

## 6: Environmental sustainability of the economy

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### Section 6: Key findings

- A key challenge for the *Hampshire Economic Area* looking ahead – as indeed for all local areas as a result of EU policy – is to sustain economic growth and prosperity whilst reducing the consumption of resources and the emissions of carbon dioxide.
- The *Hampshire Economic Area* performs well against regional and national averages for carbon emissions – although performance does vary across sectors with lower industry and commercial emissions, higher transport emissions and similar household emissions. *Districts in South Hampshire* produce the lowest per capita carbon emissions of the three sub-areas.
- Currently, the relationship between GVA per capita and emissions of carbon dioxide per capita across the *Hampshire Economic Area* is similar to that across the South East. There are sub-area variations, however. Worst performing on this metric are *Districts in Central Hampshire/New Forest* while *Districts in South Hampshire* perform relatively well. A key explanatory factor surrounds patterns and modes of commuting.
- Climate change impacts present both opportunities and threats in relation to the economy of the *Hampshire Economic Area*; the environmental goods and services sector however has real growth potential.
- Future sustainability will depend – in part – on infrastructure provision.
- Across the *Hampshire Economic Area*, there are areas of congestion on the road network, both on the motorways (M3, M27) and more locally.
- Broadband access is quite poor, particularly in rural and urban fringe locations.
- Between 1998 and 2009, the net housing stock increased by almost 70,000 dwellings across the *Hampshire Economic Area*. In relative terms, the biggest increases were seen in *North Hampshire*. Despite the increase in stock, housing affordability remains an overarching concern, particularly in the rural *Districts in Central Hampshire/New Forest*, where workplace-based earnings have not kept up with house price rises. For some rural areas, issues of affordability are absolutely acute.
- A review of extant Employment Land Reviews suggests that overall employment land provision ought to be consistent with the scale of planned and forecast growth. However, there are concerns about the quality and the viability of some planned provision. Rates of employment floorspace completion have slowed since the recession
- Economic growth may be constrained by a lack of capacity in gas, electricity and water supplies so careful and timely planning will be required
- Looking ahead, there are likely to be important economic issues linked to the management of flood risk, particularly in the context of rising sea levels. If these are not addressed, they will have an impact on patterns and rates of economic growth

## Sustainability of economic life

- 6.1 Particularly as we look forward, the environmental footprint of the area's economy needs to be properly understood. This has many dimensions, but in the context of the Hampshire Economic Assessment, one key metric relates to the relationship between economic growth on the one hand, and both emissions of carbon dioxide and the efficiency of resource use on the other. Specifically, can the economy grow without placing ever-increasing demands on environmental assets and resources (i.e. can this relationship genuinely be de-coupled)?

### **Carbon Emissions**

- 6.2 Table 6-1 suggests that the *Hampshire Economic Area* performs well against the national averages for carbon emissions, and that its performance is improving.

Table 6-1: Per capita carbon emissions for the three sectors of Industry and Commercial, Domestic, and Transport

Area	Year	Per capita - Industry and Commercial	Per capita - Domestic	Per capita - Road Transport	Per capita - Total
<i>Hampshire Economic Area</i> Total	2005	2.5	2.5	1.9	6.9
	2006	2.4	2.5	1.8	6.7
	2007	2.3	2.4	1.8	6.5
	2008	2.3	2.4	1.8	6.4
South East Total	2005	2.5	2.5	1.9	6.9
	2006	2.5	2.5	1.8	6.9
	2007	2.4	2.4	1.8	6.7
	2008	2.4	2.4	1.7	6.6
England Total	2005	3.0	2.5	1.7	7.2
	2006	3.0	2.5	1.7	7.1
	2007	2.8	2.4	1.7	6.9
	2008	2.8	2.4	1.6	6.8

Source: Department of Energy and Climate Change

- 6.3 However, performance varies by sector: industry and commercial emissions are below those of the regional and national averages, domestic emissions are at the same level and transport emissions above both the national and regional averages. This suggests that *Hampshire Economic Area's* performance is largely due to the comparatively good performance of the industrial and commercial sector.

