared include, amongst others ancient and/or species-rich hedgerows, chalk rivers, fens, reed beds and a variety of lowland habitats. These Biodiversity Action Plans should be taken into account by Three Rivers District Council when deciding on issues which could impact on biodiversity directly or indirectly.

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Hertfordshire’s Quality of Life Report 2004 Report⁹ reports a number on indicator species which could potentially be used for monitoring:

- Water voles (declining, reflecting the national trend);
- Pipistrelle bats (no trend, first monitored in 2004);
- Grey heron (reflecting wetlands; 130 nests, regional decline and national increase);
- Skylark (reflecting farmland; increasing against regional and national decline);
- Song thrush (reflecting woodland and mixed farmland; increasing against regional decline and national increase); and,
- House sparrow (reflecting urban environment; declining in line with regional trend, no obvious national trend).

![Woodland Cover](image)

Quantified figures for woodland cover were not available for Three Rivers.

The county of Hertfordshire itself has a total area of woodland of 15,503 ha covering 9.5% of the county (see Figure 3). This is slightly above the UK average of 7.7% but well below the woodland coverage in continental Europe of 30%.

**Figure 3: Woodland coverage in Hertfordshire by type forest (Source: Forestry Commission¹⁰)**

*Trends and future baseline*

The condition of SSSIs in Three Rivers is in line with or close to English Nature’s PSA target.

The East of England Plan proposes to build 83,200 new houses in Hertfordshire (5,200 in Watford, 12,000 in Dacorum, 7,200 St. Albans and 4,000 Three Rivers)

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by 2021\textsuperscript{11}. It is therefore possible that these development pressures could adversely affect biodiversity in the absence of strategic guidance on dealing with sites with biodiversity value.

\textit{Data Gaps/Limitations}

Lack of data at local authority level.

1.1.3 \textit{Climatic Factors}
1.1.3.1 Relationship with other Plans and Programmes
The United Nations Framework Convention on Climate Change and the Kyoto Protocol provide the international framework for tackling climate change. In addition, the UN Millennium Declaration and Millennium Development Goals, and the EU Sixth Environment Action Programme stress its importance whereas the EU Bio Fuels Directive and the EU Directive to promote Electricity from Renewable Energy set out specific measures to mitigate climate change.

On a national scale, ‘Climate Change: The UK Programme’ and its review propose to cut UK’s carbon dioxide emissions by some 60\% by about 2050. This is supplemented by the white papers on energy and transport which highlight the importance of energy efficiency, renewable energy sources and sustainable transport. In a planning context PPS22 ‘Renewable Energy’ states regional and local planning documents shall contain policies to promote renewable energy. The RSS for the East of England, the ‘East of England Plan’ implements this by setting a renewables target for electricity of 17\% by 2010 (excluding offshore wind).

1.1.3.2 Baseline Information
Climate change is an issue that is at the forefront of both political and public thinking at present. Over the last century, the U.K. has seen an increase in the number of storms, and extreme weather spells (for example heat waves). Climate change is partially caused by the production of greenhouse gases, which heat the Earth and cause temperatures to rise. The burning of fossil fuels is a major contributor to greenhouse gas production. Rising temperatures will cause ice caps to melt and sea levels to rise. If climate change is not slowed down there is an increased risk of flooding, storms, drought, introduction of foreign pests, and insurance blight\textsuperscript{12}.

For the purpose of this report, data on carbon emissions (Table 7), improvements in domestic energy efficiency (Table 8), and Local Authority energy consumption


\textsuperscript{12} Harman, J, Gawith, M. and Colley, M. 2005. Progress on assessing climate impacts through the UK Climate Impacts Programme, Weather, 60 (9), 258-262.
was collected (Table 9). Table 10 reveals that there was a significant increase in energy consumption in Three Rivers.

It can be seen that carbon emissions per capita for Three Rivers, higher than the regional average, but are slightly lower than the national average. Domestic energy efficiency has improved, with electricity consumption decreasing between 2002 and 2004.\textsuperscript{13}

Table 7: Carbon dioxide emission estimates per local authority in 2007 (in kilo tonne CO\textsubscript{2}).\textsuperscript{13}

<table>
<thead>
<tr>
<th>Local Authority</th>
<th>Industry and Commercial</th>
<th>Domestic</th>
<th>Road Transport</th>
<th>Land Use Change</th>
<th>Total</th>
<th>Population in Thousands</th>
<th>Per capita CO2 (in)</th>
<th>Domestic per capita CO2 (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watford</td>
<td>214</td>
<td>189</td>
<td>110</td>
<td>0</td>
<td>514</td>
<td>79.7</td>
<td>6.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>148</td>
<td>224</td>
<td>345</td>
<td>2</td>
<td>718</td>
<td>86.4</td>
<td>8.3</td>
<td>2.6</td>
</tr>
<tr>
<td>St. Albans</td>
<td>245</td>
<td>340</td>
<td>543</td>
<td>2</td>
<td>1130</td>
<td>132.3</td>
<td>8.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Dacorum</td>
<td>242</td>
<td>342</td>
<td>305</td>
<td>4</td>
<td>894</td>
<td>138.6</td>
<td>6.5</td>
<td>2.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>15782</td>
<td>13250</td>
<td>14439</td>
<td>636</td>
<td>44106</td>
<td>5661</td>
<td>7.8</td>
<td>2.3</td>
</tr>
<tr>
<td>UK TOTAL</td>
<td>232945</td>
<td>145725</td>
<td>136361</td>
<td>1815</td>
<td>513216</td>
<td>60975.4</td>
<td>8.4</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Table 8: Percentage improvement in domestic energy efficiency (1/4/96-31/3/2004).\textsuperscript{14}

<table>
<thead>
<tr>
<th>Local Authority</th>
<th>Improvement in energy efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watford Borough Council</td>
<td>21.1</td>
</tr>
<tr>
<td>St Albans City Council</td>
<td>15.4</td>
</tr>
<tr>
<td>Dacorum Borough Council</td>
<td>17.9</td>
</tr>
<tr>
<td>Three Rivers District Council</td>
<td>31.87</td>
</tr>
</tbody>
</table>


Table 9: Local authorities’ energy consumption\textsuperscript{15}.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Watford Borough Council</th>
<th>St Albans City Council</th>
<th>Dacorum Borough Council</th>
<th>Three Rivers District Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual/Typical energy consumption LA buildings - fossil fuels (consumption/m(^2))</td>
<td>122.7</td>
<td>-</td>
<td>95.8</td>
<td>112.0</td>
</tr>
<tr>
<td>Actual/Typical energy consumption LA buildings – electricity (consumption/m(^2))</td>
<td>136.6</td>
<td>-</td>
<td>225.7</td>
<td>234.0</td>
</tr>
</tbody>
</table>

Besides reducing greenhouse gas emissions to mitigate climate change it is also important that local authorities adapt to the likely impacts. This is necessary since the climate is already changing and is likely to continue to do so for at least the next decade.

*Trends*

It can be seen that domestic energy efficiency improved\textsuperscript{14}. There appears to be no trend regarding Local Authority energy consumption\textsuperscript{15}.

*Data Gaps/ Uncertainties*

Carbon emissions per local authority are estimates only and do not include emissions from aviation, offshore and shipping.

*Future baseline*

Addressing the cause and effects of climate change is a central element to development at any level. Whilst with the support of other plans and policy guidance such as PPS25, and PPS1 some progress can be achieved in addressing climate change effects like flooding and promote resource efficiency (for example, with the Three Rivers Sustainability Action Plan), only short term positive effects are likely in the absence of a strategic policy defining roles of public, residential and commercial developments in dealing with climate change.

\textsuperscript{15} ODPM: [http://www.bvpi.gov.uk/pages/index.asp](http://www.bvpi.gov.uk/pages/index.asp)
1.1.4  Cultural Heritage

1.1.4.1  Relationship with other Plans and Programmes
The European Spatial Development Perspective aims for balanced and sustainable development in the European Union. As part of that the conservation and management of natural resources and the cultural heritage is set out as one of three fundamental goals. In the UK, ‘The Historic Environment: A force for our future’ states the intention of the government to protect the historic environment and recognises its major contribution to the rural economy, where as PPG15 ‘Planning and the Historic Environment’ and PPG ‘Archaeology and Planning’ set out specific guidance on how the planning system can foster the conservation of historic environmental and cultural heritage.

1.1.4.2  Baseline Information
According to English Heritage’s Heritage Counts 2009, the county of Hertfordshire contains:

- 177 Scheduled Ancient Monuments (increase by 8 from 2003);
- 8,071 Listed Buildings (decrease by 65 from 2003);
- 48 Registered Parks and Gardens (increase by 5 from 2003); and,
- 191 Conservation Areas (increase by 13 from 2003).

None of England’s historic battlefields or World Heritage Sites are located in Hertfordshire. However, 2 National Trust Properties can be found in the county: Ashridge Estate (Dacorum) and Shaw’s Corner (near Wheathampstead).

Development pressures and changes in agricultural policy are the two major challenges for the East of England’s historic environment according to English Nature’s Heritage Counts 2004¹⁶. For South West Hertfordshire, being part of the London Arc in immediate proximity to Greater London, the planned housing growth and infrastructure developments could potentially have adverse impacts on the local historical heritage and the proposed change needs to be carefully managed.

