

April 2009

**SOUTH SOMERSET DISTRICT  
COUNCIL**

**Yeovil Infrastructure Impact  
Assessment - Initial  
Assessment**

Final Report





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## 1 Introduction

- 1.1 As part of the Settlement Role and Function Study, Baker Associates have conducted an assessment of the likely infrastructure impacts of new residential development at Yeovil.
- 1.2 The objective of this work has been to identify issues and potential infrastructure requirements and associated costs (where possible), to enable South Somerset District Council to understand the impact of future level of development and respond to the Secretary of State's Proposed Changes to the South West Regional Spatial Strategy (RSS). The Proposed Changes to RSS suggest 11,400 new dwellings at Yeovil, of which 6,400 could be accommodated within the urban area and 5,000 within an urban extension to the town.
- 1.3 The Council is currently undertaking a Strategic Housing Land Availability Assessment (SHLAA) to update existing housing evidence in the Urban Housing Potential Study. This study will identify potential residential development opportunities within the built up area and assessment of potential suitable locations adjacent but outside the defined settlement boundary. The results of the study are as yet unknown; therefore the RSS dwelling breakdown has been used as a starting point to determine impacts.

## 2 Methodology

- 2.1 Section two sets out the methodology that the study has followed. Broadly this has followed the four stage process set out below:
  - 1) Infrastructure project meeting;
  - 2) Review of existing strategies to identify existing infrastructure issues in Yeovil;
  - 3) Consultation with infrastructure and community service providers;
  - 4) Identify issues, impacts and potential costs of infrastructure provision.

### Infrastructure Project Meeting

- 2.2 The project commenced with an initial inception meeting. This discussed the scope of the study, types of infrastructure to be assessed, established a consultation list and project timescales and meeting dates.
- 2.3 As a result of the meeting a defined list of infrastructure areas and agreement on information requirements and the approach to consultation were agreed. The Yeovil Infrastructure Impact Assessment will address the following infrastructure types:
  - Education;
  - Health;
  - Open Space, Arts and Leisure;
  - Community;
  - Transport;
  - Utilities (Gas, Water, Electric);
  - Waste and Recycling;
  - Flood Risk;
- 2.4 The Infrastructure types will be assessed to identify specific issues for each type and where possible identify the overall development impact of 11,400 dwellings. In addition, locationally specific impacts

and issues have been identified; this second area of impact analysis has been influenced by the current planning policy context, in the sense that specific locations for development have not yet been identified.

- 2.5 Stage 2 to 4, as described below, were the main body of the work. The results have presented in Section 3

#### **Review of existing strategies to identify existing infrastructure issues in Yeovil**

- 2.6 The first part of the assessment was to review existing strategies, literature and best practice. The objective of this exercise was to identify potential evidence, existing issues and the availability of detailed information on costs.
- 2.7 This stage has utilised existing information made available to Baker Associates as well as the practices existing experience in these areas.

#### **Consultation with infrastructure and community service providers;**

- 2.8 The analysis of existing data has been supplemented with consultation, where possible. The objective of this stage was to provide a qualitative element to the assessment and identified agreed standard for service provision to assist in the approach to assessing development impact and potential costs. This included consultation with:

- Somerset County Council
- Somerset Primary Care Trust
- Environment Agency
- South Somerset District Council
- Somerset Waste Partnership
- Wales and West Utilities
- National Grid
- Wessex Water

- 2.9 This stage has used a defined consultation list to conduct a series of telephone discussions with representatives of key infrastructure and community service providers.

#### **Identify issues, impacts and potential costs of infrastructure provision**

- 2.10 The final stage has brought together these two areas of assessment to define issues, development impacts for each infrastructure type and develop or use common approaches to the assessment of infrastructure impacts and the identification of potential costs. Stage 4 has utilised an Infrastructure calculator approach to establish the overall impact and cost for specific infrastructure areas.
- 2.11 The findings of the assessment are presented in section three. Each Infrastructure type has been taken in turn. The following headings have been used to structure the report:
- Evidence;
  - Overall Development Impact and Locational Issues;
  - Identifying the Cost.

### 3 Infrastructure Analysis

3.1 Section three presents finding of the assessment for each Infrastructure type.

- Education;
- Health;
- Open Space and Leisure;
- Community;
- Transport;
- Utilities (Electric, Water, Gas);
- Waste and Recycling;
- Flood Risk;

#### Education

3.2 Somerset County Council has statutory responsibility for the provision of children's services. It has a duty to ensure that there are sufficient school places in terms of quantity and more importantly quality to meet the needs of the population of the county. Future housing developments in Yeovil will lead to an increase in educational age population resulting in a demand for additional school places for early years 0-5, primary schools and secondary schools, special schools and post 16.

#### Evidence

3.3 Strategic planning for school places is contained within the Somerset School Organisation Plan. School Organisation Plan revised area tables - 2008 provide the latest school population forecasts, school net capacities as at 9 May 2008 and surplus places for all Somerset County schools. This information shows school capacity for the next 5 years for primary and secondary schools. In addition, analysis on Yeovil School Catchments and admissions is available to supplement school place planning.

#### Overall Development Impact and Locational Issues

3.4 The infrastructure impact on Education and Children's Services is generally applicable for all residential developments that result in a net increase in dwellings. The impact from specific types of housing such as one bed flats, sheltered and student accommodation is considered to be negligible. For this study the following infrastructure types have been calculated:

- Early Years 0-5;
- Primary Schools;
- Secondary Schools;
- Post 16
- Special Schools

3.5 At present, early years and primary school provision has some capacity, however this is locationally specific and could help facilitate development within the urban area. There has been a decline in demand for primary school provision in recent years, however the demographic cycle is changing and this is beginning to increase again. The County considered that each of the three existing Adopted Local Plan Key Site allocations would require the provision of a primary school and additional development above this level would require extra facilities.

3.6 Secondary school provision across Yeovil is at capacity, with a high level of pupils from adjacent areas outside South Somerset being attracted to existing schools. The wide catchment of secondary schools has increasingly highlighted the district wide impact of residential development on the education requirements for Somerset's residents.

3.7 The County Council has identified a pupil product ratio for each new residential unit containing two or more bedrooms for early years, primary and secondary schools. Regional standards of provision have been used for special and post 16 requirements. It has been assumed that between 20% and 30% of future development will be in one bedroom properties and therefore will not generate a requirement. The following pupil product ratios have been used to calculate the school place requirement from the residual 9,120 (80%) and 7,980 (70%) dwellings that are likely to have an impact of education services.

- 0.03 pupil per dwelling of early year's age.
- 0.2 pupil per dwelling of primary education age
- 0.14 pupil per dwelling of secondary education age
- 0.02 pupil per dwelling for post 16 provision.
- 0.005 pupil per dwelling for special school provision

3.8 Table E1 below sets out the school place requirements for each

**Table E1: Pupil Product Ratio per dwellings**

	Pupil Product Ratio	No of Dwellings	School Places Required
<b>Early Years Places</b>	0.03	9,120	273
		7,980	239
<b>Primary places</b>	0.2	9,120	1,824
		7,980	1,596
<b>Secondary places</b>	0.14	9,120	1,277
		7,980	1,117
<b>Post 16</b>	0.02	9,120	183
		7,980	160
<b>Special School</b>	0.005	9,120	46
		7,980	40

3.9 Table E1 shows that based on no existing capacity being available, the future development of 11,400 dwellings by 2026 is likely to require between 239 and 273 early years places, between 1,596 and 1,824 primary places, 1,117 to 1,277 secondary school places, 183 to 160 Post 16 places and 36 to 40 special school places

3.10 The next stage to the approach is to translate school places requirement for primary and secondary schools into school provision. It is considered that Post 16 and special school requirement is insufficient to generate new facilities. The size of primary and secondary schools varies by form entry. A form entry is the number of classes in each year group. This generally varies between 1 to 3 forms for primary school and 4 to 8 forms for a secondary school. The indicative form entry (FE) capacity of primary is 210 pupils, whilst a secondary school is 181.8 pupils; these figures reflect the number of pupils within each form across all year groups. The capacity of different school sizes is set out below:

**Primary School**

- 1 FE - 210 pupils
- 2 FE - 420 pupils

- 3 FE - 630 pupils

#### Secondary School

- 4 FE - 727.1 pupils
- 6 FE - 1090.8 pupils
- 8 FE - 1454.4 pupils

- 3.11 Table E2 below has assumed that new school provision will occupy two form entry primary schools and six form entry secondary schools, as this reflects the general size of provision across the South West. It is considered that primary schools will require early years nursery provision as part of primary school requirements.