Table 6-2: Per capita carbon emissions for the three sectors of Industry and Commercial; Domestic; and Transport

	Total final energy consumption/ Capita (kWh)	Total domestic energy consumption/ capita (kWh)	Total industrial and commercial energy consumption/ employee (kWh)	Total vehicle consumption/ capita (tonnes of fuel)	CO2 emissions/ capita (tCO2)
North Hampshire	27,667	9,323	15,600	0.9	8.0
Districts in Central Hampshire/New Forest	<b>49,775</b>	9,643	<b>68,375</b>	<b>1.1</b>	<b>10.7</b>
Districts in South Hampshire	<u>19,917</u>	<u>8,133</u>	<u>14,000</u>	<u>0.4</u>	<u>5.9</u>

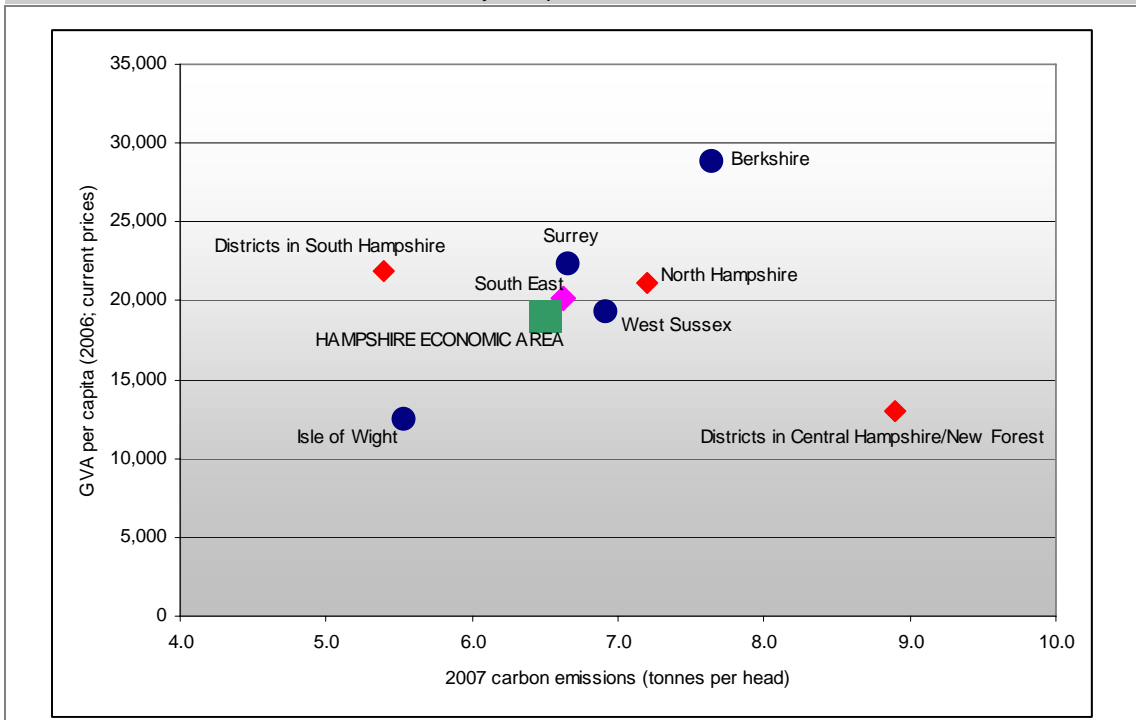
Source: Department of Energy and Climate Change

Notes: Values in the upper quartile nationally (GB) are shown in **bold**; those in the lower quartile are underlined

- 6.4 At sub-area level, *Districts in South Hampshire* stand out as producing the lowest per capita carbon emissions<sup>57</sup> in the *Hampshire Economic Area*, with levels within the lower quartile nationally (Table 6-2). By contrast, per capita emissions in *Districts in Central Hampshire/New Forest* appear relatively high, within the upper quartile nationally (although this position is heavily influenced by activities at Fawley power station and oil refinery: removing this effect would bring the sub-area's energy consumption closer to the national average).
- 6.5 Figure 6-1 plots the relationship between GVA per capita and carbon emissions per capita in the *Hampshire Economic Area*, its component sub-areas, and across some key comparators. Read alongside the preceding tables, it confirms that overall, the performance of the *Hampshire Economic Area* is very similar to the regional average. In terms of comparators, Surrey and West Sussex are broadly similar. However Berkshire – the strongest performing area on GVA per capita (and on many of the key competitiveness indicators considered in Section 3) – appears to generate very high carbon emissions per resident. Notwithstanding its economic successes, there must therefore be questions with regard to its overall sustainability. This ought to raise questions for the *Hampshire Economic Area* looking ahead.