Figure 4: Registered parks and gardens and scheduled monuments in South West Hertfordshire.
In addition, the following historic assets can be found in Three Rivers:

- Three Scheduled Ancient Monuments (Oxhey Hall Moated Site, Roman Villa on Moor Park Golf Course, The Manor of the More);

- 351 Listed Buildings;

- Buildings at risk: Langleybury House, Langleybury, Abbots Langley and The Great Barn, Croxley Hall Farm, Rickmansworth;

- Numerous locally listed buildings;

- 22 Conservation Areas; and

- Two Registered Parks and Gardens (Cassiobury Park (287 ha) jointly with Watford and Moor Park (147 ha)).

It should be noted that Hertfordshire County Council have undertaken extensive work with regards to local archaeological assets. Its Hertfordshire Historic Environment Record brings together (HER) information regarding Hertfordshire’s historic environment in a computerised form. It contains information on historic buildings, archaeological remains, historic sites and military remains (see Figure 5). It is anticipated that this information will be used to assess in more detail how archaeological assets could be affected by the proposed planning policies.

*Trends*

For Hertfordshire as a whole there was a slight increase in scheduled monuments, parks and gardens and conservation areas and a slight decrease in listed buildings, compared with 2003.

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18 See http://www.hertsdirect.org/ibsleisure/heritage1/archaeology/sitesandmon
Figure 5: Historic Landscape Classification in South West Hertfordshire.

Future baseline

As discussed above, development pressure is likely to have negative effect on cultural heritage. Although existing planning guidance and conservation appraisal results may help mitigate the negative effect in the short term, with no strategic direction on dealing with the relationship between cultural heritage and future development, negative effect in the medium and long term is likely.
1.1.5 **Landscape**

1.1.5.1 **Relationship with other Plans and Programmes**

The protection and enhancement of the countryside is often dealt with in conjunction with biodiversity issues, such as in the biodiversity strategy for England ‘Working with the Grain of Nature’, or agricultural issues, such as farming schemes and subsidies. In addition, the new Countryside and Rights of Way Act 2000 (CRoW) created a new statutory right of access to open county and registered common land and provides the context for many accessibility issues in Britain. More locally, the Chilterns AONB strategy sets the framework for protecting and enhancing the Chilterns – an area of outstanding natural beauty lying partly in SW Hertfordshire.

1.1.5.2 **Baseline Information**

*Tranquillity/Light Pollution*

Satellite data shows that light pollution is increasing and tranquillity is decreasing in both the London Arc area and the East of England. This resulted in only 5% of truly ‘dark skies’ being left; most of them in deep rural areas further away from Greater London (see Figure 6). However, in Hertfordshire light pollution increased by a modest 5% compared with a 21% increase for the overall region. Over an even longer period (between 1960s and 1990s) ‘tranquil areas’ and ‘tranquil areas with some intrusion’, as based on the Campaign to Protect Rural England’s mapping exercise, have been decreasing substantially mainly due to new housing and infrastructure developments (see Figure 7). For the purpose of this mapping exercise ‘tranquil areas’ were defined as:

‘Places which are sufficiently far away from the visual or noise intrusion of development or traffic to be considered unspoilt by urban influences’

These places were identified through specific criteria, such as certain distances away roads, towns, airports and power stations.

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Figure 6: Light pollution in the East of England (source: Campaign to Protect Rural England).

Figure 7: Loss of tranquility between the 1960's and 1990's (source Campaign for Rural England).
Figure 8: Landscape Character Areas in South West Hertfordshire.

Three Rivers falls into three Landscape Character Areas, “Northern Thames Basin”, “Thames Valley” and “Chilterns” whereby the two latter ones cover the vast majority of Three Rivers District. According to the Countryside Agency they are characterised as follows:

“Thames Valley is the hydrological floodplain of the river Thames characterised by large areas of fragmented poor agricultural land. Towards London in the east, the natural character of the area is overtaken by urban influences; a dense network of roads including the M25 corridor, Heathrow Airport, railway lines, golf courses, pylon lines, reservoirs, extensive mineral extraction and numerous flooded gravel pits.”

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*Chiltern* consists mainly of chalk hills, small fields and dense network of ancient hedges, often on steep ground. The agricultural landscape is often dominated by hedges, trees and small woodlands. Scattered villages and farmsteads can be found; some of medieval origin, displaying consistent use of traditional building materials including flint, brick, and clay tiles. A network of ancient green lanes and tracks covers the area including the Ridgeway which links numerous archaeological sites and settlements.

In addition, parts of Three Rivers fall into the Area of Outstanding Natural Beauty (AONB) “Chilterns” which consists of gently rolling hills covered with beech woodland and chalk downland providing habitat to wild flowers and red kites.

Three Rivers, being a town in close proximity to London, experienced as most areas in the London Arc, some changes inconsistent to landscape character22.

Hertfordshire County Council has conducted in depth work regarding local landscape character assessments23. It defined Hertfordshire Landscape Regions which are based on Countryside Agency/ English Nature Countryside Joint Character Areas and supplemented with some local refinements (see Figure 9). It is anticipated that this information and Historic Landscape Data (HLC) will be used to assess in more detail how local landscape character could be affected by the proposed planning policies.

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Figure 9: Local Landscape Character Areas in South West Hertfordshire.

**Trends**

Loss of tranquillity and light pollution are likely to increase further due to development pressures. Inconsistent changes to landscape character are likely to continue due to development pressures e.g. the aim to build 83,200 new houses in Hertfordshire (5,200 in Watford, 12,000 in Dacorum, 7,200 St. Albans and 4,000 Three Rivers) by 2021\(^{24}\).

**Data Gaps/Limitations**

Tranquillity data not available at local authority level.

Future baseline:

Development pressure to achieve target housing and employment may directly or indirectly affect areas of landscape character, assuming existing guidance and policies only are taken forward. For example the Chilterns AONB Management Plan 2008 may address development pressures such as quarrying, transport, housing and employment land in the short term (i.e. upto 2013) and the plan may be revised for the medium term thus protecting this landscape feature. However other local landscape features in the district are likely to be negatively affected with increasing development demands in the future. Thus a policy direction to addressing this issue is required.

1.1.6 Material Assets

1.1.6.1 Relationship with other Plans and Programmes

The World Summit Johannesburg in 2002 and the 6th EU Environment Action Programme highlighted the need for greater resource efficiency, waste reduction and the promotion of renewable energy to make sustainable development feasible.

Numerous pieces of European legislation deal with waste issues; the Landfill Directive and the Waste Framework Directive are only two of them. The former aims to reduce the amount of waste sent to landfill whereas the latter highlights the importance of the waste hierarchy and sets the framework for national waste management licensing. The UK Waste Strategy sets out measures to make waste management in the UK more sustainable, such as decoupling waste from economic growth and promoting the composting of organic waste. PPS22 ‘Renewable Energy’ sets out the Government’s planning policies for renewable energy. It details eight key principles regional planning bodies and local planning authorities should adhere to in their approach to planning for renewable energy.


1.1.6.2 Baseline Information

Waste

Waste production and disposal is a growing problem. In almost every country production of waste increases at least as fast as its gross national product.\\n
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Disposal of this waste is becoming increasingly difficult, with diminishing numbers of suitable sites for landfill disposal.\textsuperscript{26}

Legislation to reduce waste production, and to increase re-use, and recycling has been introduced.\textsuperscript{27} Stringent targets, particularly for biodegradable waste, have been set by the European Union. The Member States must reduce the amount of biodegradable waste sent to landfill to 35\% of 1995 levels by 2016.27. If these targets are not met, heavy fines will be imposed on the U.K.\textsuperscript{27}

For the purpose of this report, Best Value Performance Indicator (BVPI) data has been collected, along with waste arisings data for Hertfordshire. Table 10 and Table 11 below display this data. It can be seen that in general the percentage of household waste composted and recycled has increased between 2001 and 2008.\textsuperscript{28} In absolute terms the house hold waste recycled has increased between 2001 and 2009.

Table 10: Best Value Performance Indicator data for waste.\textsuperscript{28}

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Three Rivers District Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of household waste composted</td>
<td>-</td>
</tr>
<tr>
<td>% of household waste recycled</td>
<td>12.2</td>
</tr>
<tr>
<td>Kg of household waste collected per head</td>
<td>307.4</td>
</tr>
</tbody>
</table>

Table 11: Percentage of the total household waste arisings in Hertfordshire.\textsuperscript{4}

<table>
<thead>
<tr>
<th>Date</th>
<th>Recycled %</th>
<th>Recycled Total (Tonnes)</th>
<th>Composted %</th>
<th>Composted Total (Tonnes)</th>
<th>Used to recover heat, power and other energy sources %</th>
<th>Used to recover heat, power and other energy sources Total (Tonnes)</th>
<th>Landfilled %</th>
<th>Landfilled Total (Tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>10.5</td>
<td>55,443</td>
<td>4.6</td>
<td>24,417</td>
<td>7.7</td>
<td>40694</td>
<td>77.2</td>
<td>408,787</td>
</tr>
<tr>
<td>2003 - 2004</td>
<td>15.8</td>
<td>80,982</td>
<td>6.3</td>
<td>32,034</td>
<td>6.6</td>
<td>33,791</td>
<td>71.4</td>
<td>366,509</td>
</tr>
<tr>
<td>2004 - 2005 (Provisional)</td>
<td>17.3</td>
<td>90,999</td>
<td>9.5</td>
<td>49,886</td>
<td>5.8</td>
<td>30,741</td>
<td>67.5</td>
<td>355,918</td>
</tr>
</tbody>
</table>

The amount of household waste composted in the area encompassed by Three Rivers District Council increased between 2004 and 2008.\textsuperscript{28}

The amount of household waste recycled has increased between 2001 and 2009 from 307.4 kg per household to 481.58 kg per household. In 2009/10, residents in Three Rivers recycled nearly 50\% of their waste. The level of household recycling achieved by Three Rivers District Council is higher than that of Hertfordshire levels.\textsuperscript{4}


\textsuperscript{28} ODPM: http://www.bvpi.gov.uk/pages/index.asp

24
Trends

The percentage of household waste composted and recycled is increasing, but the amount of waste collected per head is increasing28. In Hertfordshire, the amount of household waste being disposed of to landfill is decreasing, but the amount of waste used to recover energy is decreasing4.

