# Cambridge City Council & South Cambridgeshire District Council

# Infrastructure Delivery Study

**Project Ref: a491**

**Doc Ref: R001/REV04**

**August 2012**

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# Document Control Sheet

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| | Name | Position | Signature | Date |
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| Revision | Date | Description | Prepared | Reviewed | Approved |
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| 05 | 06/08/2012 | Final Report | PJ | MR | JB |

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# 1 Introduction

**1.1.1** Baker Associates and Transport Planning International were commissioned to undertake an Infrastructure Delivery Study by Cambridge City Council and South Cambridgeshire District Council. However, since the start of the project Baker Associates merged with Roger Tym & Partners and Peter Brett Associates LLP and as a result the study has been completed by Peter Brett Associates (PBA) and Transport International (TPI).

**1.1.2** The output from this work is to provide Cambridge City Council and South Cambridgeshire District Council with an evidence base to support its planning policies on infrastructure and developer contributions.

**1.1.3** The objective of the IDS is to address two of the main objectives identified in the study brief. These objectives are to:

- Establish the existing capacity of infrastructure provision in Cambridge and South Cambridgeshire; and
- Identify what infrastructure will be required in order to serve proposed growth.

**1.1.4** It is important to note that the IDS represents a snap shot in time and uses information available at the time of writing. The strength of the study has been the engagement with infrastructure and community service providers to obtain first hand views on requirements. The IDS provides a basis to enable the Councils to support the development or implementation of their Local Plans.

**1.1.5** The IDS has examined three infrastructure categories, physical, social and green. **Table 1.1** overleaf sets out a list specific areas and indicative facilities to help define their scope.

Table 1.1: Scope of Infrastructure

| Physical Infrastructure Categories | Indicative Facility Types |
|---|---|
| Transport | Road<br>Rail<br>Bus<br>Cycling<br>Walking/public realm |
| Energy | Electricity<br>Gas |
| Water & Drainage | Water Supply<br>Waste Water<br>Drainage and Flood Alleviation |
| Waste (non-strategic) | Household Recycling Centres<br>Refuse and Recycling Vehicles<br>Bring Sites<br>Kerbside Collection Containers |
| Telecommunications | Broadband |
| **Social Infrastructure Categories** | **Indicative Facility Types** |
| Education | Childcare/Nurseries/Children's Centres<br>Primary Schools<br>Secondary Schools<br>Further Education<br>Special Schools |
| Health Care | General Practitioners<br>Hospitals<br>Ambulance |
| Leisure and Recreation | Swimming Pools<br>Sports Halls/Centres<br>Play Pitches |
| Community and Social | Libraries<br>Community Centres and Village Halls (including Arts and Culture)<br>Faith Facilities<br>Cemeteries and Crematorium |
| Emergency Services | Police<br>Fire |
| **Green Infrastructure Categories** | **Indicative Facility Types** |
| Green Space | Informal Open Space<br>Children's Play Space<br>Allotments<br>Natural Space<br>Public Rights of way |

**1.1.6** The IDS has defined what is meant by infrastructure for each category type, examined approaches to the identification of infrastructure requirements, provided context and support evidence where available and established costs, potential funding sources and delivery issues.

## 1.2 National Planning Policy Framework

**1.2.1** There are a number of key messages with the National Planning Policy Framework (NPPF) relating to the delivery of infrastructure, which is relevant to Cambridgeshire study. These include:

- **Key message 1:** Infrastructure is part of the soundness test for Local Plan Examination (para 182). Infrastructure now features as one of the tests of soundness that the Inspector will be looking at when examining local plans (para 182). The Inspector will also be looking for evidence of cross boundary working.

- **Key message 2:** Infrastructure planning needs to be part of the 'strategic priorities' for Local Plan preparation (para 156). Paragraph 156 outlines the strategic priorities framework for preparing the Local Plan. The strategic priorities include:

  - The provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk, coastal change management and the provision of minerals and energy (including heat); and

  - The provision of health, security, community and cultural infrastructure and other local facilities.

The NPPF goes on to say that Local Plans should plan positively for the development and infrastructure required in the area and based on cooperation with neighbouring authorities.

- **Key message 3:** New instructions on how to assess infrastructure are included in the NPPF (para 162 and 179). Previously, Local Authorities needed to assess requirements, cost and funding as defined in PPS12. Now the NPPF adds emphasis on quality, capacity, strategic infrastructure and cross border working.

**1.2.2** Paragraph 163 on infrastructure states that local planning authorities should work with other authorities and providers to assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, management, and its ability to meet forecast demands. It also states that LPAs should work with other authorities to take account of the need for strategic infrastructure including nationally significant infrastructure within their area.

**1.2.3** Paragraph 179 provides for a duty to cooperate and joint informal infrastructure and investment plans states that local planning authorities should work collaboratively with other bodies to ensure that strategic priorities across local boundaries are properly coordinated and clearly reflected in individual Local Plans. As part of this process, they should consider producing joint planning policies on strategic matters and informal strategies such as joint infrastructure and investment plans.

**1.2.4** Peter Brett Associates has worked with Cambridge City Council, South Cambridgeshire District Council, Cambridgeshire County Council and with the appropriate stakeholders and service providers to identify existing capacity (where possible and to ensure cross boundary issues are considered). A list of stakeholders is included in **Appendix 1**.

## 1.3 Objectives

**1.3.1** Specifically, the IDS has sought to:

- Highlight infrastructure capacity issues and existing capacity where possible, through the review of existing information and consultation with stakeholders;
- Identify the infrastructure impacts of additional development in generic and location specific terms for Cambridge and South Cambridgeshire;
- Illustrate the net infrastructure impact of new development and highlight significant issues;
- Provide information on the indicative cost of infrastructure;
- Identify public funding mechanisms and responsibility for delivery;
- Produce infrastructure delivery trajectories. This output is considered to be the crucial element of the study, as it draws together evidence and identifies infrastructure tipping points.

## 1.4 Important Caveats for the Infrastructure Delivery Study

**1.4.1** It must be noted that this study has been undertaken at a time of significant economic uncertainty and represents a snapshot in time. It is important to note that several assumptions have been made on planned provision and the future phasing of development that all represent an element of uncertainty.

**1.4.2** The IDS provides a focus for long term strategic financial decisions that will inevitably need to be refined and realigned as the process and time unfolds. In this context, there are a number of important points which should be borne in mind:

- The IDS is not a policy document. Information included in the assessment does not override or amend agreed/adopted strategies, policies and commitments which Cambridge City Council, South Cambridgeshire District Council or other infrastructure providers currently have in place.
- Infrastructure planning is continually evolving and infrastructure providers continue to review their plans over the life of proposed timescales of both the Core Strategy and Local Plan Review. Planned provision and subsequent infrastructure requirements are likely to evolve and this will need to be monitored by both councils. The IDS sets out a broad framework for infrastructure delivery to 2031 but with more detail and detailed costings in the first 5 to 10 years where available.

## 1.5 Structure of the Report

**1.5.1** **Section 2** sets out the methodology followed and **Section 3** the planned provision of growth within Cambridge and South Cambridgeshire. The aim of **Section 3** is to set out potential

growth levels and their phasing to enable testing. It should be noted that the planned provision is subject to potential change but is essential to allow infrastructure requirements to be identified.

**1.5.2** **Section 4**, **5 and 6** take physical, social and green infrastructure in turn, providing context and establishing how infrastructure requirements and costs have been identified and discuss funding and delivery issues.