<sup>57</sup> Data in Table 6-1 and Table 6-2 are not directly comparable because road transport data and residual fuel data (included in total final energy consumption) have been revised.

Figure 6-1: Relationship between GVA per capita and carbon emissions per capita in the *Hampshire Economic Area*, the three sub-areas and key comparator areas



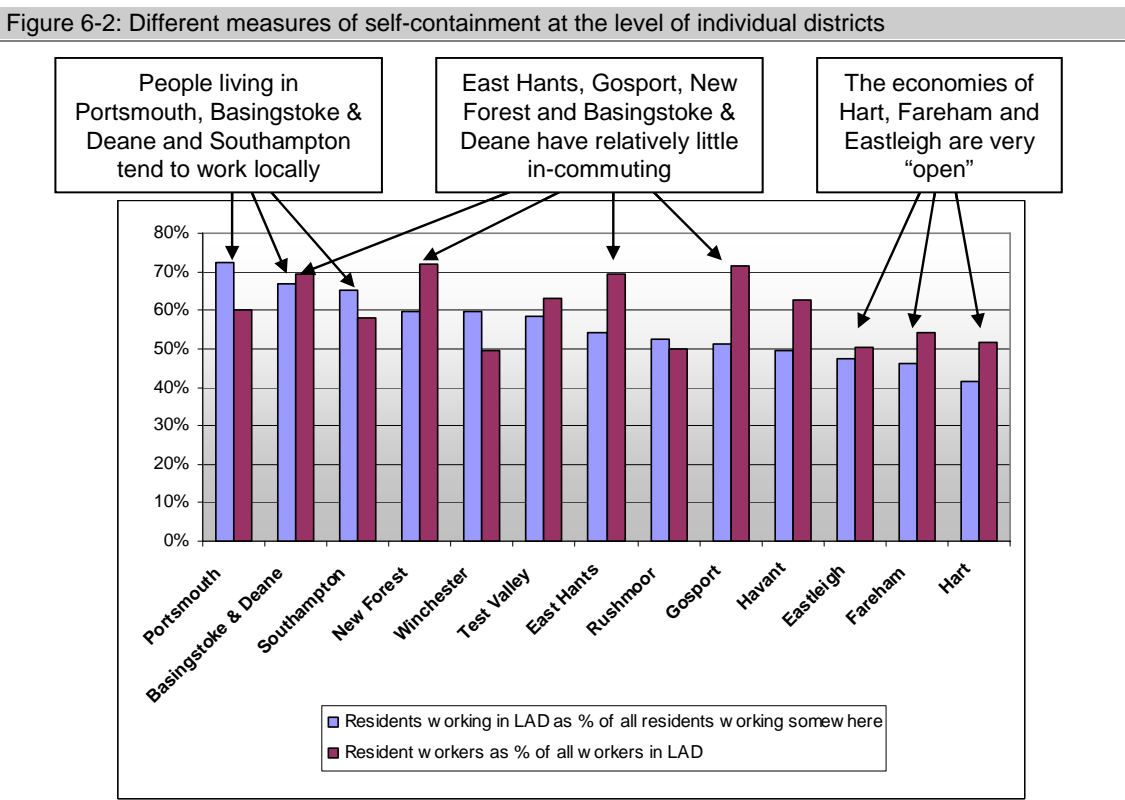
Notes: Data on per capita CO<sub>2</sub> emissions are sourced from DECC (NI186). For the Hampshire Economic Area, South East and comparator areas, GVA per head data were sourced from National Statistics (2008). Figures for the sub-areas have been calculated using LEFM GVA output (including an adjustment to translate them into current prices) and population numbers from APS.