Land Use

As already mentioned, there are conflicting pressures on land use in Hertfordshire. This is particularly true for housing and associated infrastructure which has to be balanced with the protection of the natural environment29.

To achieve both the more efficient use of previously developed land (PDL) and the reduction of development pressures on undeveloped (greenfield sites and metropolitan greenbelt land), the government set a target that 60% of all new developments should be built on brownfield sites.

A measure of the more efficient use of material assets in the form of land is therefore the local authority best value performance indicator (BVPI) BV 106 which states the percentage of new homes constructed on previously developed land (see Table 12).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Watford</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>98%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>83%</td>
<td>84%</td>
<td>94%</td>
<td>99%</td>
<td>99%</td>
<td>90%</td>
<td>99%</td>
</tr>
<tr>
<td>Dacorum</td>
<td>96%</td>
<td>97%</td>
<td>94%</td>
<td>94%</td>
<td>97%</td>
<td>99%</td>
<td>97%</td>
</tr>
<tr>
<td>St. Albans</td>
<td>90%</td>
<td>83%</td>
<td>90%</td>
<td>96%</td>
<td>97%</td>
<td>99%</td>
<td>94%</td>
</tr>
</tbody>
</table>

The figures illustrate that a much higher proportion of new developments in South West Hertfordshire was built on previously developed land compared with the regional average of 57% for 1999-200230. Previously developed land is a finite resource and might not be as readily available in the future, thus leading to more development on undeveloped sites.

Detailed information about the amount of potentially contaminated land in the four authorities concerned was not available for this study. DCLG introduced two new indicators from 2005/2006:

- BV 216a Number of sites of potential concern with respect to land contamination; and,

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• BV 216b Number of sites for which sufficient detailed information is available to decide whether remediation of the land is necessary, as a percentage of all 'sites of potential concern'.

It is proposed that those indicators should inform the annual monitoring reports.

A measure of achieving higher land efficiency is increasing housing density. However, to sustain quality of life this has to be combined with good design. Unfortunately, density figures of previous housing developments have not been available to inform this report.

The same holds true for local aggregates and mineral resources. Extracting primary resources can cause a variety of impacts which could potentially be avoided by using secondary or recycled materials. Information of the current usage of these materials would therefore be advantageous for this assessment.

Trends and future baseline

The East of England Plan proposes to build 83,200 new houses in Hertfordshire by 2021. Although the aim is to build the majority of these houses on previously developed land, a significant proportion might be built on undeveloped land. The associated land take could lead to a variety of economic, social and environmental impacts. Although PPS 3 and other Planning policies may advocate uptake of PDL, unless a preferential selection of PDL is explicitly stated for any development in the district, conservation of top soil may not be a practice by default.

Data Gaps/Limitations

Information regarding land contamination, mineral and aggregate use/reserves was not available for this study.

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1.1.7 Soil

1.1.7.1 Relationship with other Plans and Programmes
Besides the ‘big’ environmental issues, such as climate change, loss of biodiversity and desertification, impacts on soil seem often to have a lower priority. This is despite the fact that soil is the foundation of the environment, landscape, wildlife and food production. Nevertheless, on European level the EU 6th Environment Action Programme highlights soil protection as one of main priorities for the future, whereas MPG6 ‘Aggregates Provision’ advises mineral planning authorities how to balance best social, economic and environmental issues related to mineral and aggregates extraction which can impact on soil.

1.1.7.2 Baseline Information

Figure 10: Agricultural Land Classification for South West Hertfordshire.
Southwest Hertfordshire’s soils are mainly classified as grade 3 agricultural land, with some graded 2 soils (see figure 7). A significant proportion is covered by urban areas; a fact it has in common with many areas in the London Arc. Dacorum and St. Albans contain mostly slightly acid loamy and clayey soils with impeded drainage, whereas Three Rivers is characterised by more freely draining, slightly acidy sand soils. Watford, being a borough, is contains mainly built up areas\(^\text{32}\).

Major impacts on soil are soil loss, contamination or compaction which can stem from a variety of sources, such as\(^\text{33}\):

- Erosion;
- New developments (e.g. housing and accompanying infrastructure);
- Nutrient loss and diffuse pollution from agriculture;
- Climate change;
- Air pollution and run-off from roads; and,
- Quarrying.

\textit{Trends}

The East of England Plan proposes to build 83,200 new houses in Hertfordshire (5,200 in Watford, 12,000 in Dacorum, 7,200 St. Albans and 4,000 Three Rivers) by 2021\(^\text{34}\). It is therefore possible that these development pressures could adversely affect soils in the area.

\textit{Data Gaps/ Uncertainties}

More detailed information about local soil properties was not available for this study.

\section*{1.1.8 \textit{Water}}

\subsection*{1.1.8.1 Relationship with other Plans and Programmes}

On an international level, the Millennium Development goals highlight the need to tackle issues, such as climate change, conserving biodiversity and protecting water resources. In Europe, the Water Framework Directive requires Member States to achieve ‘good ecological status’ of inland water bodies by 2015, whereas the EU Nitrates Directive addresses diffuse pollution from agriculture. In England, PPS23 ‘Pollution Control’ and PPG25 ‘Development and Flood Risk’ set out how the planning system can help to reduce pollution of water courses and flood risk.

\footnotesize
\textsuperscript{34} East of England Regional Assembly (2008) "East of England Plan", available at at \url{http://www.go-east.gov.uk/goeast/planning/regional_planning/}

\normalsize
1.1.8.2 Baseline Information

Water is an essential natural resource. It is important that water resources are protected so that the risk of harm to the environment and to human health can be reduced as far as possible. Nitrate and phosphate levels, in particular, need to be monitored closely due to the risk of eutrophication and loss of biodiversity.

For the purpose of this report, data on the chemical and biological quality of rivers, and the percentage of rivers with high phosphate or nitrate concentrations have been collected.

In addition, the number of planning permissions objected to and refused due to flood risk has been collected. The data has been compared against regional data.

Some areas of Hertfordshire suffer from over abstraction of water resources which has adverse impacts on flora and fauna. The proposed new developments in South West Hertfordshire are likely to lead to an increases demand for water.

**Water Quality**

In general, chemical water quality between 1995 and 2004 has improved, and biological water quality has declined (Table 13 and 19).

As of 2008 the chemical quality of Rivers Chess, Colne and Ver are very good, and Biology fluctuates between good and poor among the rivers (2008).

<table>
<thead>
<tr>
<th>Local Authority / Region</th>
<th>1995</th>
<th>2000</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%G</td>
<td>%F</td>
<td>%B</td>
</tr>
<tr>
<td>Watford</td>
<td>52</td>
<td>48</td>
<td>-</td>
</tr>
<tr>
<td>St Albans</td>
<td>54</td>
<td>46</td>
<td>-</td>
</tr>
<tr>
<td>Dacorum</td>
<td>18</td>
<td>74</td>
<td>8</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>24</td>
<td>70</td>
<td>-</td>
</tr>
<tr>
<td>East of England</td>
<td>39.7</td>
<td>47.3</td>
<td>12.8</td>
</tr>
</tbody>
</table>

The chemical water quality in the Three Rivers District improved between 1995 and 2008. The percentage of rivers considered as having good chemical quality was lower than the average for the East of England in 1995 and 2004, and was

---

35 DEFRA e-Digest: http://www2.defra.gov.uk/db/req/govlist.asp
higher than the average in 2000. Despite chemical quality improving between 1995 and 2004, the percentage of rivers considered as having poor chemical quality has increased from 0% to 7%35.

Table 14: Biological Water Quality35

<table>
<thead>
<tr>
<th>Local Authority / Region</th>
<th>1995</th>
<th>2000</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%G</td>
<td>%F</td>
<td>%P</td>
</tr>
<tr>
<td>Watford</td>
<td>34</td>
<td>66</td>
<td>-</td>
</tr>
<tr>
<td>St Albans</td>
<td>55</td>
<td>45</td>
<td>-</td>
</tr>
<tr>
<td>Dacorum</td>
<td>76</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>90</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>East of England</td>
<td>71.0</td>
<td>27.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

The biological water quality in the Three Rivers District declined between 1995 and 2008. The percentage of rivers being considered as having poor or bad water quality has increased35.