**Table E2: School Provision Required**

	Indicative School Size	School Places Required	No of Schools required
<b>Primary places</b>	420 pupils	1,824	4.3
		1,596	3.8
<b>Secondary places</b>	1,090 pupils	1,277	1.2
		1,117	1.02

- 3.12 Table E2 shows that between 3.8 and 4.3 primary schools and 1 to 1.2 secondary schools could be required to meet the needs of future development. This requirement is dependant on the location of future development, the availability of existing school place capacity (explained in paragraphs 3.5 and 3.6) and the most desirable size of school provision in each location.

#### Identifying the Cost

- 3.13 Cost multipliers provided by Department of Further Educations and Skills (DfES), provided by Somerset County Council, identify the cost per pupil for the construction of accommodation to provide for additional pupil places. It has been assumed that the cost of special school places are similar to that of post 16 provision. The 2006-7 multipliers, including South Somerset's location factor, which represents the regional variation in construction costs are set out below.

- Early years and Primary - £11,521 per place
- Secondary - £17,361 per place
- Post 16 and Special School - £19,894 per place

- 3.14 Table E3 below shows the cost of school place provision:

**Table E3: The Cost of School Place Provision per Dwelling**

	Cost per place	School Places Required	Cost of Provision
<b>Early Years Places</b>	£11,521	273	£3,145,233
		239	£2,753,519
<b>Primary places</b>	£11,521	1,824	£21,014,304
		1,596	£18,387,516
<b>Secondary places</b>	£17,361	1,277	£22,169,997
		1,117	£19,392,237
<b>Post 16</b>	£19,894	183	£3,640,602
		160	£3,183,040
<b>Special Schools</b>	£19,894	46	£915,124
		40	£795,760

- 3.15 The information shows that the indicative cost of school provision to meet the requirement of 11,400 dwellings by 2026 ranges between £44.5 million and £50.8 million. It must be noted that the cost does not include the provision of land or future inflation levels which will increase the overall cost.
- 3.16 Following research into the cost of school provision it is considered that DfES cost multipliers provide a conservative cost of primary and secondary school provision and reflect the cost to extend existing schools rather than allow the construction of new schools. Dependant on size and facilities our research with other authorities across the south west has identified that 2 FE primary schools cost between £8 to £10 million and 8 FE Secondary Schools cost in the region of £35 million. This could imply an overall cost of school provision could be £71 million for 1 secondary school and 4 primary schools.
- 3.17 Future costing of facilities is indicative and provides a broad strategic assessment of future development impacts. Specific costs for individual facilities are very dependent on the size, location and composition of future facilities. Given the likely requirement for new provision it is considered that the cost of education facilities will be a significant issue for the delivery of 11,400 dwellings at Yeovil.

## Health

- 3.18 Somerset Primary Care Trust (PCT) is responsible for addressing the health needs of people who live in the county of Somerset. They provide this service by employing teams of nurses and allied health professionals, treating patients in their own homes and in community hospitals. The PCT also buys in NHS services from other primary health care professionals such as GPs, dentists, pharmacists and opticians,

### Evidence

- 3.19 The National Health Service, Primary and Social Care Premises Planning Design Guidance, has been used to provide examples of health care provision, alongside standard approaches to assessing the impact for primary care facilities.
- 3.20 Following discussions it has been identified that there is limited capacity in Yeovil within existing GP practices based on GP patient registers. The availability of capacity is locationally specific, so at this stage has not been considered due to the uncertain ability of capacity to address future infrastructure requirements.

### Overall Development Impact and Locational Issues

- 3.21 A standard of 1 GP per 1800 people and 1 Dentist per 2000 people has been used to calculate the number of GP's and dentists the future development of 11,400 dwellings is likely to require. Assuming an average household size of 2.22 (given projected household size decrease from 2.32 to 2.12 by 2026), results in 25,308 new residents in Yeovil. Table H1 below sets out the quantum of provision required for each area:

**Table H1: Health Provision:**

	Standard	Provision
General Practitioners	1 per 1,800 people	14.06 GPs
Dentists	1 per 2,000 people	12.65 Dentists

Source: Bristol Primary Care Trust

- 3.22 Table H1 identifies a requirement for 14 additional GP's and 13 additional Dentist's. The complex issue with the identification of facilities is the variety of health provision. Existing facilities range from 95 sq m for a 2 GP practice to 1,500 -2,000 sq m for a large health centre supporting a population of 13,500.
- 3.23 The critical issue is the requirement to provide additional Health facilities in addition to generic consulting and treatment rooms. This could include:
- Public Spaces, e.g. reception area, pharmacy, toilets
  - Clinical Activity Spaces, e.g. consulting room and specialist treatment room
  - Non-Clinical Activity Spaces, e.g. group activity meeting space
  - Support Spaces, e.g. utility and storage spaces
  - Administration Spaces, e.g. office and record/archive space
  - Staff Spaces, e.g. staff room, changing facilities and training room
- 3.24 The size of facility is dependant on specific PCT preferences and requirements to provide particular elements within the facility. In addition, until the location of development has been identified the number and location of facilities is also difficult to identify.

- 3.25 Given indicative breakdown of development between the urban area (6,400) and an urban extension (5,000). It is considered that Yeovil could potentially require the provision for one new health centre as part of the strategic urban extension and one new health centre within the urban area. It must be noted that this requirement assumes that the location of existing facilities with capacity will help support new development and the distribution of residential development within the urban area will be relatively focused. It has been assumed that the urban extension will be located in one location rather than distributed in multiple locations. Table H2 below identifies the facility requirement from 11,400 dwellings, based on an indicative standard of one 1,500 sq m health centre per 14,000 people.

**Table H2: Health Centre Provision:**

	Population	Provision
Urban Area	14,208	1.01
Urban Extension	11,100	0.79

- 3.26 Table H2 shows that dependant on location and existing capacity, the future development of 11,400 dwellings at Yeovil could result in the requirement for 2 health centres.