6.6 At a sub-area level, the contrasts – evidenced by the Figure and the preceding tables – are striking:

- The *Districts in South Hampshire* appear to constitute the most environmentally sustainable economy (at least in terms of carbon emissions). Relatively, per capita emissions deriving from road transport are low, a finding which is consistent with the character of commuting patterns within a comparatively urban area in which most resident workers work locally (see Figure 6-2): at the time of the Census, and across the sub-area as a whole, 73.6% of residents travelled less than 10km to work (compared to 67.3% for the *Hampshire Economic Area* and 63.0% across the South East) and 57.7% drove a car to work (compared to 60.7% across the *Hampshire Economic Area* and 59.2% across the South East).
- For *North Hampshire*, per capita carbon emissions are notably higher. In this context, it is apparent that the resident working population is travelling further to work<sup>58</sup> (the proportion travelling less than 10 km was 64.1% in 2001) and is more inclined to drive (63.4% used this mode as captured by the Census).

<sup>58</sup> Note for example that fewer than 40% of resident workers in Hart district were working within the district at the time of the last Census (see Figure 6-2)

- However, it is with regard to the *Districts in Central Hampshire/New Forest* that the biggest questions arise in relation to environmental sustainability. We noted earlier that this sub-area performs poorly on workplace-based measures of economic output, despite the high incidence of well-qualified residents. The Census suggests that within this sub-area, the proportion of working residents with journeys to work of less than 10km was under 60% in 2001, and that the majority of these were made by car. From Figure 6-2, these areas are typically mid-ranking in terms of self containment; however it is important to recognise that these predominantly rural districts are spatially extensive (and hence within-district commuting can still be long distance).



### Climate change impacts

6.7 Looking ahead, the impacts of climate change are likely to be important for the economy of the *Hampshire Economic Area*. All sectors will need to adopt resilience and adaptation measures in response, and there may be some requirements imposed through regulation. Likely economic impacts are a mix of “positives” and “negatives”, and they include:

- changed requirements in relation to building design, construction, maintenance and management

- increased costs of capital and insurance for operations vulnerable to extreme weather events
- disruptions to supply and distribution routes as well as production processes, operations, service delivery and availability of the workforce
- opportunities for the emerging environmental goods and services sector, a key component of the so-called low carbon economy.

6.8 The environmental goods and services sector constitutes a major opportunity for the *Hampshire Economic Area*. The global market for this sector is already estimated to be worth £3 trillion<sup>59</sup> and to generate high levels of GVA per worker<sup>60</sup>. The *Hampshire Economic Area* is well placed to take advantage of this market, with solid growth in the environmental technologies sector particularly in *Districts in South Hampshire*, where it has the potential to become a significant sector in the future. There is an opportunity for the *Hampshire Economic Area* to build on its existing strengths and inter-relationships with advanced manufacturing, aerospace and marine to harness the demand for renewable, green energy and environmental services.

## Key infrastructure

6.9 One dimension of environmental performance relates to infrastructure provision and the manner in which this might be changing. Six key elements are considered briefly below. All six are fundamentally important with regard to the geography and sustainability of economic activity, both now and in the future.

### ***Transport and Communications***

6.10 The *Hampshire Economic Area's* two international sea ports (Southampton and Portsmouth), and two airports (Southampton and Farnborough) are key assets in allowing world business and trade markets to be reached from a *Hampshire Economic Area* base (see Section 2). An effective and reliable transport network is essential in ensuring access to and from these international gateways as well as linking businesses to businesses and commercial centres with residential areas. In particular, traffic congestion and economic performance are closely related, with each influencing the other. However, the *Hampshire Economic Area's* transport infrastructure is under pressure. According to the Local Transport Plan, the most congested routes are found within *Districts in South Hampshire*, notably the M27 between Southampton and Portsmouth. In *North Hampshire*, the stretch of the M3 between Hook and

<sup>59</sup>Figure from Committee on Climate Change - Independent advisors to the UK Government on tackling and preparing for climate change [www.theccc.org.uk/topics/economics-and-society/social-impacts](http://www.theccc.org.uk/topics/economics-and-society/social-impacts)

<sup>60</sup> Environmental Technologies – PUSH Economic Strategy Evidence Base <http://www.push.gov.uk/pos-100608-r01-kta-appendix.pdf>

Farnborough and onwards to the M25 is congested. More locally, “congestion hotspots” are identified in and around Basingstoke, Portsmouth, Gosport and Hythe.

- 6.11 The economic downturn has resulted in a fall in traffic volumes, to varying extents across the area, which in turn has led to improvements in journey times with congestion easing. However longer term forecasts suggest that increases in traffic volumes are likely to resume, with growth nationally of 7% by 2015 and 43% by 2035<sup>61</sup>. Since tackling road congestion is a key issue for Hampshire businesses<sup>62</sup> it is important that efforts in this area do not diminish as recent falls in congestion are likely to be temporary.