Flood Risk

Parts of the District fall within Flood Zone 2, 3a and 3b. The River Chess Valley and River Colne Valley are considered flood plains. In accordance with PPS25, a Level 1 Strategic Flood Risk Assessment was completed for Three Rivers, Watford, Dacorum and St Albans Councils in 2007 to assess flooding issues in the area. Three Rivers have undertaken outline sequential tests in addition to the SFRA.

Table 15 below displays the number of planning permissions objected to and refused on flood risk grounds between 04/2007 and 05/200836. It can be seen that in general more planning permissions were objected to than refused. This may be due to the fact that mitigation measures were introduced to reduce the flood risk36.

36 Environment Agency – High Level Target 5:
Table 15: Planning permissions objected to and refused36.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Watford</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>St Albans</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Dacorum</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

Water Supply

The East of England is the country’s driest region, and water resources are over abstracted in the region. Current and future demands for water cannot be met from within the region37. The Audit commission Local Area profiles (2010) report that the daily domestic water use (per capita consumption, litres) in 2004 was192 litres/day in Dacorum, St Albans, Three Rivers and Watford. No trend information is available for this specific indicator. More recent information from the Hertfordshire Quality of Life Report 2009 identifies that Veolia Water Three Valleys (VWTV) domestic customers without meters maintained 2008’s water usage at an average of 175 litres per person per day in 2009. Water usage by customers with meters fell back to 2007 levels from 153 litres in 2008 to 142 litres per person per day in 2009 (Herts QoL 2009). Three Rivers lies within the River Colne catchment. The majority of the rivers in the Colne catchment are susceptible to low flows due to low groundwater levels, which are increasingly exacerbated by drought conditions and abstractions38. The Chilterns Chalk Streams are particularly susceptible to over abstraction. The Catchment Abstraction Management Strategy (CAMS) for the Colne catchment has identified that the underlying chalk aquifer is assessed as being over-abstracted. The Water Cycle Scoping Study (April 2010) indicates that in relation to a housing growth level of 9,000 homes (2010 – 2031), for potable water supply; waste water and sewerage network capacity; flood risk; and the water environment, the only major constraints are those related to the Maple Lodge waste water treatment works which serve Hemel Hempstead and Kings Langley. However for a higher growth scenario of 17,000 in the same period there would be wider issues including the supply of potable water.

37 http://insighteast.org.uk/Webdocuments/approved/FTPUploads/EAConRSS14WRimpacts.pdf
38 Dacorum Borough Council, St Albans City and District Council, Three Rivers District Council, Watford Borough Council, Welwyn Hatfield Borough Council Water Cycle Study Scoping Study (Hyder, April 2010)
Trends

In general, chemical water quality between 1995 and 2008 has improved, and biological water quality has declined. There appears to be no obvious trend regarding phosphate and nitrate concentrations.

Future baseline

With no definitive direction towards maintaining and enhancing water quality negative or neutral trend is likely in the short term however the quality is unlikely to be maintained to enhanced in the medium to long term, conversely in the absence of strong mechanisms to limit pollution and to address water consumption the water quality and quantity are likely to take a negative trend in the future.

1.1.9 Social Factors

1.1.9.1 Human Health

Relationship with other Plans and Programmes

The planning process can affect the health of the population of the area. An unhealthy population may place increasing demands on the requirement for services and resources (such as doctor's surgeries) whilst the provision of the infrastructure to support healthy lifestyles can be encouraged by the provision of public open space or leisure facilities, the reduction of crime, severance, noise, air pollution and improving the access to services and facilities.

Objectives regarding human health are embodied at the highest tiers of plan making, indeed the EU Sustainable Development Strategy (2001) include, ‘Address threats to public health’, amongst its headline objectives.

At a national level health is tackled through a number of documents, including PPG17 ‘Planning for Open Space, Sport, and Recreation’, which recognises the health and wellbeing value of recreational and open spaces, and PPG13 ‘Transport’, which aims to encourage walking and cycling. However, the primary document relating to human health at this level is the Government Health White Paper – ‘Choosing Health: making Healthier Choices Easier’. This document contains a number of priorities which should be taken into account by the LDF and SA, in particular those relating to ‘increasing exercise’.

Some of the general aims of the Hertfordshire Structure Plan (1991-2011) are to improve quality of life, and to encourage walking/cycling. These aims fit with the Health White Paper priorities, and as part of the Structure Plan, should be disseminated down into Borough and District planning documents.
Baseline Information

Hertfordshire is in general a very healthy county. In the 2001 Census questions were asked for the first time about general state of health and the provision of unpaid care. Of Hertfordshire's population 6.6% have health reported as not good, compared to 7.6% in the Eastern Region and 9.0% in England. The following table indicates the percentage of resident population in each group that classify themselves as being in either good, fairly good or not good health and also provides the percentages of people that have limiting long term illnesses, are of working age and have a limiting long term illness and finally the percentage of households with one or more person with a limiting long term illness. This data is recorded for England and Wales, East of England, Watford, St Albans, Dacorum and Three Rivers.

Table 16: Population breakdown by health group.

<table>
<thead>
<tr>
<th></th>
<th>England and Wales</th>
<th>East of England</th>
<th>Watford</th>
<th>St Albans</th>
<th>Dacorum</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>General health: Good</td>
<td>68.55%</td>
<td>70.35%</td>
<td>72.57%</td>
<td>75.48%</td>
<td>73.28%</td>
<td>73.58%</td>
</tr>
<tr>
<td>General health: Fairly Good</td>
<td>22.23%</td>
<td>22.05%</td>
<td>20.59%</td>
<td>18.62%</td>
<td>20.32%</td>
<td>19.93%</td>
</tr>
<tr>
<td>General health: Not Good</td>
<td>9.22%</td>
<td>7.60%</td>
<td>6.85%</td>
<td>5.90%</td>
<td>6.40%</td>
<td>6.49%</td>
</tr>
<tr>
<td>People with a limiting long term illness</td>
<td>18.23%</td>
<td>16.21%</td>
<td>14.21%</td>
<td>13.08%</td>
<td>13.82%</td>
<td>14.26%</td>
</tr>
<tr>
<td>People of working age with a limiting long term illness</td>
<td>13.56%</td>
<td>11.40%</td>
<td>9.86%</td>
<td>8.59%</td>
<td>9.49%</td>
<td>9.18%</td>
</tr>
<tr>
<td>Households with one or more person with a limiting long term illness</td>
<td>34.05%</td>
<td>30.77%</td>
<td>27.40%</td>
<td>25.39%</td>
<td>27.33%</td>
<td>27.95%</td>
</tr>
</tbody>
</table>

The table below shows the percentages of infant mortality for the specified areas over three time periods, indicating a trend for all the areas, illustrating a decline in infant mortality rates between 1999 and 2003.

Table 17: Infant Mortality Rate.

<table>
<thead>
<tr>
<th>Date</th>
<th>Dacorum</th>
<th>St. Albans</th>
<th>Three Rivers</th>
<th>Watford</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Infant Mortality / 1000 Live Births</td>
<td>Infant Mortality / 1000 Live Births</td>
<td>Infant Mortality / 1000 Live Births</td>
<td>Infant Mortality / 1000 Live Births</td>
</tr>
<tr>
<td></td>
<td>Still Births / 1000 Live Births</td>
<td>Still Births / 1000 Live Births</td>
<td>Still Births / 1000 Live Births</td>
<td>Still Births / 1000 Live Births</td>
</tr>
</tbody>
</table>

40 [http://www.hertslink.org/portal/Observatory/Data%20by%20Subject/Life%20in%20the%20community/Quality%20of%20Life/Quality%20of%20Life%20Indicators/QoL%20%20Infant%20Mortality.xls]
In Three Rivers, 73.58% of the population, when asked to describe their health, classified themselves as being in good general health, and 6.94% classified themselves as having health that is not good.

The recorded figure for the time period of 2003/4 states that the average number of working days lost to sickness, for a member of staff as a proportion of the full time staff in the area of Three Rivers was approximately 7.6. This figure is below the regional average according to the ODPM BVPI indicators.

Three Rivers has an infant mortality rate (per 1000 births) that is lower than all three other areas and recorded a figure of 3.3%. Approximately 9.9% of the people in Three Rivers provide some level of unpaid care according to the figure from 2001 census.

*Trends and future baseline*

A notable trend within these three areas with regard to health indicators are that the proportion of people that describe themselves as being in good health is around 72%, thus approximately just under 30% of each of the areas population have classified themselves as suffering from a below average level of health.

It is not possible to predict the health trend in the district, if would be maintained or would deteriorate. However no evidence exists that with the continuation of current plans and policies, an enhancement in healthy lifestyle is likely.

1.1.9.2 Noise

*Relationship with other Plans and Programmes*

There are a number of EU Directives in place which control noise from transport sources, for example from vehicles and outdoor machinery. EU Directive 2002/49/EC relating to the assessment and management of environmental noise – the Environmental Noise Directive – is the latest piece of European legislation. Its aim is to define a common approach across the European Union to avoid, prevent or reduce the harmful effects of environmental noise from road, rail and air traffic and industry. By 2007 strategic noise maps have to be prepared and by 2008 action plans have to be developed for how to reduce environmental noise where necessary. In a national context, PPG 24 ‘Noise’ sets out how the planning system can be used to minimise the adverse impacts of noise and PPG 13 ‘Transport’ aims to reduce the need for travel, possibly leading to a reduction of noise from transport.
The number of noise complaints in Hertfordshire has risen in the 1990s, with an increase of 2.3% between 98/99 and 99/00. In 1999/2000 local councils in Hertfordshire received over 156,860 complaints about domestic noise. The numbers of complaints for both periods is illustrated in Figure 6⁴¹.