**1.5.3** **Section 7** provides context on the infrastructure schedule contained in **Appendix 4** which set out the detailed infrastructure requirement for Cambridge, South Cambridgeshire and Cross Boundary urban extensions. **Section 8** provides analysis of potential un-ring fenced public funding sources.

**1.5.4** **Section 9** establishes the overall infrastructure situation based on identified information. It presents this for critical infrastructure and all five year time bands to illustrate infrastructure funding shortfalls for Cambridge, South Cambridgeshire, cross boundary urban extensions and infrastructure to support both Local Authorities. This section illustrates the overall funding deficit and sets out our recommendations on prioritisation to ensure the delivery of future development.

# 2 Methodology

**2.1.1** The method statement sets out the methodology we have followed to deliver the outputs sought and to meet the objectives defined in the brief. A methodology has been implemented that was driven by our understanding of the Councils' requirements, the proposed budget and the way the Councils will use the study in the future for their development of CIL charging schedules and to monitor infrastructure delivery.

**2.1.2** The approach combined the four stages set out in the brief into one main output. The IDS assesses the existing and new infrastructure requirements, costs, delivery and funding to produce an infrastructure schedule (database) and accompanying report.

## 2.2 Identify the Existing Infrastructure Needs and Future Infrastructure Requirements for Cambridge and South Cambridgeshire to 2031

**2.2.1** The primary objectives of the IDS are:

- Establish the existing capacity of infrastructure provision in Cambridge and South Cambridgeshire; and
- Identify what infrastructure will be required in order to serve proposed growth.

**2.2.2** The specific components of the IDS include the infrastructure schedule and IDS Report. The schedule includes a list of all identified infrastructure requirements including information on category, cost, delivery phasing, funding, responsibility and location. The schedule provides a spatial breakdown of requirements for Cambridge and South Cambridgeshire, including areas of major change and rural areas. The schedule is recorded in a Microsoft Access database.

**2.2.3** The infrastructure database enables the schedule to be a live document which can be updated over time. Specific reports can be created in Access to enable easy use of the results for particular geographic areas, infrastructure categories, timeframes or funding sources.

**2.2.4** Supporting the schedule is the IDS report, this provides a greater level of detail about how the study was conducted, assumptions made (e.g. planned provision tested) and detailed information for each infrastructure category on available capacity, approaches and standards used to calculate impacts, indicative costs, delivery processes and lead times and known funding.

**2.2.5** The methodology identifies a series of tasks; these tasks are set out below:

### Task 1 - Information and Assumptions

**2.2.6** Task 1 included an inception meeting to enable early discussion with the Councils' Project Team. This provided greater clarity on the objectives of the study and information available. At the meeting the following was confirmed:

- The objectives of the study through discussion of the work in relation to the on-going Local Plan work, and the views of the Councils;
- The scope of infrastructure categories for consideration in the study, based on the outline in the project brief, significance and priorities;
- The development scenarios to be tested including their spatial distribution; and
- An inventory of evidence documents, either known to the Councils or identified by the Consultants/Councils as a potential source of information.

### Task 2 - Evidence Gathering and Consultation

**2.2.7** A wide range of key stakeholders (see list in **Appendix 1**) were contacted throughout the study process with a view to identifying relevant evidence material.

**2.2.8** This resulted in significant documents and studies being identified, including experience from other local authorities. The IDS has sought to identify all sources of available information and make reference to them to support the identification of infrastructure requirements wherever appropriate. It should be noted that the evidence gathering process also highlighted gaps in available information, where this is the case we have referenced material from previous experience of similar studies elsewhere.

**2.2.9** Where possible the IDS has sought to identify the following information for all of the key infrastructure categories:

- Existing plans and strategies;
- The location of existing infrastructure facilities and their capacity;
- Approaches to the identification of infrastructure impacts/deficiencies; (standards);
- Costs of infrastructure (real and generic);
- Existing infrastructure schemes with and without funding;
- Potential funding sources and existing capital budgets; and
- The delivery process and lead times (phasing) and responsibility for deliver.

### Future Population and Dwelling Mix

**2.2.10** The potential impact for certain infrastructure categories such as community and green space, are directly related to the increase in population that proposed development will support.

**2.2.11** Office of National Statistics (ONS) population and household forecasts (2008 based) identify the population resident in households, but exclude a small percentage of the population that live in communal establishments, such as care homes. The growth in the population resident

in households is determined by several variables including birth and date rates, migration patterns, household formation rates and the supply and type of housing.

**2.2.12** To calculate the infrastructure requirements, Peter Brett Associates has assumed an indicative population per dwelling based on the forecast average household size in both Districts by 2031. ONS 2008 household projections suggest that the average household size could decline by approximately 0.12 per household in Cambridge and 0.15 per household in South Cambridgeshire by 2031. **Table 2.1** illustrates the projected change in average household size:

Table 2.1: Average Household Size 2001 to 2031

| Local Authority | Average Household Size 2001 | Average Household Size 2031 | Reduction 2011 to 2031 |
|---|---|---|---|
| Cambridge | 2.23 | 2.1 | 0.12 |
| South Cambridgeshire | 2.45 | 2.3 | 0.15 |

Source: Census 2001

**2.2.13** The Census 2001 identifies the average household size in South Cambridgeshire was 2.45 and within Cambridge it was 2.23 people per household. Based on the projected reduction in average household size it has been assumed that the population per dwelling set out in **Section 3** on planned provision will be 2.1 persons per dwelling in Cambridge and 2.3 persons per dwelling in South Cambridgeshire.

**2.2.14** It should be noted that Cross Boundary developments will therefore reflect a combination of both household assumptions based on the quantum of planned provision within each District.

**2.2.15** The IDS has also examined the existing dwelling mix to understand current dwelling size. **Table 2.2**, sets out the percentage of dwellings in each size bracket from both Cambridge and South Cambridgeshire based on assumptions on the number of rooms recorded in the 2001 Census:

Table 2.2: Dwelling sizes

| Local Authority | One Bed | Two Bed | Three Bed | Four Bed | Five+ Bed |
|---|---|---|---|---|---|
| Cambridge | 19.5% | 42.0% | 20.4% | 8.2% | 9.9% |
| South Cambridgeshire | 6.6% | 38.9% | 19.0% | 13.2% | 22.3% |

Source: Census 2001

**2.2.16** The IDS cannot predict the size of dwellings that will be constructed in the future and has therefore been unable to identify the variable impacts different dwelling sizes could have for each infrastructure category.

**2.2.17** The IDS considers the planned provision for Cambridge and South Cambridgeshire in **Section 3.** This sets out the level of development that has been tested in the IDS, but it should be noted that if planned provision changed, population levels could vary and subsequently effect the requirements for infrastructure.

### Task 3 - Infrastructure Schedule

**2.2.18** From all of the gathered information, the material has been entered into a Microsoft Access database which provides the opportunity to monitor progress of any/all projects and proposals and also to prepare reports relevant to various aspects and/or areas.

**2.2.19** The schedule includes the following information:

- Infrastructure category and sub category;
- Spatial location (where);
- Specific infrastructure requirement (what);
- Lead delivery and management organisation (who);
- Cost;
- Phasing in five year times bands (when);
- Sources of funding; and
- Prioritisation.