### Identifying the Cost

- 3.27 The cost of health facilities to meet future needs is dependant on the size of facility and contents. Health centres and clinics vary in size from 600 sq m to 6,000 sq m and some individual GP practices are as small as 95 sq m. An indicative requirement of two 1,500 sq m health centres has been identified.
- 3.28 Costs have been based on two approaches, the first uses a standard cost multiplier. The North Bristol PCT cost advisors have benchmarked the construction costs for recent health centres and concluded that typical healthcare buildings in the South West are in the order of £2,105/m<sup>2</sup> to £2,359/m<sup>2</sup> as the norm. Table H3 below indicates the cost of each facility based on this assumption:

**Table H3: South West Standard Cost of Health Centre:**

	Floorspace	Cost per sq m	Overall Cost
Two Health Centres	3,000 sq m	£2,232	£6,696,000

- 3.29 The second approach has been to benchmark real facilities identified in the NHS, Primary and Social Care Premises Planning Design Guidance. Table H4 below sets out the benchmarked costs of several facilities:

**Table H4: Benchmarked National cost of Health Centres:**

Facility	Patients	Floorspace	Overall Cost	Cost per sq m
Horfield, Bristol	13,500	1,460 sq m	£2,300,000	£1575.34
Ashby, Scunthorpe	6,000	1,590 sq m	£2,750,000	£1,729.55
Prospect, Newcastle	14,000	1,100 sq m	£2,000,000	£1818.18
Manor Park, London	14,000	2,500 sq m	£5,000,000	£2,000

- 3.30 Table H4 highlights that the cost of health centres varies significantly depending on the composition of facilities, and the size of facility does not directly correlate with level of patients that can be serviced. The average cost per sq m for the three real examples that support between 13,500 and 14,000 patients is £1797.84. This average would result in an overall cost of £5,393,520 to provide two 1,500 sq m Health centres in Yeovil.

- 3.31 Given the variation in cost for new health provision it appears prudent to identify an indicative infrastructure cost of between £5 and £7 million for the provision of two new health centres. It must be noted that, if a more desirable format of provision requires additional facilities the cost is likely to increase.

## Open Space, Arts and Leisure

- 3.32 The Council is committed to improving recreation sport, open space and children's play provision across the district. New residential development will place increased pressure on existing provision and require new provision in Yeovil. The Council's responsibility is to co-ordinate the provision of open spaces and leisure facilities; ensuring they are located in the right places, are sufficient in size and quality, offer opportunities for biodiversity and are well maintained to meet the needs of the community.

### Evidence

- 3.33 The Council is currently preparing an Open Space Strategy which will comply with the requirements of Planning Policy Note 17: Open Space, Sport and Recreation (PPG17 2002). This strategy will identify areas of under provision and quality issues where the Council will seek to create new or improve existing facilities for recreation, sport, open space and children's play; and will be used as the evidence base to establish local standard of provision. In addition South Somerset District Council has a Play Strategy (2007) and The Next Level, The Sport and Active Leisure Strategy.
- 3.34 At present the Council's Sport, Arts and Leisure department identifies that there is no existing capacity within existing facilities and space. This will result in all new development having an impact on infrastructure provision.

### Overall Development Impact and Locational Issues

- 3.35 To determine the infrastructure impact of future residential development, indicative standard derived from current work on the PPG17 assessment and Strategy have been used. These are subject to change, but represent the best available information at this time. It is envisaged that the South Somerset Green Spaces Strategy will be adopted towards the end of 2009.
- 3.36 In order to provide a high level assessment of the Open Space, Art and Leisure infrastructure impacts, the indicative 'standards' have been plugged into the Sports, Art and Leisure departments' planning obligation calculator. This assumes the following standards of provision per person.

- Equipped Play Space 2 sq m
- Youth Facilities 1 sq m
- Playing Pitches 14 sq m
- Changing rooms 0.33 sq m
- Country Park 20 sq m
- Theatre and Arts Centre 0.06 sq m
- Synthetic Turf Pitches 0.32 sq m
- Swimming pools 0.01 sq m
- Sports Halls 0.06 sq m

- 3.37 Assuming an average household size of 2.22, based on a current household size of 2.32 in South Somerset (census 2001) and a projected household size decrease from 2.32 to 2.12 by 2026 identified the Regional Spatial Strategy for the South West. Table O1 overleaf sets out the quantum of provision required for each area from 11,400 dwellings and 25,308 people and the pro rata open space requirements that would be required under the Council's current policy CR2 which exempts sheltered housing, rest homes and one bedroom dwellings. The following bullet points illustrate the development levels for each scenario.

- All Development: 11,400 dwellings;
- 73% of impact: 11,400 dwellings -20% 1 bed and -8,8% specialist housing (11,400 dwellings -2280 and -1000, of which 200 are one bed = 8,320 dwellings);
- 64% of impact: 11400 - 30% 1 bed and -8.8% specialist housing (11,400 -3420 and -1000, of which 300 are one bed = 7,280 dwellings);

**Table O1: Open Space, Art and Leisure Provision:**

	Standard	Population	Provision
<b>Equipped Play Space</b>	2 sq m	25,308	50,616 sq m
		18,470	36,940 sq m
		16,161	32,322 sq m
<b>Youth Facilities</b>	1 sq m	25,308	25,308 sq m
		18,470	18,470 sq m
		16,161	16,161 sq m
<b>Playing Pitches</b>	14 sq m	25,308	354,312 sq m
		18,470	258,580 sq m
		16,161	226,254 sq m
<b>Changing Rooms</b>	0.33 sq m	25,308	8,352 sq m
		18,470	6,095 sq m
		16,161	5,333 sq m
<b>Country Park</b>	20 sq m	25,308	506,160 sq m
		18,470	369,400 sq m
		16,161	323,220 sq m
<b>Theatre and Arts Centre</b>	0.06 sq m	25,308	1,518 sq m
		18,470	1,108 sq m
		16,161	970 sq m
<b>Synthetic Turf Pitches</b>	0.32 sq m	25,308	8,099 sq m
		18,470	5,910 sq m
		16,161	5,172 sq m
<b>Swimming Pools</b>	0.01 sq m	25,308	253 sq m
		18,470	185 sq m
		16,161	162 sq m
<b>Sports Halls</b>	0.06 sq m	25,308	1,518 sq m
		18,470	1,108 sq m
		16,161	970 sq m

- 3.38 Table O1 shows that the development of 11,400 dwellings at Yeovil will require a significant amount of new open space, arts and leisure provision.
- 3.39 It must be noted that work on the standards for community halls, theatres and country park provision are still under development and health and fitness facilities are to be added to the departments planning obligation calculator.

#### Identifying the Cost

- 3.40 Currently South Somerset Local Plan policy CR2 some types of dwelling are exempt from provided open space, these include sheltered housing, rest homes and one bedroom dwellings. The Strategic Housing Market Assessment identifies that 8.8% of future housing will be for specialist housing needs such as sheltered housing. In addition it has been assumed that between 20% and 30% of future development will be in one bedroom properties. Table O2 overleaf sets out the indicative costs of provision for 11,400 dwellings and the pro rata contributions that could be secured under the

Council's current policy to identify the funding shortfall:

- 11,400 dwellings;
- 73% of impact, 11,400 dwellings -20% 1 bed and 8,8% specialist housing (11,4000 dwellings -2280 and -1000, of which 200 are one bed = 8,320 dwellings);
- 64% of impact, 11400 - 30% 1 bed and 8.8% specialist housing (11,400 -3420 and -1000, of which 300 are one bed = 7,280 dwellings);

**Table O2: Cost of Open Space, Art and Leisure Provision:**

	Provision	Cost per sq m	Cost of Provision
<b>Equipped Play Space</b>	50,616 sq m	£179.86	£9,103,794
	36,940 sq m		£6,644,028
	32,322 sq m		£5,813,435
<b>Youth Facilities</b>	25,308 sq m	£141.27	£3,575,261
	18,470 sq m		£2,609,257
	16,161 sq m		£2,283,064
<b>Playing Pitches</b>	354,312 sq m	£16.36	£5,796,544
	258,580 sq m		£4,230,369
	226,254 sq m		£3,701,515
<b>Changing Rooms</b>	8,352 sq m	£2,151.32	£17,967,050
	6,095 sq m		£13,112,511
	5,333 sq m		£11,473,269
<b>Country Park</b>	506,160 sq m	£21.29	£10,776,146
	369,400 sq m		£7,864,526
	323,220 sq m		£6,881,354
<b>Theatre and Arts Centre</b>	1,518 sq m	£3,078.11	£4,674,048
	1,108 sq m		£3,411,162
	970 sq m		£2,984,720
<b>Synthetic Turf Pitches</b>	8,099 sq m	£139.24	£1,127,643
	5,910 sq m		£822,964
	5,172 sq m		£720,082
<b>Swimming Pools</b>	253 sq m	£13,176.24	£3,334,643
	185 sq m		£2,433,652
	162 sq m		£2,129,412
<b>Sports Halls</b>	1,518 sq m	£4,724.47	£7,174,013
	1,108 sq m		£5,235,658
	970 sq m		£4,581,130