**Figure 6: Noise Complaints in Hertfordshire per 1000 population**

![Graph showing noise complaints per 1000 population]

Figure 7 illustrates the main categories of complaint made to Hertfordshire local councils in 2001/2. The total number of complaints in 2001/2 increased by 5% from the previous year with domestic noise being the largest category by far.

**Figure 7: Categories of noise complaints made to Hertfordshire Local Authorities in 2001/2**

![Pie chart showing categories of noise complaints]

The largest group of disorder incidents in Three Rivers was “community problems”, which included noise⁴². Hence, in light of this, reducing noise has become a priority for action in the area.

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1.1.9.3 Population

Relationship with other Plans and Programmes

Population primarily relates to demographics, about which there are very few specific plans, policies or strategies. However, many other types of plans and policies will have secondary impacts on the population, e.g. housing strategy policies on accommodation for the elderly. Therefore, when taking into account effects on the SEA/SA topic of ‘population’, cross reference should be made to plans covered within plans and policies relating to housing, education, social deprivation, crime (safety), recreation, leisure and sports.

Objectives relating specifically to demographics (not attempting to alter them, but rather to adapt to changes in future demographics), may be found in documents focusing on sustainable development. An example can be seen in the EU Sustainable Development Strategy (2001), which includes an objective specifically on ‘dealing with the economic and social implications of an ageing society’.

Baseline Information

The population of England as a whole is growing. This is due to people living longer, and the relocation of people into England from other parts of the UK, Europe and beyond. Implications will be a growing proportion of the elderly and a decreasing proportion of young people.

The total population in Hertfordshire has been recorded at approximately 1,033,977. Table 18 below shows growth rates in Watford, St Albans, Dacorum and Three Rivers.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertfordshire</td>
<td>-</td>
<td>1,033,977</td>
<td>975,829</td>
<td>950,760</td>
<td>6.0%</td>
</tr>
<tr>
<td>Watford</td>
<td>-</td>
<td>79,729</td>
<td>74,566</td>
<td>73,927</td>
<td>6.9%</td>
</tr>
<tr>
<td>St Albans</td>
<td>-</td>
<td>128,982</td>
<td>126,202</td>
<td>124,317</td>
<td>2.2%</td>
</tr>
<tr>
<td>Dacorum</td>
<td>-</td>
<td>137,807</td>
<td>132,240</td>
<td>128,565</td>
<td>4.2%</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>86, 400</td>
<td>82,843</td>
<td>78,457</td>
<td>77,755</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

Table 19 below shows the estimates of resident population from the 2001 census. This estimate for Hertfordshire suggests a rise in population of 6% since the 1991 census.
Table 19: Population Growth by age group and gender Source: Census 2001 data.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
<th>0-14</th>
<th>15-29</th>
<th>30-44</th>
<th>45-59</th>
<th>60-74</th>
<th>75-89</th>
<th>90+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertfordshire</td>
<td>1,033,977</td>
<td>505,059</td>
<td>528,918</td>
<td>201,880</td>
<td>182,951</td>
<td>248,799</td>
<td>196,909</td>
<td>130,090</td>
<td>67,093</td>
<td>6,255</td>
</tr>
<tr>
<td>2001</td>
<td>48.80%</td>
<td>51.20%</td>
<td>19.50%</td>
<td>17.70%</td>
<td>24.10%</td>
<td>19.00%</td>
<td>12.60%</td>
<td>6.80%</td>
<td>0.60%</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>49.00%</td>
<td>51.00%</td>
<td>18.80%</td>
<td>21.80%</td>
<td>22.40%</td>
<td>17.40%</td>
<td>13.30%</td>
<td>5.90%</td>
<td>0.40%</td>
<td></td>
</tr>
<tr>
<td>Watford</td>
<td>79,726</td>
<td>39,227</td>
<td>40,499</td>
<td>15,476</td>
<td>16,586</td>
<td>20,405</td>
<td>13,453</td>
<td>8,696</td>
<td>4,604</td>
<td>506</td>
</tr>
<tr>
<td>2001</td>
<td>49.20%</td>
<td>50.80%</td>
<td>19.40%</td>
<td>20.80%</td>
<td>25.60%</td>
<td>16.90%</td>
<td>10.90%</td>
<td>5.80%</td>
<td>0.60%</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>49.10%</td>
<td>50.90%</td>
<td>19.10%</td>
<td>25.00%</td>
<td>22.00%</td>
<td>15.80%</td>
<td>11.60%</td>
<td>6.10%</td>
<td>0.40%</td>
<td></td>
</tr>
<tr>
<td>St Albans</td>
<td>129,005</td>
<td>63,414</td>
<td>65,591</td>
<td>25,003</td>
<td>21,562</td>
<td>31,947</td>
<td>25,303</td>
<td>16,228</td>
<td>8,173</td>
<td>789</td>
</tr>
<tr>
<td>2001</td>
<td>49.20%</td>
<td>50.80%</td>
<td>19.40%</td>
<td>16.70%</td>
<td>24.80%</td>
<td>19.60%</td>
<td>12.60%</td>
<td>6.30%</td>
<td>0.60%</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>49.10%</td>
<td>50.90%</td>
<td>18.30%</td>
<td>20.90%</td>
<td>23.10%</td>
<td>18.30%</td>
<td>13.00%</td>
<td>6.00%</td>
<td>0.40%</td>
<td></td>
</tr>
<tr>
<td>Dacorum</td>
<td>137,799</td>
<td>67,797</td>
<td>70,002</td>
<td>27,153</td>
<td>23,436</td>
<td>33,444</td>
<td>26,829</td>
<td>17,258</td>
<td>8,936</td>
<td>743</td>
</tr>
<tr>
<td>2001</td>
<td>49.20%</td>
<td>50.80%</td>
<td>19.70%</td>
<td>17.00%</td>
<td>24.30%</td>
<td>19.50%</td>
<td>12.50%</td>
<td>6.50%</td>
<td>0.50%</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>49.10%</td>
<td>50.90%</td>
<td>19.30%</td>
<td>21.60%</td>
<td>23.20%</td>
<td>16.80%</td>
<td>13.30%</td>
<td>5.40%</td>
<td>0.40%</td>
<td></td>
</tr>
<tr>
<td>Three Rivers</td>
<td>82,848</td>
<td>40,062</td>
<td>42,786</td>
<td>16,047</td>
<td>13,374</td>
<td>19,002</td>
<td>16,813</td>
<td>10,958</td>
<td>6,014</td>
<td>327</td>
</tr>
<tr>
<td>2001</td>
<td>48.40%</td>
<td>51.60%</td>
<td>19.40%</td>
<td>16.10%</td>
<td>22.90%</td>
<td>20.30%</td>
<td>13.20%</td>
<td>7.30%</td>
<td>0.40%</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>48.70%</td>
<td>51.30%</td>
<td>18.10%</td>
<td>19.80%</td>
<td>21.90%</td>
<td>18.30%</td>
<td>14.60%</td>
<td>6.90%</td>
<td>0.20%</td>
<td></td>
</tr>
</tbody>
</table>

Three Rivers population has grown from 82,840 in 2001 to 86,400 in 2008. The largest proportions of people are aged between 35 and 39, which is a trend amongst the regions.

The majority of the population in the Three Rivers District is white, with figures standing at 92.3% of people qualifying for this category. However, the area stands with the second highest proportion of Asians out of the four areas and holds a figure of 4.7%.

Trends

Three Rivers population has grown from 82,840 in 2001 to 86,400 in 2008. Population projections indicate that the population as a whole will increase by 1.8% by 2021. The majority of the population in each of the areas are concentrated between the ages 25 and 39. The majority of the population in each of the four areas are white people; however the Asian population has shown the fastest and greatest rate of growth since the 1991 census in all sets of data.

1.1.9.4 Housing

Relationship with other Plans and Programmes

A home is one of the most basic human needs. New housing of the right type and in the right location can help facilitate social inclusion. Ensuring that there is provision to meet the variety of needs within the community and a choice of house types, size and affordability within sites can foster a sense of place.

43 2001 census data from NHS website - [http://www.phinhetts.nhs.uk/hp/Hertfordshire_age2.htm](http://www.phinhetts.nhs.uk/hp/Hertfordshire_age2.htm)
The European Spatial Development Perspective (1999) establishes a number of common objectives and concepts adopted by EU member states that set the high level framework for national and hence regional/local spatial plans. Economic and social cohesion are one of the main goals, and housing plays an important role in the achievement of that goal. The main national guidance relating to the provision of new housing on a regional basis is PPG3 ‘Housing’. This guidance emphasises the importance of mixed use developments, ensuring integration of industrial, commercial, and residential property through spatial and transport plans, in order to minimise dependency on road transport. This land use integration will also go some way toward achieving the social deprivation and accessibility objectives within the plan.