### On and off site provision

**2.2.20** Both Councils' preferred approach to green space and recreation provision is on site provision. The IDS has assumed that both leisure and recreation provision and green infrastructure provision will be provided on site in the first instance. Infrastructure requirements for Cross Boundary Urban Extensions and Northstowe specifically require on site provision and therefore the item have been identified as fully funded as a development cost.

**2.2.21** The IDS has been unable to determine if on site provision is possible within all individual development sites. The IDS therefore includes both on site land quanta and the indicative off site costs for identified requirements within Cambridge and South Cambridgeshire.

**2.2.22** The infrastructure database is also structured to identify the need for the particular infrastructure requirement. The Infrastructure database includes Infrastructure requirements:

- To meet existing deficiencies;
- To address the impact of new development;
- Infrastructure required to address existing deficiencies;
- Infrastructure required to support new development; and

- To support sustainable development, (the IDS has included infrastructure requirements that service providers have not been able to justify under strict CIL regulations tests but are considered desirable to support sustainable development).

**2.2.23** As well as local authority-wide infrastructure schedules setting out the infrastructure requirements over time and its delivery, other schedules have been produced for cross boundary urban extensions.

# 3 Planned Provision

**3.1.1** **Section 3** sets out the planned provision that has been examined in the study. This includes a breakdown of the location and level of planned residential and employment growth within Cambridge and South Cambridgeshire between 2010 and 2031.

## 3.2 Emerging/Adopted Development Plan Requirements

**3.2.1** Work is only just starting on the review of the Cambridge Local Plan and the Review of the South Cambridgeshire Core Strategy. Cambridge City Council has always objected to the levels of growth advocated in the 2008 adopted Regional Spatial Strategy (RSS). The intention to abolish RSS was confirmed when the Localism Bill was enacted (Nov 2011).

**3.2.2** In light of this the Cambridgeshire authorities agreed a joint position statement setting out a development strategy for Cambridgeshire in 2010. This comprised lower levels of provision than those shown in the adopted RSS of 14,000 dwellings for Cambridge and 21,000 dwellings for South Cambridgeshire between 2011 and 2031.

**3.2.3** It should be noted that work on the review of both the Cambridge Local Plan and adopted South Cambridgeshire Core Strategy is underway and therefore the situation on planned provision may be subject to change. The IDS will require regular updating to reflect any changes in the planned provision, with additions, amendments and removal of infrastructure schemes.

**3.2.4** To develop the planned provision for testing, a series of steps have been followed making several assumptions. The steps include:

- Identifying overall planned requirements;
- Identification of named settlements/sub areas within the existing Cambridge Local Plan and South Cambridgeshire Core Strategy;
- Identification of existing completions and commitments at April 2010;
- Using both Council's AMR 2010 trajectories to 2025 as the basis for phasing;
- Considering emerging information on provision to 2031 from work on the draft Cambridge SHLAA as at April 2011[1]; and
- Adding small sites and Northstowe dwelling information to 2031.

**3.2.5** **Table 3.1** overleaf sets out the proposed development for Cambridge City and South Cambridgeshire between 2010 and 2031. The first column of the table identifies projected completions for 2010-2011 because the IDS started one year before the base date of the new plans.

[1] The Infrastructure Study will be updated once the final SHLAA is adopted in 2012.

Table 3.1: Proposed Development 2010-2031

| District | Projected Completions 2010-2011 | Residential Requirement 2011-2031 | Employment Requirement 2011-2031 |
|---|---|---|---|
| Cambridge | 447 dwellings | 14,000 dwellings | 48.49 ha |
| South Cambridgeshire | 759 dwellings | 21,000 dwellings | 112.96 ha |

Source: 2010 Annual Monitoring Reports (Cambridge City Council and South Cambridgeshire District Council)

## 3.3 Main Settlements/Sub Areas

**3.3.1** A review of existing and emerging development plan documents was undertaken to identify the main settlements/sub areas which will be the location of planned provision. The following main settlements/sub areas have been included in the study:

- Cambridge
  - Station Area;
  - Area North;
  - Area East;
  - Area South; and
  - Area West/Central.
- South Cambridgeshire rural areas (secondary school catchments) and Northstowe:
  - Bassingbourn;
  - Comberton;
  - Cottenham;
  - Fulbourn;
  - Gamlingay;
  - Histon / Impington;
  - Linton;
  - Melbourn;
  - Sawston;
  - Swavesey; and
  - Northstowe.

- Cross boundary urban extensions:
  - Orchard Park/Arbury;
  - Cambridge East;
  - Southern Fringe; and
  - North West Cambridge.

## 3.4 Existing Completions and Commitments

**3.4.1** Existing housing and employment completions have been identified and separated from the development proposed. These dwellings or employment premises are already having an infrastructure impact (completions) or already have planning permission and potentially S106 agreements that restrict further contributions via S106 mechanisms.

**3.4.2** As part of the study, we have used information on sites under construction and those with full or outline permission available in the 2010 Annual Monitoring Reports (AMR). These commitments have been tested alongside remaining development requirements; however, it is important to make the distinction because infrastructure funding opportunities will have passed for these sites. It must be noted that allocations have not been included in this group if they do not have a planning permission attached.

## 3.5 Planned Provision

**3.5.1** The planned provision represents the development levels within the urban areas and within urban extensions identified. We have examined available material and agreed the planned provision for testing with planning officers. **Table 3.2** sets out the development options[2].

[2] The total number of dwellings shown in Table 4.5.1 includes projected completions in the first year 2010-2011 as well as forecast capacity for 2011-2031. The draft SHLAA content within this overestimates City capacity because it was based on an earlier estimate and distribution of potential SHLAA sites. This distribution will be updated once SHLAA is finlaised.