### **Broadband**

- 6.12 Particularly for the more rural areas within the *Hampshire Economic Area*, the provision of broadband is often seen as a key infrastructure in terms of facilitating home-working and reducing the need to travel<sup>63</sup>. However, research carried out for Hampshire County Council (eHampshire) has indicated that 51.8% of Hampshire’s postcodes cannot achieve the minimum speed laid out in the Digital Britain report<sup>64</sup> of 2Mbps; and that most of these postcodes are in rural and town fringe locations<sup>65</sup> (see Figure 6-3). Against this backdrop – and with the gradual introduction of superfast broadband – the possibility of an increasingly acute digital divide is a strong one.

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<sup>61</sup> Hampshire Local Transport Plan, due for publication in March 2011

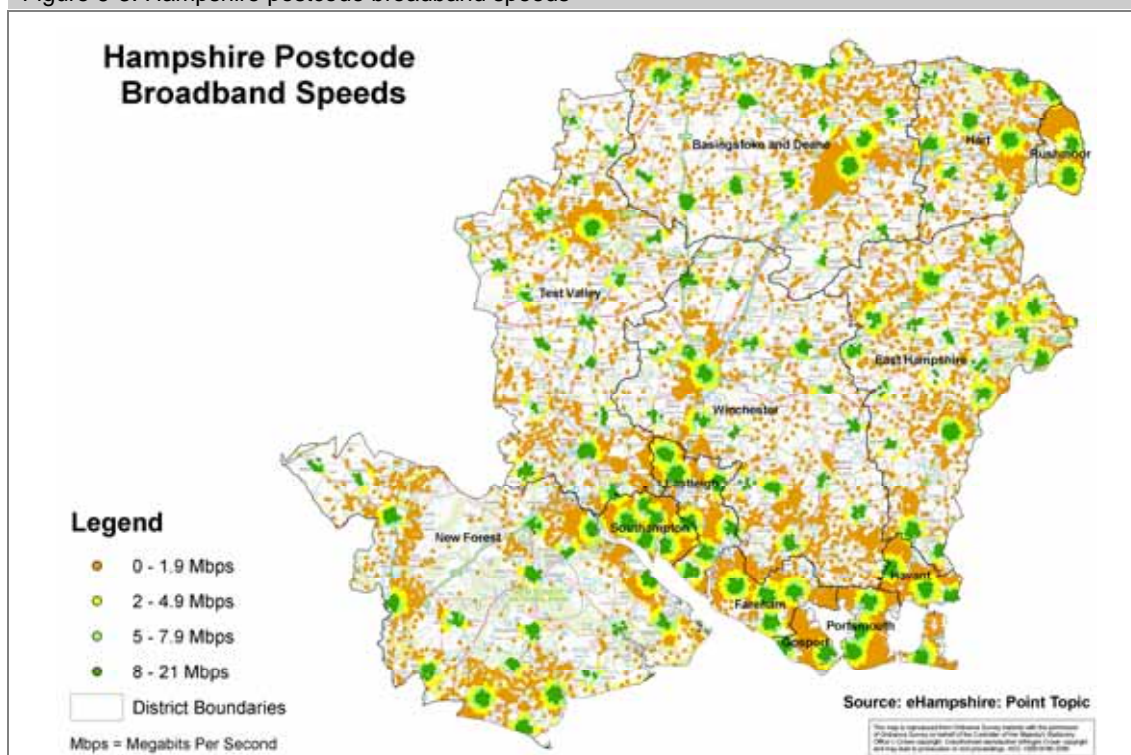
<sup>62</sup> Business Reaction survey, Hampshire Economic Partnership, 2010, [www.hep.uk.com/downloads/J1020\\_HEP\\_Business\\_Report\\_Final-41.pdf](http://www.hep.uk.com/downloads/J1020_HEP_Business_Report_Final-41.pdf)

<sup>63</sup> Whether this reduces carbon emissions however is a matter for debate. The carbon dioxide emitted through heating houses during the day may exceed that generated through a journey to work