At a regional level, the Sustainable Communities: Building for the Future – Communities Plan (2003), informs the conversion of RPGs into RSSs incorporating increased targets for brown field development and affordable housing. These aims are indeed incorporated into the RSS through the East of England Plan. The targets set out in the East of England Plan are provided for within the Revised Regional Housing Strategy for the East of England 2005-2010. Although one of the aims of the Strategy is to ensure that housing serves to improve the region’s health and well-being and reduce inequalities, the SA should ensure that housing targets are implemented in a sustainable fashion within the LDF.

Baseline Information

Additional housing is needed in the region. Access to housing is an acute problem in parts the area and many council homes are in need of significant repair. Government Household Projections based on the 2001 Census suggest that housing demand will be around 17% higher than was estimated by the 1996 Based Household Projections, although at the Regional level they are broadly in line with recent build rates.

Three Rivers District Council recorded a relatively high percentage of homes that are unfit for living at the start of 2003/4. Being 7% above average, 34% of the areas Local Authority homes were classified as unfit compared to 26% for Watford. The East of England Plan has placed a requirement on Three Rivers to deliver 4,000 dwellings in the District between 2001 and 2021.

The Housing Needs Survey (2001) recorded that some 90% of households said their accommodation was adequate for their needs, around 10% said that it was inadequate.

Trends

Three Rivers had the highest proportion of houses that were unfit for habitation at the start of 2003/04, closely followed by Watford, but the other two authorities were well below the regional average for this indicator. A SHLAA carried out for
South West Hertfordshire considered 532 potential housing sites in total in Three Rivers, of which 109 were considered suitable for further assessment on the basis of policy considerations and physical or environmental factors. The study estimates that there is potential to deliver 3661 new homes in Three Rivers over the twenty-year period from LDF adoption. Of this potential 1236 dwellings could be delivered within urban areas and 2425 on Greenfield.

Future baseline

In order to meet the housing targets, assuming existing policies only prevail, there will be a loss in top soil from green field sites, affecting environmental aspects. Similarly issues such as affordable housing and delivery of housing stock fit for living may not be sufficiently addressed if the current trends continue (i.e., in a do-nothing scenario).

1.1.9.5 Crime

Relationship with other Plans and Programmes

Crime is to some extent covered intrinsically in plans and policies that aim to increase social cohesion. Hence plans and policies tackling social inclusion and accessibility will all be relevant. A good example of this can be seen in the Regional Social Strategy: A Strategy to Achieve a Fair and Inclusive Society in the East of England. Its strategic objectives include ‘to develop social networks, community assets and promote community cohesion’, which when tackled would alleviate some of the root causes of crime.

This is seen again at a higher level in the European Spatial Development Perspective (1999) which calls for economic and social cohesion. Objectives and aims relating more directly to crime should be present in community strategies at the district and borough level.

Baseline Information

Within the UK as a whole, vehicle crime and numbers of burglaries dropped between 2001 and 2003 although violent crime also rose at the national level. The table below shows the trend in crimes between 2003 and 2006.

Table 20: Crime Figures

<table>
<thead>
<tr>
<th>Date</th>
<th>Crime</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005/06</td>
<td>Domestic burglaries</td>
<td>11.06</td>
</tr>
<tr>
<td>2004/05</td>
<td>Domestic burglaries</td>
<td>11.69</td>
</tr>
<tr>
<td>2003/04</td>
<td>Domestic burglaries</td>
<td>13.82</td>
</tr>
<tr>
<td>2005/06</td>
<td>Violent offences</td>
<td>11.16</td>
</tr>
<tr>
<td>2004/05</td>
<td>Violent offences</td>
<td>11.46</td>
</tr>
<tr>
<td>2003/04</td>
<td>Violent offences</td>
<td>9.49</td>
</tr>
</tbody>
</table>

(Source: Audit Commission).
This table indicates that crime has slightly increased over the three year period for violent offences, but has decreased for burglaries. The increase in crime data may be attributed to adoption of National Crime Recording Standard which is more victim-led and victim-orientated. In addition to this, previous crime reports were not recorded unless there was evidence.

BVPI statistics record violent offences in a public area in Three Rivers as 5.3 per 1000 population, a value that is almost half of the regional average. With regards to vehicle crime, Three Rivers had 2.95 vehicle crimes per 1000 population in 2005/06 and has decreased between 2003 and 2006.

BVPI statistics show that in 2007/08, there were 36.90 racial incidents per 100,000 population in Three Rivers. This is lower than the Hertfordshire figure of 127.62 racial incidents per 100,000 population.

Trends

Domestic burglary levels have decreased between 2003 and 2006, but violent offences have increased during this time period.

The percentage of residents who think that people being attacked because of their skin colour, ethnic origin or religion is a very big of fairly big problem in the Three Rivers area at 22.36% in the period 2003/04. 83.47% of residents think that for their local area, over the past three years that community activity have got better or stayed the same.

1.1.9.6 Accessibility

Relationship with other Plans and Programmes

Basic facilities are an important part of our communities. They provide essential services such as food and medical provisions. They also contribute to the sense of place in communities and provide a focal point for community interactions. They also provide employment, often for locally based people. Limiting access and availability to these services can make people feel socially excluded and reduce interactions in the community.

The European Spatial Development Perspective (1999) establishes a number of common objectives and concepts adopted by EU member states that set the high level framework for national (and hence regional/local spatial plans). Economic and social cohesion are one of the main goals, and accessibility (to services and employment) plays an important role in the achievement of that goal. The emphasis on accessibility is continued at this high level by the EU Sustainable Development Strategy. The strategy refers to accessibility directly through ‘improving transport systems and land use management’, and indirectly through ‘dealing with the economic and social implications of an ageing society’ (the latter
in terms of easy access to amenities including hospitals, in which public transport and mixed use planning plays a major role).

PPG13 ‘Transport’ aims to encourage public transport use, walking and cycling, through managing the pattern of urban growth (and other travel generating development). This will need to be addressed directly within the LDF and should contribute towards the European goals of increasing accessibility to amenities and services for all social and age groups.

The East of England Plan is the overarching regional document relevant to accessibility. It provides the statutory framework for local development plans over the next 20 years, and includes objectives on improving access to employment and services and delivering more integrated patterns of land use. The Regional Social Strategy (2004) develops upon these aims in six strategic objectives which include: promoting access to work and improving access to services, especially for disadvantaged people.

The Hertfordshire Local Transport Plan 2 (LTP 2) objectives includes objectives on developing transport systems that provide access to employment, shopping, education, leisure and health facilities for all (including those without a car and those with impaired mobility). The LDF should take account of these transport objectives, and attempt to provide complimentary land use planning objectives to lie alongside them, e.g. mixed use planning, siting developments next to existing public transport facilities.

Baseline Information

Hertfordshire’s Local Transport Plan (2006/7) highlights that:

- Hertfordshire has more than 1900 miles of public right of ways, providing access to services, facilities and recreational walks and cycle paths;

- The number of people killed and seriously injured in road accidents, and children killed and seriously injured have reduced by 25% (2000-2003), and the number of slight casualties by 13%.

- The County Council has seen a trend of declining bus use in recent years, which it is seeking to reverse through the Bus, Rail and Intalink Strategies.

BPVI indicators provide the following information on a regional level:

- The percentage of principle roads in the region, in need of repair stood at 8.7% in 2003/4, slightly lower than the English average of 9.8%;
- Local buses in the region see less patronage than other regions, at just over 14 million passenger journeys per year compared to an average per region in England of over 23.5 million (in 2003/4);

- The percentage length of footpaths and other rights of way which are easy to use in the region stood at 79.3%, significantly higher than the England average of 68.9%; and,

- The proportion of pedestrian crossings with disabled facilities within the region is similar to the English average, at 84.9% and 82.4% respectively.

At 2007/2008, 96% of Three Rivers local authority buildings were classified as suitable for and accessible by disabled people. This figure is the highest of the four authorities.

**Trends**

Three Rivers has a high proportion of local authority buildings that are classified as suitable for and accessible by disabled people.

**Future baseline**

Building access for the disabled may be advanced through the Disabled Discriminatory Act in most buildings however given less public transport patronage accessibility to key services is likely to remain as current baseline in the future, or may worsen for people with no car access, including people with disabilities. Therefore in a business as usual scenario accessibility issues are likely to worsen in the medium to the long term.

1.1.9.7 **Social Deprivation**

**Relationship with other Plans and Programmes**

The European Spatial Development Perspective (1999) establish a number of common objectives and concepts adopted by EU member states that set the high level framework for national (and hence regional/local spatial plans). Economic and social cohesion are one of the main goals, and as such, place tackling social deprivation high on the agenda.

The main national guidance relevant to social deprivation is: PPG3 ‘Housing’, which emphasises the importance of mixed use developments, and ensuring integration of industrial, commercial, and residential property through spatial and transport plans. This, alongside PPG13 ‘Transport’, aims to improve access to amenities, services, and employment opportunities for all social and age groups.
England’s Rural Strategy (2004) includes as one of its three key policies: ‘Social Justice for All – tackling social exclusion wherever it occurs and providing fair access to services and opportunities for all rural people’.