Table 3.2: Development Scenarios

| | **Residential to 2031** | **Employment to 2031** |
|---|---|---|
| **Cambridge Urban Area** | | |
| Station Area | Existing Commitments 369 dwellings<br>Allocations/Draft SHLAA & small sites 0 dwellings<br>Total = 369 dwellings, | Commitments 1.63 ha<br>Allocations 0.29 ha<br><br>Total = 1.92 ha Employment Land |
| Area North | Existing Commitments – 1,025 dwellings<br>Allocations/Draft SHLAA and small sites 152 dwellings<br>Total = 1,187 dwellings | Commitments - 0 ha<br>Allocations - 12.92 ha<br><br>Total = 12.92 ha Employment Land |
| Area East | Existing Commitments 412 dwellings<br>Allocations/Draft SHLAA and small sites 2,398 dwellings<br>Total = 2,810 dwellings | Commitments 0 ha<br>Allocations 1.45 ha<br><br>Total = 1.45 ha Employment Land |
| Area South | Existing Commitments 862 dwellings<br>Allocations/Draft SHLAA & small sites 905 dwellings<br>Total = 1,767 dwellings | Commitments 0 ha<br>Allocations 1.26 ha<br><br>Total = 1.26 ha Employment Land |
| Area West/Central | Existing Commitments 234 dwellings<br>Allocations/Draft SHLAA & small sites – 974 dwellings<br>Total = 1,208 dwellings | Commitments 8.54 ha<br>Allocations 0 ha<br><br>Total = 8.54 ha Employment Land |
| **Cambridge Total** | **Existing Commitments 2,912 dwellings**<br>**Allocations/Draft SHLAA & small sites – 4,429 dwellings**<br><br>**Total = 7,341 dwellings** | **Commitments 10.17 ha**<br>**Allocations 15.92 ha**<br><br>**Total = 26.09 ha Employment Land** |
| **South Cambridgeshire (Secondary School Catchment Areas) and New Settlement** | | |
| Bassingbourn Area | Existing commitments 32 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 32 dwellings | Commitments 3.25 ha<br>Allocations 0 ha<br>Total = 3.25 ha Employment Land |
| Comberton Area | Existing commitments 627 dwellings<br>Allocations and small sites 950 dwellings<br><br>Total = 1,577 dwellings | Commitments 9.23 ha<br>Allocations 0 ha<br><br>Total = 9.23 ha Employment Land |
| Cottenham Area | Existing commitments 136 dwellings<br>Allocations and small sites 0 dwellings<br><br>Total = 136 dwellings | Commitments 0.8 ha<br>Allocations and remaining residual land 8.79 ha<br>Total = 9.59 ha Employment Land |
| Fulbourn Area | Existing commitments 225 dwellings<br>Allocations and small sites 275 dwellings<br><br>Total = 500 dwellings | Commitments 0.78 ha<br>Allocations 0 ha<br><br>Total = 0.78 ha Employment Land |
| Gamlingay Area | Existing commitments 0 dwellings<br>Allocations and small sites 98 dwellings<br><br>Total = 98 dwellings | Commitments 0 ha<br>Allocations 0 ha<br><br>Total = 0 ha Employment Land |
| Histon / Impington Area | Existing commitments 274 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 274 dwellings | Commitments 0 ha<br>Allocations 0 ha<br>Total = 0 ha Employment Land |
| Linton Area | Existing commitments 16 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 16 dwellings | Commitments 15.05 ha<br>Allocations 0 ha<br>Total = 15.05 ha Employment Land |
| Melbourn Area | Existing commitments 472 dwellings<br>Allocations and small sites 39 dwellings<br><br>Total = 511 dwellings | Commitments 2.45 ha<br>Allocations 0 ha<br><br>Total = 2.45 ha Employment Land |

| | | |
|---|---|---|
| Sawston Area | Existing commitments 114 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 114 dwellings | Commitments 18.84 ha<br>Allocations 1.00 ha<br>Total = 19.84 ha Employment Land |
| Swavesey Area | Existing commitments 703 dwellings<br>Allocations and small sites 78 dwellings<br><br>Total = 781 dwellings | Commitments 14.21 ha<br>Allocations 0 ha<br><br>Total = 14.21 ha Employment Land |
| Northstowe | Existing commitments 0 dwellings<br>Allocations and small sites 9,500 dwellings<br><br>Total = 9,500 dwellings | Commitments 20 ha<br>Allocations 0 ha<br><br>Total = 20 ha Employment Land |
| **South Cambridgeshire Total** | **Existing commitments 2,599 dwellings**<br>**Allocations and small sites 10,940 dwellings**<br><br>**Total = 13,539 dwellings** | **Commitments 84.61 ha**<br>**Allocations 9.79 ha**<br><br>**Total = 94.4 ha Employment Land** |
| **Cross Boundary Urban Extensions** | | |
| Orchard Park/Arbury (Cambridge/ South Cambs) | Existing commitments 492 dwellings<br>Allocations/outline permissions and subject to S106 628 dwellings<br>Total = 1,120 dwellings | Commitments 1.36 ha<br>Allocations 3.64 ha<br><br>Total = 5 ha Employment Land |
| Cambridge East* (Cambridge) | Existing commitments 0 dwellings<br>Allocations and small sites 406 dwellings<br><br>Total = 406 dwellings | Commitments 0 ha<br>Allocations 0 ha<br><br>Total = 0 ha Employment Land |
| Cambridge East* (South Cambs) | Existing commitments 0 dwellings<br>Allocations and small sites – 2,235 dwellings<br>Total = 2,235 dwellings | Commitments 0 ha<br>Allocations 8 ha<br><br>Total = 8 ha Employment Land |
| Southern Fringe (Cambridge) | Existing commitments 3,443 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 3,443 dwellings | Commitments 17.9 ha<br>Allocations 0 ha<br>Total = 17.9 ha Employment Land |
| Southern Fringe (South Cambs) | Existing commitments 600 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 600 dwellings | Commitments 0 ha<br>Allocations 0 ha<br><br>Total = 0 ha Employment Land |
| North West Cambridge (Cambridge) | Existing commitments 3,695 dwellings<br>Allocations and small sites 0 dwellings<br>Total = 3,695 dwellings | Commitments 4.5 ha<br>Allocations 0 ha<br>Total = 4.5 ha Employment Land |
| North West Cambridge (South Cambs) | Existing commitments 0 dwellings<br>Allocations and small sites 2185 dwellings<br><br>Total = 2,185 dwellings | Commitments 0 ha<br>Allocations 0 ha<br><br>Total = 0 ha Employment Land |
| **Cross Boundary Urban Extensions Total** | **Existing commitments 8,636 dwellings**<br>**Allocations/outline permissions and subject to S106 5,048 dwellings**<br><br>**Total = 13,684 dwellings** | **Commitments 23.76 ha**<br>**Allocations 11.64 ha**<br><br>**Total = 35.4 ha Employment Land** |
| *Following the decision by Marshall not to redevelop Cambridge Airport, development levels at Cambridge East have been reduced. | | |

## 3.6 Phasing

**3.6.1** It has been essential to establish a phasing trajectory for new development to determine the timing of specific infrastructure requirements, tipping points and potential funding availability/shortfalls over time. **Table 3.3** sets out an indicative phasing for the planned provision. It must be noted that this trajectory is based on existing Local Authority Housing Trajectories, but adds emerging SHLAA information and Northstowe build out rates post 2025.

Table 3.3: Development Phasing

| Residential Phasing | Total to 2031 | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 |
|---|---|---|---|---|---|
| **Cambridge Urban Area** | | | | | |
| Station Area | 369 | 369 | 0 | 0 | 0 |
| Area North | 1187 | 328 | 509 | 166 | 184 |
| Area East | 2,810 | 1,000 | 769 | 493 | 548 |
| Area South | 1,767 | 1,063 | 278 | 202 | 224 |
| Area West/Central | 1,208 | 565 | 468 | 83 | 92 |
| **TOTAL** | **7,341** | **3,325** | **2,024** | **944** | **1,048** |
| **South Cambridgeshire (Secondary School Catchment Areas) and New Settlement** | | | | | |
| Bassingbourn Area | 32 | 32 | 0 | **0** | 0 |
| Comberton Area | 1,577 | 1,252 | 325 | 0 | 0 |
| Cottenham Area | 136 | 136 | 0 | 0 | 0 |
| Fulbourn Area | 500 | 320 | 130 | 50 | 0 |
| Gamlingay Area | 98 | 98 | 0 | 0 | 0 |
| Histon / Impington Area | 274 | 274 | 0 | 0 | 0 |
| Linton Area | 16 | 16 | 0 | 0 | 0 |
| Melbourn Area | 511 | 351 | 160 | 0 | 0 |
| Sawston Area | 114 | 114 | 0 | 0 | 0 |
| Swavesey Area | 781 | 646 | 135 | 0 | 0 |
| Northstowe | 9,500 | 450 | 2,350 | 3,250 | 3,450 |
| **TOTAL** | **13,539** | **3,689** | **3,100** | **3,300** | **3,450** |
| **Cross Boundary Urban Extensions** | | | | | |
| Orchard Park/Arbury | 1,120 | 717 | 403 | 0 | 0 |
| Cambridge East | 2,641 | 140 | 901 | 1,600 | 0 |
| Southern Fringe | 4,043 | 2,178 | 1,865 | 0 | 0 |
| North West Cambridge | 5,880 | 1,713 | 3,212 | 955 | 0 |
| **TOTAL** | **13,684** | **4,748** | **6,381** | **2,555** | **0** |
| **Overall Total** | **34,564** | **11,762** | **11,505** | **6,799** | **4,498** |

## 3.7 Infrastructure Categories

**3.7.1** For the IDS, 'infrastructure' includes all types of infrastructure necessary to deliver the development plan objectives. The IDS, therefore, takes account of requirements ranging from roads to schools to play space. Three broad categories of infrastructure are covered: physical, community / social and green. **Table 3.4** shows the different topics of infrastructure under each broad heading.