<sup>64</sup> Available at: <http://interactive.bis.gov.uk/digitalbritain/category/digital-britain-report/>

<sup>65</sup> Socio-economic profile of rural Hampshire, Hampshire County Council, April 2010

Figure 6-3: Hampshire postcode broadband speeds



Source: e-Hampshire

### Housing provision

6.13 Between 1998 and 2009, the net housing stock of the *Hampshire Economic Area* increased by over 68,000 dwellings (an increment which is equivalent in scale to a sizeable town). All three sub-areas saw substantial growth, but as a proportion of stock, the highest figures were actually recorded in *North Hampshire*. Notwithstanding its designation as a Growth Point, on the district-based sub-area definition, the rate of growth in the housing stock within *Districts in South Hampshire* matched exactly that across *Districts in Central Hampshire/New Forest*. At district level, the greatest *relative* increases in housing stock were seen in Basingstoke and Deane, Gosport, Winchester, and Hart; while the largest *absolute* increases were in Southampton, Portsmouth and Basingstoke and Deane. Over time, this will impact on the economic geography of the *Hampshire Economic Area* as described in Section 2.

Table 6-3: Total dwellings (2008/09) and net additional dwellings over the period 1998-2009

Area	Total Net Dwelling Completions 1998-2009	Total Dwelling stock 08/09	Net completions as % of 08/09 stock
<i>Hampshire Economic Area</i>	68,056	743,757	9.2%
• North Hampshire	16,694 (14%)	145,802	11.4%
• Districts in Central Hampshire/New Forest	19,117 (28%)	223,230	8.6%
• Districts in South Hampshire	32,245 (47%)	374,725	8.6%
Hampshire County Council Area	51,384	556,113	9.2%

Sources: Hampshire County Council Land Availability Monitoring System; and CLG

6.14 Notwithstanding the rate of house building, major issues remain with regard to affordability. Table 6-4 shows median house prices, median workplace-based gross weekly earnings and the ratio between the two (indexed against England). It suggests that for people working locally, the least affordable district in which to live is Winchester, followed by New Forest and East Hampshire; it is striking that all three of the least affordable districts are in the same, predominantly rural, sub-area (*Districts in Central Hampshire/New Forest*). The lowest median house prices appear to be in Gosport, but the most affordable districts – relative to local earnings – are Portsmouth and Rushmoor (although Rushmoor, arguably, is slightly anomalous because workplace-based earnings are relatively high). Overall, housing within eight (of 13) districts within the *Hampshire Economic Area* is less affordable than the regional average.

Table 6-4: House prices, workplace-based earnings, and the ratio between the two (Source: ASHE and Land Registry)

District	Sub-Area within the Hampshire Economic Area	Median house prices, 2009 Q1	Median workplace based gross weekly FT employee earnings, 2009	House prices: earnings ratio normalised against England
Winchester	Districts in Central Hampshire/New Forest	£245,000	£520	1.47
New Forest	Districts in Central Hampshire/New Forest	£215,000	£459	1.46
East Hampshire	Districts in Central Hampshire/New Forest	£210,000	£455	1.44
Hart	North Hampshire	£248,725	£543	1.43
Fareham	Districts in South Hampshire	£185,000	£448	1.29
Eastleigh	Districts in South Hampshire	£175,000	£445	1.22
Test Valley	Districts in Central Hampshire/New Forest	£195,000	£499	1.22
Havant	Districts in South Hampshire	£172,000	£468	1.15
Basingstoke and Deane	North Hampshire	£175,000	£531	1.03
Southampton UA	Districts in South Hampshire	£142,950	£500	0.89
Gosport	Districts in South Hampshire	£127,250	£447	0.89
Rushmoor	North Hampshire	£175,000	£652	0.84
Portsmouth UA	Districts in South Hampshire	£130,000	£534	0.76
South East		£188,000	£514	1.14
England		£159,000	£495	1.00

### **Employment land**

6.15 In terms of the Hampshire Economic Assessment, housing-based observations need to be considered alongside and in relation to employment land provision and development (whilst recognising also that a large and increasing proportion of jobs growth is not accommodated on formally-allocated employment land (B1-B8 use classes)<sup>66</sup>).