The East of England Plan is the overarching regional document relevant to social deprivation. It provides the statutory framework for local development plans over the next 20 years, and includes objectives on improving social inclusion, and regeneration of disadvantaged areas. The Regional Social Strategy (2004) develops upon these aims in six strategic objectives which include: reducing poverty and income inequalities and reducing social exclusion of older people.

Baseline Information

The geographical spread of deprivation across Hertfordshire can be gauged by using the Government’s Indices of Deprivation 2004 (ID2004). These rely on Census and administrative data from 2001 for the Census’s lower-layer Super Output Areas (SOAs). There are 32,482 of these in England, as opposed to the 8,414 wards used for the Indices of Deprivation 2000. In Hertfordshire there were estimated to be 82,559 people in the income deprived category. This represents around 8% of residents. For employment deprivation the number is 31,841. Hertfordshire has over 15% of the total numbers of income deprived in the region and over 14% of the employment deprived. As Hertfordshire has around 19% of the region’s residents, it can be concluded that these forms of deprivation are somewhat less prevalent in Hertfordshire than in the region as a whole.44

Three Rivers ranks 308th out of 354 local authority areas in England on the 2004 Index of Multiple Deprivation rankings (A rank of 1 being the most deprived). This compares to a ranking of 321 in the equivalent 2000 report.

The percentage of economically active people from ethnic minorities is recorded at 8%, which is 3% above the regional average. 9% of Three Rivers Disabled population are economically active, which is just below the regional average of 11%.

Trends and future baseline

Levels of deprivation in Three Rivers has increased between 2000 and 2004, however it still remains one of the most affluent Local Authority areas.

The Local Plan and other regional economic policies are likely to help maintain current trends in employment and wealth in the short term. However long term trends are unlikely to be positive or neutral if the business as usual scenario continues.

44 Hertfordshire Local Economy Assessment (2004)
1.1.9.8  Recreation, Sport and Leisure

Relationship with other Plans and Programmes

The way in which green spaces are treated within land-use development documents are vital to an areas recreation, leisure and sports capacity. National guidance exists in the form of PPG17 ‘Planning for Open Space, Sport, and Recreation’. This guidance acknowledges that the recreational quality of opens spaces can be eroded by insensitive development, and therefore local authorities should weigh up any benefits being offered to the community against the loss of open space that will occur (and the benefits that it too provides to the local community).

All plans and policies that relate to the improving of human health through exercise are relevant to this section. This strong link between recreation/sport and health is illustrated within the Health White Paper (2004), Choosing Health: Making Healthier Choices Easier, with one of its priorities being ‘increasing exercise’. At a more regional level, the Hertfordshire Sustainability Guide (2003) aims to ‘promote healthier lifestyles’ alongside, ‘protecting, providing, and improving open spaces’.

Baseline Information

The number of visits to a museum per 1000 population in Three Rivers has no recorded value in the BVPI data. Three Rivers has recorded that 23% of residents were satisfied with local authority provided museums in 2006/2007 in comparison to 100% satisfaction with Hertfordshire County Council in 2003/04. Three Rivers45 has recorded approximately 11 sports and leisure facilities in its area.

Trends and future baseline

Three Rivers has no recorded value for the number of visits to a museum per 1000 population. No future trend can be predicted for on a business as usual scenario.

Data Gaps/Uncertainties

No data on museum visits

1.1.9.9  Disability Allowance

Relationship with other Plans and Programmes

The Disability Discrimination Act came into force in October 2004. The relevant quotes from the 175-page Code of Practice are:

45 http://www.threerivers.gov.uk/Default.aspx/Web/LeisureandCulture
2.2 (p7): “The Disability Discrimination Act makes it unlawful for a service provider to discriminate against a disabled person by refusing to provide any service which it provides to members of the public.”; and,

4.7 (p39): “From 1st October 1999 a service provider has to take reasonable steps to change a practice which makes it unreasonably difficult for disabled people to make use of its services.”.

This will have consequences for many types of commercial and industrial developments, and land-use development plans will need to take into account these requirements at their most basic level.

Baseline Information

The Disability Living Allowance is paid to people under 65, who are disabled, and need help with personal care and/or getting around. In August 2003, 1,780 people in Three Rivers received this allowance, which represented 3% of all people under the age of 65 living in the area, this compared with 14% in England and Wales.

In August 2003, 1,770 people in Three Rivers between the ages of 16 and 65 claimed Incapacity Benefit or Severe Disability Allowance because they had been unable to work for at least 28 consecutive weeks because of illness or disability. Of these people, 9% were under the age of 30.

Trends

No trend data available

1.1.9.10 Healthcare

Relationship with other Plans and Programmes

Health is a universal basic human need. High levels of public health lead to fitter, happier and healthier people. Health services are nationally high on citizens’ list of political priorities. Other benefits include employment provision and contribution to the local economy, training and research opportunities, reduced burden on social services and public finances. Addressing the effects to public health, and, dealing with the social and economic implications of an ageing society, are both key objectives of the EU Sustainable Development Strategy (2001), and will both have implications on future healthcare provision.

Baseline Information

Hertfordshire have pockets of poverty in certain wards but appears to be one of the more healthy counties of England, with life expectancy of 77 years for men
and 81 years for women. **Error! Reference source not found.** shows the life expectancy in the four areas.

### Table 21: Life expectancy (source: Health Profiles of Hertfordshire\(^4^6\)) 2001

<table>
<thead>
<tr>
<th></th>
<th>Life expectancy</th>
<th>Rank within Hertfordshire</th>
<th>Rank within UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Watford</td>
<td>75.02</td>
<td>79.29</td>
<td>10</td>
</tr>
<tr>
<td>St Albans</td>
<td>78.12</td>
<td>81.65</td>
<td>2</td>
</tr>
<tr>
<td>Dacorum</td>
<td>76.55</td>
<td>80.99</td>
<td>6</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>78.72</td>
<td>82.66</td>
<td>1</td>
</tr>
</tbody>
</table>

The 2001 Census recorded voluntary care, which is help or support for family members, friends, neighbours or others affected by long-term physical or mental ill-health or disability, or problems relating to old age. In Three Rivers, 10% of the resident population provided unpaid care, which is the same as England and Wales. Of the people providing unpaid care, 14% gave 50 hours or more per week; this compared with 21% in England and Wales.

**Trends**

All four areas either provided care to a level of or just below the level recorded for England and Wales.

1.1.9.11 Education

**Relationship with other Plans and Programmes**

The European Spatial Development Perspective (1999) establish a number of common objectives and concepts adopted by EU member states that set the high level framework for national (and hence regional/local spatial plans). Economic and social cohesion are one of the main goals, and education plays an important role in the achievement of that goal.

At a regional level, the Regional Social Strategy (2004) includes strategic objectives covering; improving life chances of children from disadvantaged families, and improving the life chances of adults through learning and skills development. These objectives can be tackled through the LDF by increasing accessibility not only to employment opportunities but also to education facilities.

**Baseline Information**

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\(^{46}\) Health Profiles of Hertfordshire -
http://www.nhsinherth.nhs.uk/ha/publications/ahr2001/Profile%20Report%202001%20(C1).pdf
The proportion of people of working age qualified to GCSE A level equivalent or higher in the East of England was 47.6% in 2003, this was below the UK average of 50 per cent. The East of England had the lowest percentage of higher education students who were studying in their own area, 41% in 2002/03. In Hertfordshire the proportion of pupils achieving at least level 4 at Key Stage 2 (KS2) (the anticipated level of attainment for pupils aged 11 in their final year at primary school) changed from 75% in 1999 to 78% in 2004 for Mathematics and from 78% to 83% in respect of English. There are approximately 45,893 students in Hertfordshire, 19,061 of which are economically active. Table 22 below shows the percentage of people aged 16-74 that have no qualifications in the respective areas and also highlights the figure for the East of England for comparison.

**Table 22: Percentage of people aged 16-74 that have no qualifications.**

<table>
<thead>
<tr>
<th>People aged 16-74 with no qualifications</th>
<th>East of England</th>
<th>Watford</th>
<th>St Albans</th>
<th>Dacorum</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.9%</td>
<td>23.7%</td>
<td>17%</td>
<td>24%</td>
<td>21.8%</td>
<td></td>
</tr>
</tbody>
</table>

86.1%, which translates as 8,099, of 18-24 year olds were reported to be in full time education or employment in January 2001. 74% of 15 year old pupils in schools maintained by local authority are achieving 5+ GCSEs, grades A*-C in Three Rivers. This makes this area the strongest in this field when compared to the other three areas we have been looking at. It also places the area approximately 29% above the English average.

*Trends*

No trend data available

**1.1.10 Economic Factors**

**1.1.10.1 Economic Activity**

*Relationship with other Plans and Programmes*

The UK Government’s approach to sustainable development recognises that a better quality of life for all includes economic growth and employment as well as more widely available goods and services. This requires the creation of stable and competitive economy. Over the past three decades, UK output and inflation has been highly volatile. Economic instability has significant costs, making it difficult for individuals and firms to plan and invest, with damaging effects on long-term economic growth. It involves social costs that often fall heavily on people on lower incomes. The sensible response to this kind of economic uncertainty and turbulence is an emphasis on resilience - that is, on enabling the economy to cope with a range of possible shocks and changes. Economic resilience entails maintaining portfolios of diverse options and solutions rather than aiming for a
single optimum, and maintaining the capacity of smaller and simpler subsystems to perform basic tasks if larger and more complex systems fail.