- 3.41 Table O2 identifies an overall maximum cost of £63,529,144. This would equate to £5,572 per dwelling. Costs are at present day values. At this stage, no provision for land acquisition has been included in the costing, however, there maybe a requirement to mitigate impacts stemming from small development/brown field town centre developments for playing pitch and country park provision through off-site delivery which will need land to be acquired and this could have an additional cost.
- 3.42 Currently, South Somerset District Council, don't seek contributions for one bedroom dwellings and specialist housing. As illustrated in Table O2 this will have an impact on the funding sources required to address infrastructure requirements by creating a shortfall of between £17.1 m and £22.9 m.

## Community

- 3.43 Libraries, museums, community and cultural facilities play a key role in underpinning education and quality of life in its broadest sense. The information and stimulation they supply promotes a wider understanding of the past, offers individuals the opportunity to acquire new skills and knowledge and gives everyone the opportunity to enjoy a rich and varied cultural life.
- 3.44 New developments impose extra costs on the service providers at a time when resources are stretched. Central Government states in PPS1 that *“Development plans should promote development that creates socially inclusive communities, including suitable mixes of housing. Plan policies should address accessibility (both in terms of location and physical access) for all members of the community to jobs, health, housing, education, shops, leisure and community facilities”*. The community at large should not suffer as a result of new development proposals and that it is therefore reasonable to expect new development to contribute towards the costs of community infrastructure where the need for those facilities arises directly from the development.

## Evidence

- 3.45 Library authorities have a statutory duty to provide a public library service and to ensure that it is “comprehensive and efficient”. In addition to its statutory duties, the library service has to meet a number of National Library Standards which together constitute a nationally recognised acceptable level of service. Additional development will have a direct effect on a number of these standards, in particular those requiring:
- 88% of the population to live within 1 mile of a static library;
  - 100% of the population to live within 2 miles of a static library. (Whilst the Department for Culture, Media and Sport (DCMS) will take into account mobile library provision, the above standards are a requirement towards which the Council is expected to work).
  - the provision of 6 electronic workstations per 10,000 population
  - the provision of 216 new items of stock added per year per 1,000 population.
- 3.46 Community centres provide valuable facilities to promote community cohesion. It is important that with significant level of residential development in the future that community meeting space is provided to address the increased requirements for such facilities.
- 3.47 Strategic studies into infrastructure impacts have been used to provide standard assumptions on the provision of community centres and libraries

## Overall Development Impact and Locational Issues

- 3.48 The Town and Country Planning Association Cultural and Planning Tool Kit produced in conjunction with the Museum and Libraries Archive, identifies a standard of 30 sq m per 100 people . Assuming an average household size of 2.22, based on a current household size of 2.32 in South Somerset (census 2001) and a projected household size decrease from 2.32 to 2.12 by 2026 identified the Regional Spatial Strategy for the South West. Table C1 overleaf sets out the requirement for library provision generated by 11,400 dwellings:

**Table C1: Library Provision**

<b>Dwellings</b>	11,400 homes
<b>Average Household Size</b>	2.22
<b>Population</b>	25,308 people
<b>Floorspace Requirement</b>	759 sq m

- 3.49 Table C1 shows that there will be a future requirement for 759 sq m of additional library floorspace. In general either land for library provision within an urban extension or expansion of existing provision within the urban area will be required in addition to stock and equipment.
- 3.50 It is considered that two libraries or extensions should be provided, dependant on facility size and locations required to meet national library standards on accessibility and local authority preferences. The minimum size for a viable standalone library is 200 sq m but in general community libraries consist of between 300 to 400 sq m
- 3.51 Supplementary Planning Guidance for Aldershot Urban Extension produced for Rushmoor Borough Council suggests that one 750 sq m community centre is required per 3000 dwellings or 7200 people. Roger Tym in 'The Costs and Funding of Infrastructure in the West of England', increases this standard to one community centre per 1500 dwellings. This standard is considered particularly high, therefore an average standard of 2250 dwelling has been used to calculate the community centre requirement. Table C2 sets out this calculation:

**Table C2: Community Centre Requirement:**

<b>Dwellings</b>	11,400 homes
<b>Indicative community centre Requirement</b>	5 community centres
<b>Floorspace Requirement</b>	3,750 sq m

- 3.52 The community centre requirement for 11,400 dwellings is 5 community centres of 750, sq m each.

### Identifying the Cost

- 3.53 Library building costs are derived from the 'Building Costs Information Service' of the Royal Institution of Chartered Surveyors. The figures are based on the updated costs of accepted tenders for 98 public library schemes across England over recent years and are published quarterly.
- Mean building cost for public library building (BCIS) £1,265 per sq m;
  - South Somerset regional adjustor (x 0.98) (-£26) £1,239;
  - External works, car parking, hard standing, landscaping, security fencing, signage (assume 15%) (+£186) £1,425;
  - Design costs (assume 15%) (+£213) £1,638;
  - Fitting out costs, including initial book stock and IT (88% of capital costs of £1,425) £1,254;
  - Total £2,892 per sq m.
- 3.54 The cost of a community centre as outlined in the Roger Tyms study, 'Costing the Infrastructure Needs of the South East Counties' is £1,309,500 per community centre. This is further supplemented in work for the West of England which indicates a cost of £1,746 per square metre and an overall cost of £1,310,000 per community centre.

3.55 The overall cost of the community infrastructure requirements for Yeovil is set out below in Table C3:

**Table C3: Cost of Community Infrastructure Requirements:**

	<b>Provision</b>	<b>Cost</b>
<b>Library</b>	759 sq m	£2,195,028
<b>Community Centre</b>	3,750 sq m	£6,547,500
<b>Total</b>	4,509 sq m	£8,742,528

3.56 Table C3 highlights that the infrastructure impact on community services is likely to cost £8.74 million to provide.

## Transport

- 3.57 Yeovil has relatively good transportation links, standing some 6km south of the A303, astride the north-south A37 route from Weymouth and has two railway stations, Yeovil Pen Mill and Yeovil Junction. However, future development will increase traffic levels and have an impact on existing highway infrastructure and require improvement in public transport, walking and cycling provision.

### Evidence

- 3.58 Somerset County Council has a wide range of evidence documents including the Somerset Local Transport Plan. More specifically for Yeovil, the County Council has developed the Yeovil Transport Strategy and Traffic Model and produced the Yeovil Western and Eastern Corridor Studies.
- 3.59 Somerset County Council commissioned Atkins to undertake the Western Corridor study to model, assess and evaluate requirements for improvements on the Western corridor in Yeovil. The locations the study included were:
- Copse Road;
  - Preston Road Roundabout;
  - Westland's Roundabout
  - Lysander Roundabout
  - Western Relief Road

- 3.60 The total cost of the proposed schemes is £10,529,000. In addition Somerset County Council commissioned Atkins to undertake a feasibility study and preliminary design for a number of junctions on the A30 eastern corridor in Yeovil (YEC). The locations the study included were:

- Horsey (Police Station) Roundabout;
- Hospital Roundabout;
- Fiveways Roundabout;
- A30 Reckleford Road/Market Street;
- A30 Reckleford Gyratory; and
- A30 Sherborne Road/Lyde Road.