Table 3.4: Scope of the Infrastructure

| Physical Infrastructure | Community / Social Infrastructure | Green Infrastructure |
|---|---|---|
| Transport and Access | Education | Public open space and green space |
| Energy Supply and Generation | Health | Natural Space and green corridors |
| Water Supply/Drainage and Flood alleviation | Sport and recreational facilities | |
| Waste Management | Community and Social | |
| Telecommunications | Emergency | |

**3.7.2** The study has sought to identify and where possible, quantify the infrastructure requirements, but also distinguish why it is required. These largely fall into three groups:

- Existing deficiencies;
- Related to new development (both cumulative and direct infrastructure); and
- Infrastructure to support sustainable development.

**3.7.3** Each infrastructure topic has been taken in turn, examining the infrastructure items required within each area, e.g. primary, secondary and special school. **Sections 4**, **5** and **6** examine the following areas:

- Context, existing strategies and existing capacity to accommodate growth;
- Approaches to identify infrastructure requirements;
- Approaches to calculate costs; and
- Funding and delivery arrangements.

# 4 Physical Infrastructure

**4.1.1** **Section 4** considers physical infrastructure, including transport and access, public realm, energy generation, supply and distribution, water supply, sewerage, flood and drainage, household waste and recycling and telecommunications.

## 4.2 Physical Infrastructure – Transport and Access

**4.2.1** This section of the IDS gives a strategic view as to the existing transportation situation in Cambridge and South Cambridgeshire, with the identification of the existing transport infrastructure needs and future transport infrastructure requirements to support the housing allocation in the City and District to 2031.

### Context

**4.2.2** A challenge for the development allocations in Cambridge and South Cambridgeshire is to minimise the negative impacts on the transport system. The aim for all developments is to travel using sustainable modes as a priority over the use of the private car. As noted in the Cambridge Local Development Framework (LDF) Annual Monitoring Report (AMR) 2010, the priority of travel for the urban extensions around Cambridge will be by non-car modes. This is particularly the case in light of the withdrawal of the A14 improvement scheme following the Government's Spending Review in 2010, which impedes the development of growth sites including Northstowe and National Institute of Agricultural Botany 2 and places an even greater emphasis on the need to provide sustainable travel choices in order to successfully deliver the development.

**4.2.3** The planned provision at all sites must be delivered in a way that is sustainable in terms of transport, including on-going operating costs and levels of subsidy. This requires a close co-ordination of land use and transport planning. This is a particular challenge under the present economic climate, with the Spending Review having resulted in significant cuts in transport budgets. New funding streams have since been announced, however; including the Growing Places Fund, Bus Areas Fund and Local Sustainable Transport Fund, which open up opportunities for the delivery of key transport infrastructure to unlock development in Cambridge and South Cambridgeshire.

**4.2.4** A long-term transport strategy for Cambridge and South Cambridgeshire is being prepared by Cambridgeshire County Council in partnership with Cambridge City Council and South Cambridgeshire District Council. The Strategy will consider development implications and improved accessibility to 2031 and beyond. Various transport policy documents exist at the County, District and City level, including:

- Cambridgeshire Third Local Transport Plan 2011-2026 (LTP3);
- Cambridgeshire Long Term Transport Strategy (LTTS); and
- Cambridge and South Cambridgeshire Local Plans.

**4.2.5** The policies and objectives laid out in Cambridgeshire's LTP3 seek to address existing transport related problems and to ensure that planned large-scale development can take place in the County in a sustainable way. The LTP has the following overarching vision for the future of Cambridgeshire:

*"Creating communities where people want to live and work: now and in the future".*

**4.2.6** The LTP has translated the issues and problems in Cambridgeshire into a set of eight challenges for transport, which the LTP seeks to address. These are as follows:

- Challenge 1: Improving the reliability of journey times by managing demand for road space, where appropriate and maximising the capacity and efficiency of the existing network.
- Challenge 2: Reducing the length of the commute and the need to travel by private car.
- Challenge 3: Making sustainable modes of transport a viable and attractive alternative to the private car.
- Challenge 4: Future-proofing our maintenance strategy and new transport infrastructure to cope with the effects of climate change.
- Challenge 5: Ensuring people – especially those at risk of social exclusion – can access the services they need within reasonable time, cost and effort wherever they live in the county.
- Challenge 6: Addressing the main causes of road accidents in Cambridgeshire.
- Challenge 7: Protecting and enhancing the natural environment by minimising the environmental impact of transport.
- Challenge 8: Influencing national and local decisions on land-use and transport planning that impact on routes through Cambridgeshire.

**4.2.7** On a District level, the South Cambridgeshire Core Strategy, was adopted in 2007. South Cambridgeshire Council is currently reviewing the Core Strategy DPD, along with the Site Specific Policies DPD and the Development Control Policies DPD, in order to prepare a single South Cambridgeshire Local Plan. Preparation of the evidence base for the Plan is underway with an Issues and Options consultation planned for summer 2012.

**4.2.8** The existing Core Strategy DPD includes a number of objectives relating to transport:

- ST/b: To locate development where access to day-to-day needs for employment, shopping, education, recreation, and other services is available by public transport, walking and cycling thus reducing the need to travel, particularly by private car.
- ST/c: To create new and distinctive sustainable communities on the edge of Cambridge connected to the rest of the city by high quality public transport and other non-motorised modes of transport which will enhance the special character of the city and its setting.
- ST/d: To create a sustainable small new town close to but separate from the villages of Longstanton and Oakington connected to Cambridge by a high quality rapid transit system along the route of the disused St Ives railway. The new town will make best use of previously developed land.

**4.2.9** Within Cambridge, the Cambridge Development (Core Strategy) Strategy Issues and Options report was published in 2007. Further production of the Strategy has been stopped as result of the change in Government, the changes to the Planning policy system and the Localism Act. Strategic

objectives of the Strategy of relevance to transport were as follows:

- Option 2b: To ensure that new development is in locations that are sustainable in terms of the relationship between housing, jobs, services and public transport and are not at risk of flooding; and
- Option 2c: To reduce the need to travel, particularly by car, and improve accessibility by more sustainable modes of transport such as walking, cycling, and public transport.

**4.2.10** Relevant objectives from the Local Plan in relation to transport are:

- To minimise the distances people need to travel, particularly by car;
- To maximise accessibility for everyone, particularly to jobs and essential services; and
- To minimise adverse effects of transport on people and the environment.