<sup>66</sup> B1-B8 use classes refer to provision for offices, light industrial, warehousing, R&D, etc. There are some key sectors that do not really use sites of this nature (e.g. retail, health, education) and the increasing number of people who work from home are also not occupying employment land

#### *Provision of employment land*

- 6.16 A review of employment land studies across the *Hampshire Economic Area* suggests that (a) the overall supply of employment land and premises (including vacant premises available on the second hand market) should be sufficient to accommodate projected demand; although (b) the quality and viability of at least some of the sites allocated for new employment development may be open to debate (particularly in the context of the property market downturn). Over the medium-long term, major new employment sites are likely to be concentrated in Basingstoke, Farnborough, a Strategic Development Area (North of Fareham), the Strategic Employment Zone close to Southampton International Airport (Eastleigh RiverSide) and the city centres of both Southampton and Portsmouth. The majority of major new planned development is focused in *Districts within South Hampshire*. Although – at least relatively – this area scores reasonably well with regard to environmental sustainability, this area is – on many measures – underperforming economically and hence generating high quality and sustainable economic growth will be challenging but vital.

#### *Realising that provision: employment land completions*

- 6.17 In the context of recession, completions of new employment floorspace in the *Hampshire Economic Area* have declined. Over the four years since 2006, employment development completions in the *Hampshire Economic Area* decreased by 59%<sup>67</sup>. The largest sub-area decrease was in *Central Hampshire/New Forest* where there was a decline of 72% (compared with 40% in *North Hampshire*, and 28% in *South Hampshire* over the same period). The amount of employment floorspace under construction and new starts have also both fallen significantly since 2008 meaning that the economic downturn is likely to continue to have a significant impact on new employment floorspace development over the next couple of years.
- 6.18 Long term employment floorspace completion data taken over a 20 year period indicate an annual average completion rate of 208,000m<sup>2</sup> per annum for the *Hampshire Economic Area*. As of 1<sup>st</sup> April 2010 there were around 2,409,000m<sup>2</sup> of floorspace in the supply of new sites in the planning system<sup>68</sup>, so it could be implied very simply that there were approximately 12 years' worth of supply in the planning pipeline. However two cautionary points should be noted. On the one hand the deliverability of the supply of sites is far from certain. In 2009<sup>69</sup> it was estimated that 23% of the current stock of sites might require remedial action (often in the form of transport infrastructure investment) to avoid market failure. On the other, past rates of

<sup>67</sup> Development in Hampshire 2009/10 Monitoring Bulletin

<sup>68</sup> Total potential floorspace in supply is the total of permitted floorspace plus allocations (hectares) at 3500m<sup>2</sup> to the hectare, totalling 2,409,000m<sup>2</sup>

<sup>69</sup> Employment Land in Hampshire – HEP Large Site Assessment Study 2009

new site development may provide an inadequate guide to future floorspace demand particularly in the light of recent trends in the commercial property market towards more efficient use of space.

### **Utilities**

- 6.19 Economic growth can be constrained by lack of capacity in gas, electricity and water supplies and in waste water treatment. Utility companies have a statutory duty to provide connections to new developments. Where significant new infrastructure is required, there can be a lead-in period of several years and up to 5-10 years for major engineering works. More strategically significant is whether there are sufficient energy and water supplies. The provision of sufficient electricity generating capacity is a national issue which is outside local influence, other than to have a positive attitude to, for example, renewable energy proposals. Water companies in Hampshire are developing Water Resources Management Plans which look 25 years ahead. These will take account of known planned developments and, through a combination of water supply enhancements and demand management measures, aim to ensure adequate water supplies into the future.
- 6.20 In this context, a key consideration is the need for employment sites to be identified/allocated well in advance of their development, so that the necessary infrastructure and associated lead-in times can be factored into the plans of the utility providers. This in turn underlines the importance of Local Development Documents being finalised as soon as possible for all areas so as to identify a long term supply of employment sites.

### **Managing flood risk**

- 6.21 Flood risk from rising sea levels is a direct threat to large areas of coastal land and areas of significant economic potential particularly for marine-related industries. Across the *Hampshire Economic Area*, there is a risk of river flooding in some localised areas. Neither is an absolute constraint on economic development (less so than for house building, for example) provided that buildings are designed appropriately and measures are in place to manage the risk of flood events. It may however impose additional costs on businesses, through developer contributions towards flood prevention measures (such as sea defences), and/or higher insurance premiums.