- 3.61 Each study location was assessed and a preliminary design has been tested on 2002/2005 base year flows as well as two 2011 forecast scenarios 'Do Minimum' and 'Do Something' developed in the Yeovil Transport Model (YTM) from the Yeovil Transport Strategy Review (YTSR). The total cost of the proposed schemes was £4,930,000 and Atkins recommended that the proposed options detailed in this report be score carded against Somerset County Council's Local Transport Plan criteria.

- 3.62 As part of this study Somerset County Council have produced an Initial Traffic Modelling Report for Yeovil (2008), as explained below.

### Overall Development Impact and location issues

- 3.63 An initial evaluation of 5,000 homes identified in the South West Regional Spatial Strategy proposed changes has been undertaken using the SATURN traffic model. Three options were considered. Planned improvements to the Western Corridor were included in the modelling, but no further alterations were made to the modelled highway network.

- 3.64 In order to compare the scenarios four key network-wide impact parameters were chosen:
- total travel distance;
  - average speed;
  - queuing (due to congestion; transient queues at traffic signals are excluded);
  - carbon dioxide emissions.
- 3.65 The network-wide and journey time statistics showed that all options have a significant adverse effect on the network, although the NW option has a considerably smaller impact than the alternatives. Traffic into town suffers particularly badly in the SW Scenario, with times increasing by 23% on average during the AM peak. All schemes increase journey times on the westbound A303 during the AM peak due to modelled congestion at the Cartgate Link/A303 roundabout.
- 3.67 As previously mentioned this modelling is based upon the currently planned 2011 network, including the Western Corridor improvements which are clearly of benefit to the NW Scenario. Improvements suggested in the Yeovil Eastern Corridor Study are not included in the SATURN model and are not anticipated to be in place by 2011; it is likely, however, that they would go some way towards mitigating the impact of the SW and NE scenarios in the area of Sherborne Road and the Reckleford Gyratory.
- 3.68 Any development of the size under consideration will necessitate major improvements or additions to the highway network close to the site but as these have not yet been identified they could not be included in the network. It must be emphasised that the results outlined here are not necessarily representative of the true impact that each option would have assuming appropriate changes were made. It is less likely that significant network changes can be made closer to the town centre, and there are limited routing options for traffic; whilst it is not yet possible to accurately model the detail it is clear that any additional traffic can only add significantly to existing congestion unless improvements to highway infrastructure or public transport provision can be provided.
- 3.69 Any development of the size being considered will require multiple access points onto the existing network. As discussed in detail below, it is clear from initial modelling that bottlenecks where existing junction capacity is insufficient to accommodate traffic demand leading to congestion is an issue in the NE and, especially, the SW, and these would benefit from any new roads providing alternative route choices. It is anticipated however that, even incorporating improvements, future modelling will still predict a significant increase in congestion in all of the scenarios considered unless adequate infrastructure could be provided to address this.
- 3.70 The following areas have been identified as being of particular concern. More detailed modelling, based on revised development access, may change these conclusions. Of particular concern are the following:
- Fiveways Roundabout;
  - Hospital Roundabout.
  - the Western Corridor (particularly the Westland's Roundabout);
  - the Brimsmore area at the end of Thorne Lane (especially the A37 Ilchester Road roundabout).
  - all junctions between the development and the town centre along the A3088 Lysander Road and A30 West Coker Road.
  - along the A359, especially in the town centre;
  - the Reckleford Gyratory and Sherborne Road area.

- 3.71 Overall all scenarios show a significant detrimental impact on the highway network based on the 2011 model (which does not include any additional background traffic growth to 2026). Highway improvements in other parts of Yeovil may alter the overall conclusions, but any scenario is likely to lead to significant additional congestion in central Yeovil during peak times.

### Identifying the Cost

- 3.72 At present the highway, public transport and infrastructure improvements required to facilitate future levels of development specific in the Regional Spatial Strategy for the South West remain unidentified. When the location of future development has been identified or refined to more detailed areas of search then the highway and public transport, walking and cycling infrastructure and its potential costs could be identified. This needs to be based on traffic modelling, the identification and costing of highway improvement to address increase journeys, travel time and congestion.
- 3.73 Other Local Authorities have used this information to then relate the cost of addressing transport infrastructure impacts to individual developments based on standard Trip generation rates, like those used with the Yeovil Transport Model. A variety of highway, public transport improvements and sustainable travel initiatives could be required to address the infrastructure impact. Dependant on the most suitable approach to addressing future transport issues identified through further work, the subsequent cost of 11,400 dwellings can be identified and could potentially include the following:
- Highway Infrastructure
  - Bus Infrastructure (buses, shelters, boarders, Information displays and poles and flags);
  - Rail Infrastructure;
  - Walking Infrastructure;
  - Cycling Infrastructure, (showers, lockers, stands, routes covered and lit stands);
  - Public Information Terminals equipped with Real Time Passenger Information signs;
  - Real Time Passenger Information enabled buses;
  - Public Transport Information, (Talking timetables with digital voice announcement, Public Information Terminal, Signage);
  - Shopmobility (Scooters, maintenance, admin and accommodation);
  - Community Transport and demand responsive transport;
  - Car Clubs, (provision of vehicles , installation of in car telematics, club operation, Traffic Regulation Orders and free membership);
  - Bus promotion (including literature and websites)
  - Cycle Promotion (including training, discounted equipment, advice, maps and literature);
  - Walking promotion (advice, maps and literature);
  - Street lighting and innovative route lighting
  - Traffic Management
  - Car share parking
  - Park and Ride
  - Parking enforcement and demand management

## Utilities

- 3.74 Infrastructure services are provided by the utility companies, as required at their own cost with capital raised through private debt or equity capital in return for the income generated from sales to domestic and commercial customers. Some additional infrastructure required is paid for by developers, specifically servicing development sites.
- 3.75 Overall infrastructure impacts on utilities are not generally ones of impact and subsequent cost, but of whether the regulatory structure for the industries concerned is adequate to ensure that investment takes place at the appropriate time to facilitate growth. We consider this in relation to each of the utilities below.

## Overall Development Impact and Locational Issues

- 3.76 Western Power Distribution manages the 11kva and 33Kva electricity networks across many parts of the South West including Yeovil and is regulated by OFGEM.
- 3.78 A key issue is the statutory and regulatory requirement on distribution companies to provide a supply where it is economic to do so. Conversely this implies that they have no obligation to provide a supply where this would be uneconomic. There is an active debate between the regulator and distributors, about what is 'economic' in the circumstances. This lack of clear direction could act as a disincentive to distributors to provide a supply in any instance in which there is no proven end user demand, such as an allocation of land for development in advance of a developer commitment. Given the forward planning of 11,400 dwellings that will have a proven demand this is considered unlikely to impact on the delivery.
- 3.79 Broadly speaking, over the twenty year period of planned growth, there should not be a problem in delivering electricity capacity to support development at Yeovil. However, as development takes place hotspots can occur in specific locations where a lack of capacity at substations arises. This could be addressed at the time but is likely to be addressed systematically over time. The South West electricity network is fairly heavily loaded and some infrastructure is 40-50 years old. Western Power distribution are planning to replace substations due to age. When they are replaced capacity for growth will be built in where it is known that there will be demand to pay for that investment.
- 3.80 There is currently no 'national grid' in the water industry and thus water has to be collected, stored and distributed within the regions. The responsibility for this rests with a variety of water companies. For Yeovil, Wessex Water has responsible for water supply and sewerage.
- 3.81 The regulator for the water industry is OFWAT, and the principle underlying the regulation of the sector is that the various companies submit consumer pricing proposals for a five year period. The price structure subsequently agreed with the regulator rewards them with a predetermined return on:
- asset base and which effectively form their inheritance from the old nationalised system.
  - The cost of the additional investment that is required and which has been agreed between OFWAT and the company.
- 3.82 The regulator aims to balance the need to allow the water companies enough financial leeway to invest while protecting consumers from predatory pricing. In December 2004 OFWAT issued their Determination on Future Water and Sewage Charges for 2005-2010 and this effectively determines how much will be invested during this period. Within this additional investment, money will be spent on responding to:

- New regulations and standards such as the Urban Waste Water Treatment Directive, the Groundwater & Habitats Directives, the Water Framework Directive, the Integrated Prevention of Pollution and Control Directive and the Landfill Directive.
  - Increases in the water consumption of existing households.
  - Increases in the number of households where this is a factor.
- 3.83 For new development, Wessex Water can recover contributions from developers for a range of works, as set out in the Water Industry Act 1991. In some cases companies have allocated asset improvements attributable to new development, and hence recoverable from developers. The Water Company is planning for future population grow and at this strategic stage it is considered that suitable infrastructure will be provided.
- 3.84 The general picture at a sub regional level is that Wessex Water does not anticipate any major barriers in terms of funding to providing the necessary infrastructure/supply for water or sewerage. However, this is heavily caveated in that at a local level, capacity thresholds could be reached in specific locations as developments come forward, and without detailed information on the location and scale of development, these issues and subsequent abnormal costs cannot be identified.
- 3.85 The basis of the gas supply is a high pressure distribution system owned and run by National Grid Transco which is described by OFGEM as 'robust'. The local distribution systems also used to be owned by Transco, but some of these have now been sold such as in the South West to Wales and West Utilities.
- 3.86 While the UK's own natural gas supplies are diminishing, liquefied natural gas (LNG) can be imported by sea and through an interconnector from Belgium. Nationally investment in import infrastructure is increasing availability and it is predicted that future capacity will provide an additional 40 billion cubic metres a year. (Current indigenous production is around 100 billion cubic metres a year). Recent concerns about gas supplies have been at national level and focussed on a possible supply 'gap' before the import infrastructure is completed.
- 3.87 In summary, no problems are perceived in terms of the gas distribution network at a regional level and experience so far suggests that the cost to developers of arranging supplies in 'uneconomic' locations has not been significant. Nonetheless it is possible that such issues might arise in relation to specific sites and on a small scale in the future.
- 3.88 In summary, utilities provision is heavily regulated to ensure appropriate investment in address identified needs. In that context, future development at Yeovil should not be hindered by a lack of utility provision. The location of specific development could however impact on provision and require additional investment and potentially delay delivery.

## Recycling and Waste

- 3.89 New residential development brings new people into the district. This population increase will subsequently generate additional demand for facilities and services such as Recycling and Waste Management. Contributions will be sought from new development to ensure that South Somerset District Council meets recycling targets introduced in 2007 in the Government's Waste Strategy.

### Evidence

- 3.90 The Government's Waste Strategy 2007 sets National Targets for the recycling and composting of household waste and recovery of municipal waste. These include:

**Table RE1: National Waste Targets**

	Household Waste (Recycle / compost)	Municipal Waste (Recover)
<b>2010 Target</b>	at least 40% of household waste	53% of municipal waste
<b>2015 Target</b>	at least 45% of household waste	67% of municipal waste
<b>2020 Target</b>	at least 50% of household waste	75% of municipal waste

- 3.91 The South West Regional Waste Strategy 2004-2020 'From Rubbish to resource' aims to ensure that by the year 2020, over 45% of waste is recycled and reused, and less than 20% of waste produced in the region will be landfilled.
- 3.92 Somerset County Council adopted the Somerset Waste Local Plan 2011-2011 in February 2005. As a result the Waste Local Plan document now forms part of the statutory development plan for Somerset, and is a material consideration when local planning authorities in the County consider planning applications.
- 3.93 in 2008 over 50% of household waste is recycled across Somerset and 49% is disposed of at landfill.

### Overall Development Impact and Locational Issues

- 3.94 New residential development will have an infrastructure impact of waste and recycling services and facilities. It is projected that growth in waste production per household will remain static across Somerset to 2011. New residential development will affect the following waste and recycling services:
- Refuse collection
  - Recycling collection
  - Household Waste Recycling Centres
- 3.95 Refuse collection vehicles (RCV) conduct area based collections of refuse from all residential areas at a pass rate of 1000 households a day, with potential for 1200-1300 in a very dense urban setting. At present there is some capacity within collection services but this locational specific.
- 3.96 Recycling collection vehicles have a typical pass rate of around 700-800 households a day. In addition there is a requirement for dwelling on both collection services to be supplied with appropriate bins, timetables and incorporated into new or existing routes. At present recycling collection services collect paper, metal, glass and food. There is currently also a trial on plastic and cardboard in certain areas.

- 3.97 The final area of infrastructure impact will be the demand on Household Waste Recycling Centres (HWRC). At present the number of households in Somerset is approximately 232,000 and the number of HWRC is eighteen. This provides a ratio of one HWRC per 12,800 households. The South West regional average for HWRC provision is 1 per 22,900 people but this varies heavily between very urban and rural parts of the region and appears dependant on the accessibility of specific facilities and range of other waste and recycling facilities such as bottle banks. At present the capacity of Yeovil HWRC's is near capacity, therefore it is considered that a new facility will be required in line with existing standards of provision across Somerset.

**Table W1: HWRC Ratios across the South West:**

County and Unitary	HWRC	Households	Ratio
Devon	21	319,601	15219
Somerset	18	232,000	12889
Cornwall	12	232,439	19370
Dorset	12	178,065	14839
Wiltshire	10	183,753	18375
Gloucestershire	6	246,832	41139
Bristol City	2	167,123	83562
Bath and North East Somerset	3	73,252	24417
North Somerset	3	82,802	27601
South Gloucestershire	3	100,896	33632
Plymouth City	2	106,583	53292
Torbay	1	60,479	60479
Bournemouth	1	76,825	76825
Poole	1	61,623	61623
Swindon	1	77,512	77512
<b>South West Region</b>	<b>96</b>	<b>2199785</b>	<b>22914</b>

Source: Census 2001 household accommodation

- 3.98 Table W2 below sets out the requirement of provision from 11,400 new dwellings at Yeovil. It has assumed that refuse collection services will run five days a week every fortnight and recycling collection services 5 days a week, weekly:

**Table W2: Waste Facilities Requirement:**

	Standard	Dwellings	Provision
Refuse Collection Vehicles	1,000	11,400	1.2
Recycling Collection Vehicles	750	11,400	3
Household Waste Recycling Centres	12,800	11,400	0.9

- 3.99 Table W2 shows that to support 11,400 new residential dwellings there will be a requirement for 1 additional Refuse Collection Vehicle, 3 Recycling Collection Vehicles and 1 Household Waste Recycling Centre.