**4.2.11** A Transport Strategy for Cambridge and South Cambridgeshire is currently being prepared by the County, City and District Councils. The Transport Strategy for Cambridge and South Cambridgeshire needs to take account of this predicted growth to ensure that current and future transport needs are met, that people can access work and services, and that the character of the area can be preserved. This will help to ensure that people in the area continue to enjoy a high quality of life. It is intended that the strategy will be adopted as part of the Local Transport Plan in autumn 2013.

**4.2.12** A Rural Transport Strategy is proposed to be produced during the period of LTP3, to provide additional opportunities for improving sustainable travel in rural areas including South Cambridgeshire.

**4.2.13** Furthermore, Cambridgeshire County Council is currently in process of reviewing and updating the Cambridge Area Corridor Transport Plans, which give guidance on mitigating measures necessary as part of new developments. The work should be completed in August 2012.

**4.2.14** In order to deliver the proposed development growth in Cambridge and South Cambridgeshire in line with these existing policies and guidance, emphasis on changing travel behaviour, coupled with an enhancement of infrastructure and services and effective land use planning, will be an important means to achieving implementation of sustainable growth.

**4.2.15** The existing transportation situation for Cambridge and South Cambridgeshire, including capacity issues on the transport networks and proposals for improving services and facilities, their costs and funding mechanisms, have been identified through a range of methods. An extensive literature review has been undertaken, comprising:

- Review of key documents including the LTP3, LTTS, the Local Sustainable Transport Fund (LSTF) bid;
- Review of emerging regional reports discussing proposed locations for housing and employment growth; and
- Consultation with key transport contacts within Cambridgeshire County Council.

### Cambridge

**4.2.16** Cambridge is a compact city with a population of around 119,100 (Cambridge AMR 2010), located around 60 miles northeast of London. Cambridge is well served in terms of strategic transport connections, with direct links to the A14 and M11 providing access to London and the eastern port of Felixstowe. The city is within an hour's drive of the international airports of Stansted and Luton and less than two hours from Gatwick, East Midlands and Birmingham Airports. Furthermore, Marshall Airport Cambridge UK is a privately owned airport based in Cambridge and benefits from direct access to London, the East of England and beyond.

**4.2.17** As a small city, cycling and walking are attractive and popular in Cambridge. Cambridge was awarded National Cycling Town status in 2008 which saw £7.2 million spent on cycling improvements in the city and its surrounding villages until March 2011. Cambridge City Council is a partner in the Cycle Cambridge programme, designed to get more people cycling, more safely, more often in Cambridge and the surrounding villages. The overall proportion of trips made by bicycle in the city has increased from 17% to 21% since the Cycle Cambridge programme commenced in 2007, showing the that cycling levels can be increased, even from levels that were already the highest in the UK (LSTF, 2011).

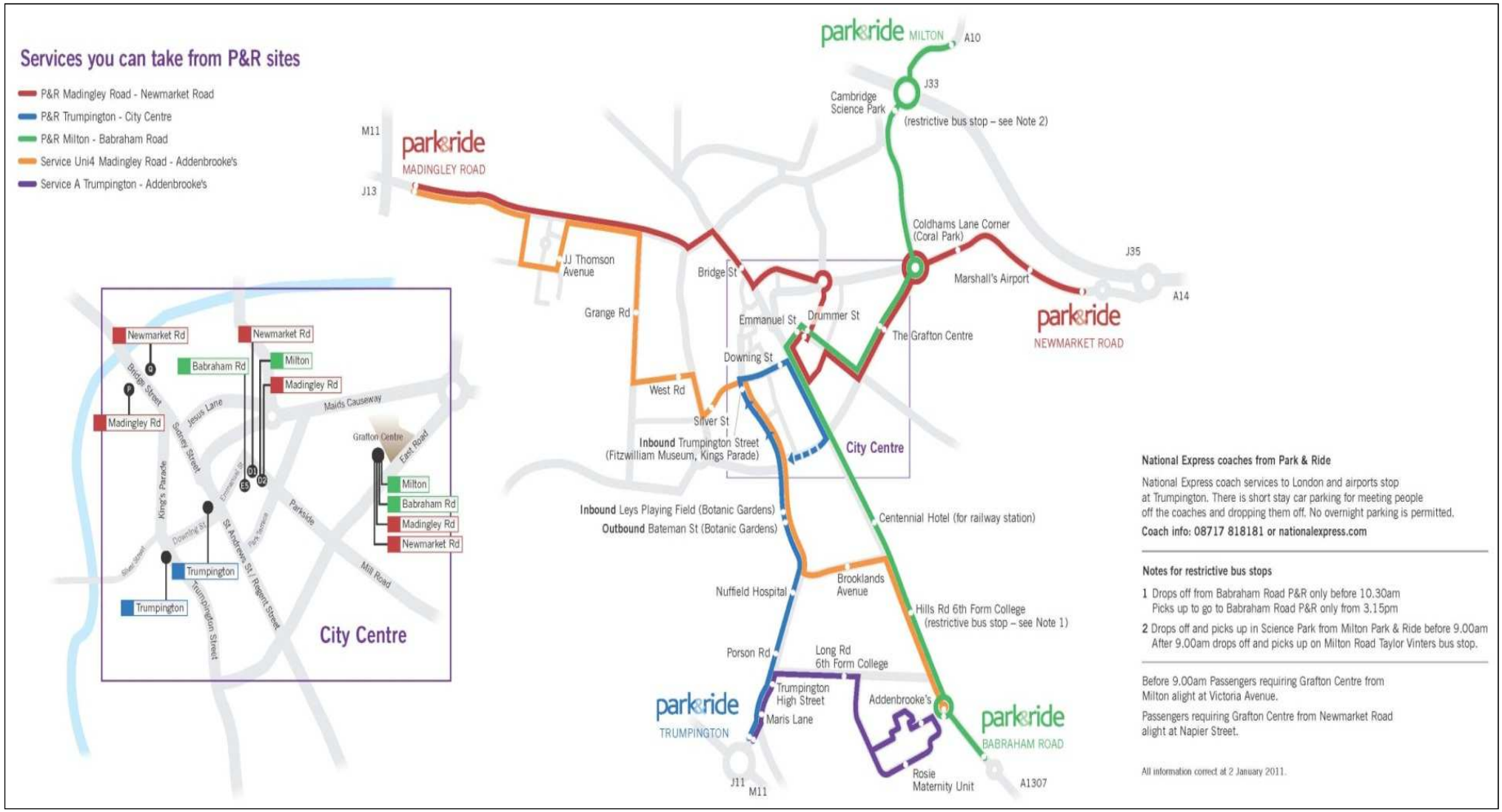
**4.2.18** Travel by bus is also popular, and Cambridge is one of the few areas outside London where bus patronage is growing. A bus map for Cambridge is shown in **Appendix 3**. Cambridge has five Park & Ride sites; at Babraham Road, Madingley Road, Milton, Newmarket Road and Trumpington (see **Figure 4.1**), providing space for over 4,500 cars. The capacity of each Park & Ride site is shown in **Table 4.1**.

Table 4.1: Cambridge Park & Ride Capacity

| Site | Number of Current Spaces |
|---|---|
| Babraham Road | 1,043 |
| Madingley Road | 930 |
| Milton | 774 |
| Newmarket Road | 873 |
| Trumpington | 1,340 |
| Total | 4,960 |

**4.2.19** Park & Ride patronage has seen significant growth across Cambridgeshire since 2001 (71%) and expansion in the capacity of Cambridge's Park & Ride sites has trebled Park & Ride usage in 10 years, with more than 1.6 million trips now made annually on these city services. The number of people using the bus within, in and out of the city has more than doubled since 2001. The Babraham Road Park and Ride site is due to be expanded.