Relevant national guidance exists through a number of Planning Policy Guidance Notes. PPS4 ‘Planning for Sustainable Economic Growth’ provides guidance on the provision in planning for economic development alongside respect for the environment. This document also promotes a ‘town centre first’ sequential approach to development with the aim of creating thriving town centres that provide a range of facilities for local people. It also discusses enhancement of the quality of life and the environment in rural areas.

Tourism has been and increasingly will be an important component of the local economy. PPG21 related to tourism outlines the economic significance of tourism along with its potential environmental impacts. The combination of these two factors makes it an important consideration for any land-use plans.

The importance of economic growth as a key pillar within sustainable development is illustrated at the regional level by the Sustainable Development Framework for the East of England (2001). One of the Framework’s key objectives is for the achievement of growth in a balanced way. This theme is adopted by the East of England Plan, which has objectives relating to increased social inclusion, prosperity and employment growth (through increased access to employment opportunities and increasing the vitality of town centres).


Baseline Information

Employment rates in the region remain high. The region however needs to do better in its progress towards National Learning Targets. In addition a significantly lower proportion of employees in the Region receive job-related training than the UK average. As in the rest of the country, women are also receiving less job-related training than men.
Table 23 below shows the percentages of economic activity levels for all four authorities and also the figures for the county as a whole to enable comparison and identify targets at a local level last updated in 2005.
Table 23: Economic activity⁴⁷.

<table>
<thead>
<tr>
<th></th>
<th>Hertfordshire</th>
<th>Watford</th>
<th>St Albans</th>
<th>Dacorum</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economically Active</strong></td>
<td>89.80%</td>
<td>90.70%</td>
<td>87.60%</td>
<td>90.20%</td>
<td>87.90%</td>
</tr>
<tr>
<td><strong>Economically Inactive</strong></td>
<td>10.20%</td>
<td>9.3</td>
<td>12.40%</td>
<td>9.80%</td>
<td>12.10%</td>
</tr>
<tr>
<td><strong>Students (economically active or inactive)</strong></td>
<td>5.60%</td>
<td>5.2</td>
<td>6.80%</td>
<td>5.40%</td>
<td>6.60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hertfordshire</th>
<th>Watford</th>
<th>St Albans</th>
<th>Dacorum</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economically Active</strong></td>
<td>70.40%</td>
<td>72.60%</td>
<td>70.20%</td>
<td>71.10%</td>
<td>67.60%</td>
</tr>
<tr>
<td><strong>Economically Inactive</strong></td>
<td>29.60%</td>
<td>27.40%</td>
<td>29.80%</td>
<td>28.90%</td>
<td>32.40%</td>
</tr>
<tr>
<td><strong>Students (economically active or inactive)</strong></td>
<td>9.20%</td>
<td>5.60%</td>
<td>7.80%</td>
<td>5.90%</td>
<td>7.20%</td>
</tr>
</tbody>
</table>

Table 24 shows the percentage of long term unemployment that prevails in the four authorities.

Table 24: Long term unemployment 2005

<table>
<thead>
<tr>
<th></th>
<th>Hertfordshire</th>
<th>Watford</th>
<th>St Albans</th>
<th>Dacorum</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long Term Unemployed</strong></td>
<td>22.41%</td>
<td>25.60%</td>
<td>18.35%</td>
<td>20.35%</td>
<td>25.44%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Hertfordshire</th>
<th>Watford</th>
<th>St Albans</th>
<th>Dacorum</th>
<th>Three Rivers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long Term Unemployed</strong></td>
<td>26.92%</td>
<td>24.34%</td>
<td>25.43%</td>
<td>24.10%</td>
<td>26.69%</td>
</tr>
</tbody>
</table>

Table 25 shows income support claimants in Hertfordshire and then Watford, St Albans, Dacorum and Three Rivers.

Table 25: Income support claimants 2005

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>%</th>
<th>Pensioners (MIG)</th>
<th>Disabled</th>
<th>Lone Parents</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertfordshire</td>
<td>44550</td>
<td>100</td>
<td>21510</td>
<td>10825</td>
<td>10430</td>
<td>2085</td>
</tr>
<tr>
<td>Watford</td>
<td>3820</td>
<td>8.6</td>
<td>940</td>
<td>940</td>
<td>920</td>
<td>225</td>
</tr>
<tr>
<td>St Albans</td>
<td>4265</td>
<td>9.6</td>
<td>2020</td>
<td>1150</td>
<td>895</td>
<td>200</td>
</tr>
<tr>
<td>Dacorum</td>
<td>5765</td>
<td>13</td>
<td>2795</td>
<td>1385</td>
<td>1340</td>
<td>245</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>3215</td>
<td>7.2</td>
<td>1635</td>
<td>770</td>
<td>770</td>
<td>145</td>
</tr>
</tbody>
</table>

1.1.10.2 Employment

Relationship with other Plans and Programmes

See relevant section under Economic Activity.

Baseline Information

The claimant count for Hertfordshire at January 2010 is 20,303, a proportion of 3.0%. Over the last year the number of claimants in Hertfordshire increased by 6,080 (42.8%).

The claimant count for Three Rivers\(^{48}\) at January 2010 was 1,344 (2.5%) compared to 875 in January 2009. This is the third lowest count in Hertfordshire, and is below the East of England (3.6%) and UK (4.3%) levels.

Data taken from the Hertfordshire Observatory shows that the proportion of people who qualify as being of working age who are in employment has fallen over the time period between February 2001 and February 2003, from 83.6% to 76.6%.

Trends

There was a declining trend for the unemployment claimant level figures in Three Rivers. More recently, figures have been rising as a result of the recession.

1.1.10.3 Economic Footprint

Relationship with other Plans and Programmes

See relevant section under Economic Activity.

Baseline Information

Over the period 2003-2009, GVA growth in the county was expected to average 3% pa, faster than the average for the East of England (2½% pa) and UK (2½% pa). As in the rest of the UK, growth over this period was expected to be fuelled by services, with growth in manufacturing only averaging 1½% pa, which is slower than the growth expected in manufacturing in the East of England (3% pa) and UK (2½% pa) as a whole.

Employment growth in the county is expected to be driven by financial & business services, at 2½% pa over 2003-2009, which is faster than the growth expected in the East of England (1½% pa) and UK (1½% pa) over the same period.

The Government’s Index of Deprivation (2004) gives information on the numbers considered income deprived and employment deprived. The actual numbers of people in the income deprived and employment deprived\footnote{4} categories, on which these indices are based, are reported as the ‘Income Scale’ and the ‘Employment Scale’ (using mid 2001 estimates). An analysis of the results for the four areas was included in the Hertfordshire Local Economy Assessment (2004):

Three Rivers accounts for under 6\% of Hertfordshire’s GVA (Gross Value Added). Over 2003-2009, GVA in the district was expected to underperform the county, with growth of 2½% pa compared with around 3\% pa. GVA £ per head in Hertfordshire increased in 1998 from £15,732 to £18,578 in 2001. Manufacturing accounts for a slightly smaller proportion of GVA than in the county as a whole. Growth is expected to be slower, when compared with the county, in both manufacturing and services. Construction accounts for 20\% of employment in Three Rivers, compared with the county average of 9\%. Employment in the district is expected to grow by ½% pa over 2003-2009, slower than the average growth expected in the county (½% pa). According to the Income Scale, Three Rivers had 5,779 people affected by income deprivation. This represented 7\% of the resident population. According to the Employment Scale, Three Rivers had 2,249 employment deprived people. This represented 4.5\% of the population of working age. On both proportional counts Three Rivers ranks eighth among the ten districts.

\textit{Trends}

Three Rivers contributes 6\% towards Hertfordshire’s GVA. The percentage of the working age population who are in employment in Three Rivers has dropped from 78\% in 2004 to 75.4\% in 2006. The percentage of Job Seekers allowance claimants who have been out of work for more than a year has dropped from 11.8\% in March 2004 to 11.3\% in March 2006 but increased in 2009 due to the economic recession.

\textit{Future baseline}

In a business as usual scenario, given the current economic climate, without strong employment, retail and other economic development options the trend is likely to move in a negative direction in the medium to the long term; however as the regional economic strategies will influence the district short term trends are difficult to predict.

\footnote{4} A person is defined as employment deprived if they want to work but are excluded from the labour market through unemployment, sickness or disability.
1.1.10.4 Enterprise and Innovation

Relationship with other Plans and Programmes

See relevant section under Economic Activity.

Baseline Information

Hertfordshire has a high proportion of registered businesses in relation to its population (78.1 per 10,000 residents aged 16+ at 2008).

Businesses in Three Rivers accounted for 8.2% of the total businesses in the county in 2003. The number of VAT registered businesses in Three Rivers increased every year during 1997-2003. It varied every year between 2003 and 2005 and then steadily increased between 2005 and 2007. In 2002, the majority of business units were micro (1-10 employees) and over a third were in the banking, finance and insurance sectors.

Trends

Last three years seem to have increased registration of businesses.
1.2 Conclusions

Appendix 1 provides a comprehensive analysis of relevant plans and programmes and key points, under a series of topics have been identified in Section 2.3 to 2.16 above. The challenge is for the LDF to incorporate these key principles, without simply repeating higher tier policy, having regard to the local context.