#### Identifying the Impact and Cost

- 3.100 The capital cost of Refuse Collection Vehicle is £130,000, whilst annual running costs (crew salary, fuel, depreciation, maintenance etc) is around £150,000 pa. Capital costs of Recycling Collection vehicles are lower at £80,000, but annual running costs would similar at £150,000.
- 3.101 To facilitate both refuse and kerbside collection services new dwellings will require bins, and

promotion information, including timetables. The cost of including a new residential dwelling on the refuse and recycling collection scheme is approximately £50 per dwelling. This comprises of the following elements:

- Wheelie bin and recycling box
  - kitchen waste bin and caddy
  - publicity material including instructions about the scheme and timetables;
  - the re-configuration and incorporation of new dwellings into existing collections;
- 3.102 The capital costs of a House Waste Recycling Centre would be approximately £1.5m to acquire land, develop and equip the site. Running costs are approximately £100,000 pa, but this excludes the cost of haulage and disposal of material deposited.
- 3.103 The additional cost of disposal of refuse allowing for 600kg per household per year (0.54 Tons) from 11,400 new properties at current cost of landfill (£50 per Ton) will be around £307,800 pa, rising to (66 per ton) and £406,296 pa in two years due to landfill tax escalator. Given the lead time to develop 11,400 dwellings it is considered that the higher figure would be more appropriate at this time acknowledging that the cost of household waste is actually likely to be even higher as the majority of dwellings will be built beyond 2010.
- 3.104 The study has assumed that the 11,400 dwellings will be built evenly between 2008 and 2026 at 633 dwelling per annum. Table W3 below sets out increasing cost of waste disposal over the plan period for illustrative purposes. It must be noted that the cost of waste disposal is addressed through general taxation, therefore the infrastructure cost of new development should not be responsible for the continuing cost of waste disposal in perpetuity.

**Table W3: Cost of Waste Disposal:**

Year	Dwellings	Waster generated in Tons	Cost per ton	Waste Disposal Cost
2009	633	342	50	17100
2010	1,266.67	684	50	34200
2011	1,900.00	1026	66	67716
2012	2,533.33	1368	66	90288
2013	3,166.67	1710	66	112860
2014	3,800.00	2052	66	135432
2015	4,433.33	2394	66	158004
2016	5,066.67	2736	66	180576
2017	5,700.00	3078	66	203148
2018	6,333.33	3420	66	225720
2019	6,966.67	3762	66	248292
2020	7,600.00	4104	66	270864
2021	8,233.33	4446	66	293436
2022	8,866.67	4788	66	316008
2023	9,500.00	5130	66	338580
2024	10,133.33	5472	66	361152
2025	10,766.67	5814	66	383724
2026	11,400.00	6156	66	406296

3.105 Table W4 below sets out the indicative cost of waste and recycling services for 11,400 dwellings at Yeovil:

**Table W4: Cost of Waste and Recycling Provision:**

	Provision	Cost	Cost
<b>Refuse Collection Vehicles</b>	1	£130,000	£130,000
<b>Recycling Collection Vehicles</b>	3	£80,000	£240,000
<b>Bins, Boxes and Promotion</b>	11,500	£50	£575,000
<b>Household Waste Recycling Centres</b>	1	£1,500,000	£1,500,000
<b>Disposal of Household Waste</b>	58,482 tons (2008 - 2026)	1,026 tons at £50 per ton and; 57,456 at £66 per ton	£3,843,396

3.106 Overall the infrastructure cost for Waste and Recycling infrastructure would be in the region of £2,445,000 in capital costs and up to £3.843,396 for dispose of waste over the construction period of 11,400 dwellings from 2008 to 2026.

## Flooding Risk

- 3.107 Built development has the potential to impact upon flood risk over the medium to longer term, for example by contributing to runoff. Development needs to consider the flood risk issues to ensure that areas of flood risk are considered and if development occurs within proximity to them, appropriate infrastructure is provided to ensure flood risk is mitigated.

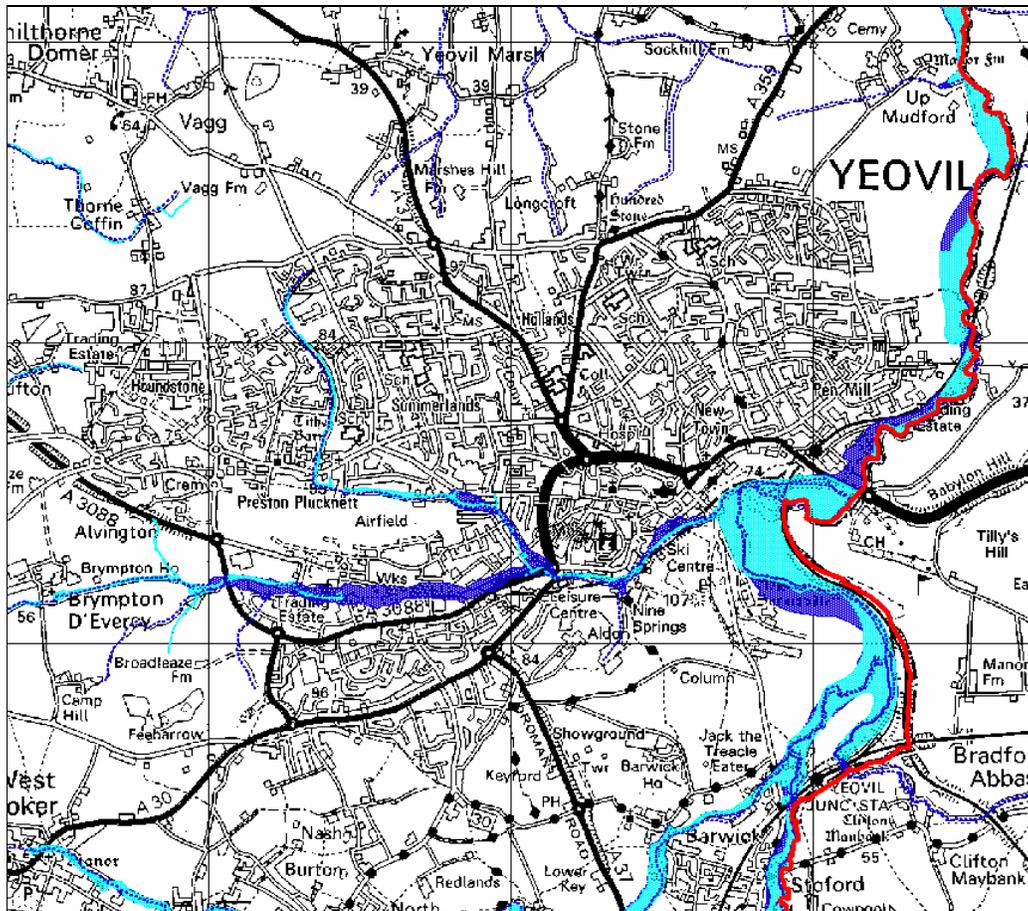
### Evidence

- 3.108 South Somerset District Council Strategic Flood Risk Assessment (2008) (SFRA) has been produced by Halcrow Group Limited in accordance with the Environment Agency and national planning guidance which includes Planning Policy Statement 25: Development and Flood Risk (2006) and A Practice Guide Companion to PPS25 (2007).
- 3.109 In respect of flood risk, the Draft RSS states that: "The risk of coastal and river floods will increase significantly over the plan period, due to the predicted effects of climate change, including rising sea levels and increased winter rainfall" (paragraph 7.2.19). Policy F1 prioritises the defence of existing properties from flooding and the location of new development in areas that have little or no risk from flooding.
- 3.110 At this stage specific development locations have not been identified therefore assessing the overall development impact of 11,400 dwellings cannot be established, however strategic flood risk areas have been identified within the SFRA to highlight areas that could be considered to have a significant flood risk and potentially an increased infrastructure cost.