Figure 4.1: Cambridge Park & Ride Sites




Source: Cambridgeshire County Council

**4.2.20** The compact nature of Cambridge contributes to the fact that it suffers from a number of local transport problems, particularly in relation to traffic congestion on radial routes and in public transport capacity in the centre. As noted in the Cambridge 'Issues and Options' Paper (2007), approximately 79,000 jobs are based in the city with just over 35,500 of these being held by residents of the city, so people commuting into the city to work result in additional pressures on already constrained transport infrastructure. However, despite a growing population, private car traffic in Cambridge has remained stable for the past 15 years (LSTF, 2011).

### South Cambridgeshire

**4.2.21** The District of South Cambridgeshire is located centrally in the east of England region and sits around Cambridge. There is a strong relationship between the District and the city in terms of services, facilities and employment. South Cambridgeshire is largely rural and comprises over 100 villages, none currently larger than 8,000 persons, and is surrounded by a ring of market towns just beyond its borders, including Royston (Hertfordshire); Saffron Walden (Essex); Newmarket and Haverhill (Suffolk); St Neots; St Ives; Huntingdon; Chatteris; and Ely. Together, Cambridge, South Cambridgeshire and the market towns form the Cambridge Sub-Region.

**4.2.22** South Cambridgeshire benefits from strategic transport links including the A14, M11 and various railway stations, including Cambridge and local stations in Shelford, Whittlesford, Foxton, Shepreth, Meldreth and Waterbeach. In many parts of the District public transport is good, especially along the main roads or corridors. However, there are several villages where access to a bus or train service is poor or absent, with only six villages served by a railway station. The rural nature of the District means that people have to travel long distances to access the services and leisure facilities they need, and there is an increased reliance on car travel.

**4.2.23** Bus patronage across Cambridgeshire has grown by over 45% over the past ten years (LSTF, 2011). However, this growth across the county has to an extent disguised the fact that in much of the rural area, the network requires significant levels of subsidy to maintain a service. Bus services in Cambridge, on the interurban corridors and larger villages remain commercially viable, although rural accessibility is at risk with the removal of subsidy in the current financial climate (LSTF, 2011). A bus map for Cambridgeshire is shown in **Appendix 3**.

### Travel to Work

**4.2.24** **Table 4.2**, extracted from the Cambridgeshire Development Study (2009), shows journey to work (JTW) movements from Cambridge and South Cambridgeshire, as well as other districts and market towns in the rest of the County. The salient points to note are:

- Cambridge has largely self-contained working population (71% of residents working within the city), with a small proportion commuting out into South Cambridgeshire (16%) and outside of the County (10%);
- Around half the resident population of South Cambridgeshire remain in the District to work, with 30% commuting to Cambridge; and
- South Cambridgeshire attracts the remainder of its working population from outside Cambridgeshire (27%).

**4.2.25** This indicates that the transport links within the city and the District, as well as links between the two, are of particular importance for journeys to work.

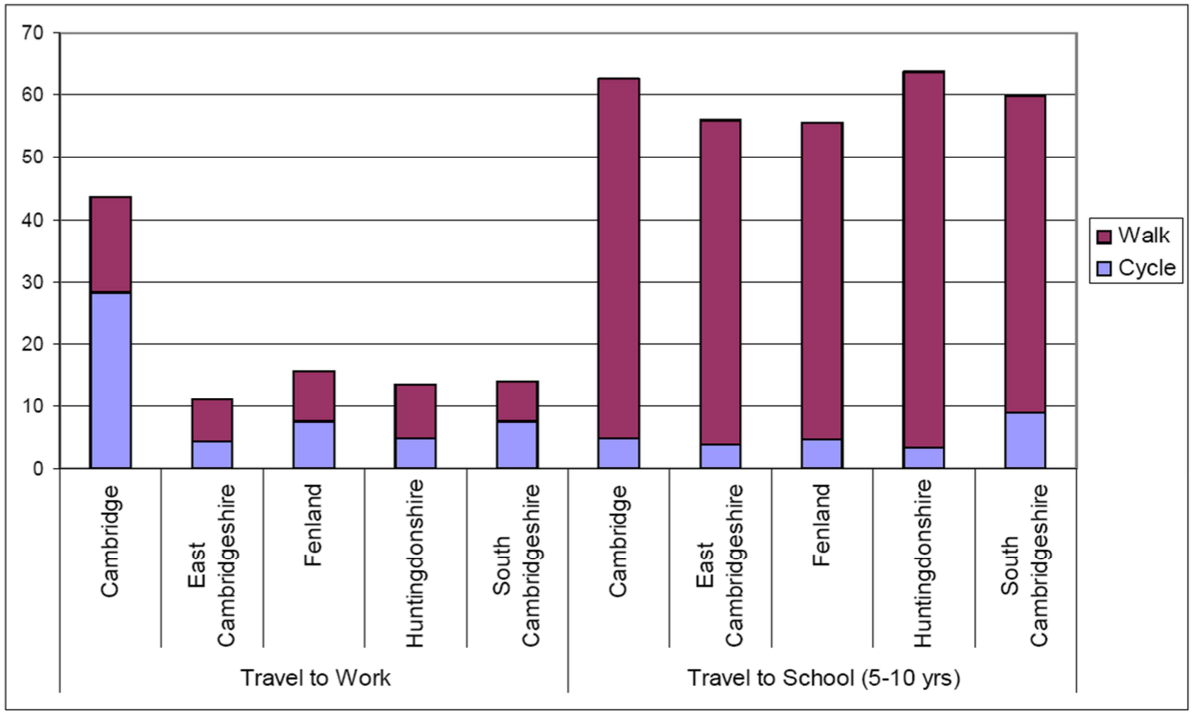
Table 4.2: Distribution of Journey to Work Trips by District and Market Town (2001 Census)

| Residence | Place of Work | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cambridge | East Cambs | Fenland | Hunts | South Cambs | Outside Cambs | Wisbeach | March | Ely | St Neots | Hunt'n | St Ives | P'boro |
| Cambridge | 71% | 1% | 0% | 1% | 16% | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| East Cambs | 17% | 50% | 1% | 2% | 11% | 19% | 0% | 0% | 15% | 0% | 1% | 0% | 1% |
| Fenland | 2% | 2% | 63% | 6% | 2% | 25% | 21% | 17% | 1% | 0% | 2% | 1% | 14% |
| Hunts | 5% | 1% | 1% | 65% | 6% | 22% | 0% | 0% | 0% | 10% | 16% | 7% | 5% |
| South Cambs | 30% | 1% | 0% | 3% | 50% | 16% | 0% | 0% | 0% | 0% | 1% | 0% | 0% |
| Outside Cambs | 26% | 8% | 15% | 24% | 27% | 0% | 8% | 2% | 2% | 4% | 5% | 1% | NA |
| Total | 25% | 8% | 10% | 22% | 20% | 16% | 4% | 2% | 2% | 3% | 5% | 2% | 3% |
| Wisbeach | 1% | 1% | 75% | 1% | 0% | 22% | 65% | 4% | 0% | 0% | 1% | 0% | 6% |
| March | 3% | 2% | 72% | 4% | 2% | 16% | 4% | 56% | 1% | 0% | 1% | 0% | 8% |
| Ely | 18% | 56% | 1% | 2% | 10% | 14% | 0% | 0% | 45% | 0% | 1% | 0% | 1% |
| St Neots | 4% | 0% | 0% | 64% | 5% | 26% | 0% | 0% | 0% | 47% | 6% | 1% | 1% |
| Huntingdon | 5% | 0% | 1% | 75% | 5% | 14% | 0% | 0% | 0% | 2% | 49% | 3% | 2% |
| St Ives | 11% | 1% | 1% | 67% | 10% | 10% | 0% | 0% | 0% | 1% | 12% | 36% | 2% |