### Overall Development Impact and Locational Issues

- 3.111 The Strategic Flood Risk Assessment presents flood risk maps that show the extent of land with a high chance of flooding (Zone 3) and land with a medium chance of flooding (Zone 2). Land outside of these areas is considered to have a low chance of flooding (Zone 1). The current SFRA Flood Zones are defined below.
- Flood Zone 1 – All areas that are not considered to be at risk of fluvial flooding. Whilst fluvial flooding is not a concern in these areas, the risk of flooding from other sources, such as surface water, groundwater, sewers and artificial sources (reservoirs) may still be an issue.
  - Flood Zone 2 – Shows areas at risk of flooding in an extreme fluvial flood event. This zone shows those areas with a risk of flooding between a 0.1% and 1% Annual Exceedence Probability (AEP).
  - Flood Zone 3a – This represents the area that is part of Flood Zone 3, but outside Flood Zone 3b (Functional Floodplain). This zone identifies the areas at risk from a 1% AEP fluvial flood event or a 0.5% AEP flood event caused by flooding from the sea.
  - Flood Zone 3b (Functional Floodplain) – The functional floodplain shows areas of land which are frequently flooded. For all areas it has been necessary to make conservative assumptions about the extent of the functional floodplain in the absence of historical flood outlines and detailed models.
- 3.112 The SFRA has considered Yeovil as an area of potential development growth. In summary the urban area of Yeovil intersects with the defined climate change Flood Zone 3b, Flood Zone 3a and is

affected by other sources of flooding. Overall, the development impact of flooding affects the eastern fringe of Yeovil alongside the River Yeo and through the town an out towards Brympton D Evercy. See map below:



- 3.113 It is considered that if future development is not to have a significant impact in terms of flood risk then area of high (Zone 3b light blue) should be avoided. PPS25 companion guide recommends that all areas within Zone 3 should be considered as functional flood plain unless or until an appropriate Flood Risk Assessment shows to the satisfaction of the Environment Agency that it can be considered as falling within Zone 3a (high risk).
- 3.114 The SFRA states that given the rarity of a Zone 2 event, it is very difficult to attach a high level of confidence in delineation of (Zone 2 dark blue). With such low confidence it is recommended that detailed modelling is undertaken as part of a Flood Risk Assessment when seeking to identify sites to accommodate future growth.

#### Identifying the Cost

- 3.115 The SFRA states that unless absolutely necessary, flood defences should not be used as an option to make development within higher flood risk areas permissible due to the risk of flood defence failure. If this approach is followed the infrastructure cost of future development for flood defences

should be minimal, although Sustainable Drainage Systems (SUDS) are encouraged and will require installation and ongoing maintenance costs. However, localised flood issues and urban areas already affected by flood risk zones could potentially require mitigation. The number of these dwellings cannot be identified at a strategic level.

- 3.116 The SFRA provides an indicative cost to construct and maintain flood defences. The costs are based on the flood risk management estimating guide published by the Environment Agency (Unit Cost Database, 2007).

Flood defences - Walls				
Wall height	<1.2m	1.2 to 2.1m	2.1 to 5.3m	Basis for cost rates: - average 185m plan length - minimum 25m length
Masonry wall (£/m run)	406	1500	1057	
Retaining wall* (£/m)	1565	1751	2286	
Wall* with cutoff (£/m)	916	2652	3031	
Wall* with piling (£/m)	-	3059	2671	
Flood defences - Embankment				
Volume	500-5,000	5,000-15,000	>15,000	- average 12m3 per metre run
Fill material (£/m3)	31-116	29-53	17-31	- average 700m length - average 12,000m3 volume

\*wall type - steel reinforced concrete

- 3.117 The cost rates quoted include:

- Contractors direct construction costs;
- Direct overheads - preliminaries and site costs (site establishment, insurance, profit, etc.);
- Minor works such as fencing, drainage, minor repairs to road surfacing, etc;
- Temporary works such as access tracks, pumping, cofferdams, river diversions, etc.

- 3.118 The cost rates exclude external costs such as client/consultants charges, land compensation, contingency, etc. In addition no flood defence works should be undertaken without appropriate mitigation such as compensatory flood storage. Otherwise ground level raising could increase the flood risk to the surrounding area.

- 3.119 By way of an example, the following cost build-up is presented for a flood defence wall:

- |  |          |
|--|----------|
| • Wall cost rate at £1500 per metre run over 100m  | £150,000 |
| • Compensatory storage to offset 'lost' floodplain | £25,000  |
| • Client/consultant charges                        | £20,000  |
| • Land compensation                                | £25,000  |
| • Contingency, 30%                                 | £66,000  |
| • Total capital scheme cost                        | £286,000 |

- 3.120 Maintenance cost of £1,430 every year (based on 0.5% of capital cost) and major refurbishment works cost of £143,000 every 25 years (based on 50% of capital cost), therefore the whole-of-life scheme could cost over 50 years £500,000 (capital, maintenance, refurbishment). It must be noted that this illustration is to allow a strategic level of assessment to be possible.

## Infrastructure Summary

- 4.1 The summary table below sets out the likely Infrastructure impact and potential cost (where available) for each infrastructure area addressed in the study:

Table 4.1: Summary Table

	Provision for 11,400 dwellings	Cost per item	Overall Cost
<b>Early Years Provision</b>	256 places*	£11,521 per place	£2,949,376
<b>Primary School (2 FE)</b>	4 primary schools	£8 - £10 M	£36,000,000
<b>Secondary School (8 FE)</b>	1 secondary schools	£35 million	£35,000,000
<b>Post 16 Provision</b>	172 places*	£19,894 per place	£3,421,768
<b>Special School Provision</b>	43 places*	£19,894 per place	£855,442
<b>Health Centres (1,500 sq m)</b>	2	£5 - £7 M	£12,000,000
<b>Equipped Play Space</b>	50,616 sq m	£179.86	£9,103,794
<b>Youth Facilities</b>	25,308 sq m	£141.27	£3,575,261
<b>Playing Pitches</b>	354,312 sq m	£16.36	£5,796,544
<b>Changing Rooms</b>	8,352 sq m	£2,151.32	£17,967,050
<b>Country Park</b>	506,160 sq m	£21.29	£10,776,146
<b>Theatre and Arts Centre</b>	1,518 sq m	£3,078.11	£4,674,048
<b>Synthetic Turf Pitches</b>	8,099 sq m	£139.24	£1,127,643
<b>Swimming Pools</b>	253 sq m	£13,176.24	£3,334,643
<b>Sports Halls</b>	1,518 sq m	£4,724.47	£7,174,013
<b>Libraries</b>	(2) 759 sq m	£2,892	£2,195,028
<b>Community Centre</b>	(5) 3,750 sq m	£1,749	£6,547,500
<b>Transport</b>	Transport solutions need detailed modelling design and costing		Cost can't be identified yet
<b>Utilities</b>	Abnormal utility costs are locationally specific		Cost can't be identified yet
<b>Refuse Collection Vehicles</b>	1 vehicle	£130,000	£130,000
<b>Recycling Collection Vehicles</b>	3 vehicles	£80,000	£240,000
<b>Bins, Boxes and Promotion</b>	11,500 (1 per dwelling)	£50	£575,000
<b>Household Waste Recycling Centres</b>	1 HWRC	£1,500,000	£1,500,000
<b>Disposal of Household Waste</b>	58,482 tons (2008 - 2026)	1,026 tons at £50 per ton and; 57,456 tons at £66 per ton	£3,843,396 over the 2008-2026 period
<b>Flood Risk Management</b>	Avoiding Flood zone 3a, 3b and 2; potential flood risk management costs.		Cost can't be identified

Note: \* average provision assumed.

- 4.2 Overall, the infrastructure impacts of 11,400 dwellings at Yeovil could be considerable. If this level of development were to be accommodated then the cost of appropriate infrastructure and community service provision will be significant if South Somerset District Council is to deliver them in a sustainable way. The indicative cost at this strategic stage is £168,786,654; this does not include the potential costs for transport, utilities or flood risk management.



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