Source: Cambridgeshire Development Study (2009), Table 7.3

**4.2.26** As shown in **Figure 4.2**, a significant proportion of JTW trips in Cambridge are made either on foot or by cycle (around 43%). In South Cambridgeshire, the level of cycling to work is around 7% with around 6% of journeys made on foot. This may be expected given that Cambridge is largely self-contained, compared to the rural nature of South Cambridgeshire where car reliance is a factor.

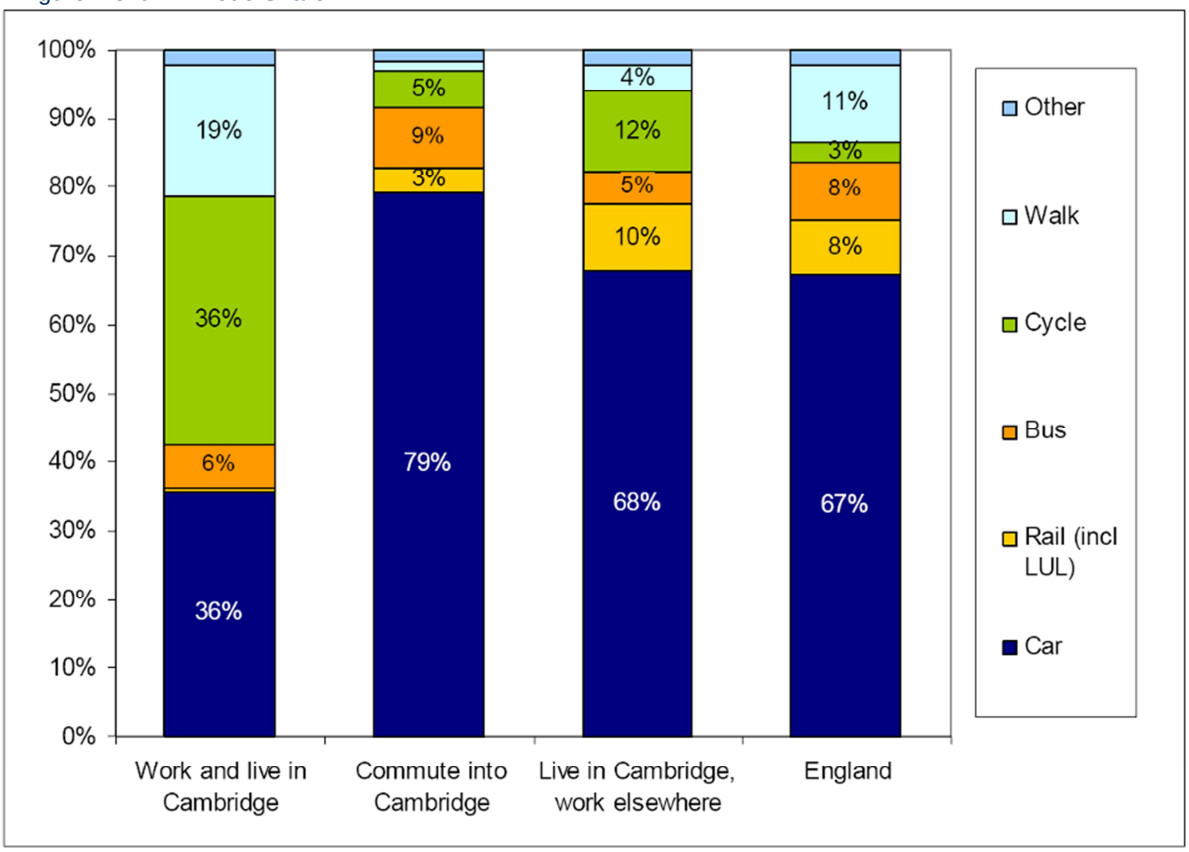
Figure 4.2: Levels of Walking and Cycling in Cambridgeshire




Source: Cambridgeshire LTP3, Figure 3.2

**4.2.27** To look in more detail at Cambridge, 2009 figures (**Figure 4.3**) again suggest that the majority of journeys within the city are on foot or by cycle (around 55%), with commuting journeys both in and out of Cambridge tending to be car (79% and 68%, respectively).

Figure 4.3: JTW Mode Share




Source: Access To and Around Greater Cambridge (2009), Figure 3.9

**4.2.28** A relatively small proportion of Cambridge's population travel to work within the city by public transport (6%), compared to around 12% commuting in to the city from elsewhere and 15% travelling outside the city for work. The public transport catchment for trips into Cambridge is roughly the area bounded by the A14 and M11, with the majority of trips being made from the northern part of this area (e.g. Milton, Histon, Impington) where the Citi bus network offers good coverage.

**4.2.29** In terms of commuting distance, around 45% of journeys to work in Cambridge are under 5 km (31% in South Cambridgeshire), which suggests that there is significant potential for mode shift to more sustainable modes (particularly walking and cycling) for these shorter journeys.

### Constraints and Existing Infrastructure Proposals

**4.2.30** Various proposals already exist to improve transport infrastructure in Cambridge and South Cambridgeshire. At a strategic level, these include the Local Sustainable Transport Fund (LSTF), Better Bus Areas Fund (BBAF) and Project Cambridge. Proposals addressing specific infrastructure type constraints (highways, rail, bus, walk & cycle) are set out in the following subsections.

**4.2.31** The Government Introduced the Local Sustainable Transport Fund (LSTF) in November 2010. The LSTF, worth £560 million, is available for packages of transport measures focused on addressing the aims of economic growth and reducing carbon emissions.

**4.2.32** In May 2012, the County Council were successful in a second round LSTF bid. The bid was developed with a wide range of partners from across the public, private and third sectors, and

focuses on walking, cycling, community transport, transport interchange and the promotion and marketing of sustainable travel. The bid was successful in securing up to £5 million additional investment by 2015 and unlocking £4.22 million in match funding.

**4.2.33** Project Cambridge is a £25 million scheme put forward by Cambridge City Council and Cambridgeshire County Council in autumn 2009 to improve road infrastructure and public realm between Cambridge Rail Station and the City Centre. The aim is to make it easier to get in and out of Cambridge by bus, by bike or on foot. The proposed scheme comprises a major revamp on the one-mile stretch along Station Road, Hills Road and Regent Street, including a redesign of all major road junctions. The scheme would be funded through 'Tax Increment Financing' (TIF); that is, by borrowing the £25 million which would be repaid over the next 25 years using increases in business tax revenue.

**4.2.34** Whilst proposals made at that time were not taken forward, in September 2010 the Deputy Prime Minister announced that the Coalition Government will give local authorities the go-ahead to raise funds via Tax Increment Financing. The Government confirmed their intention to proceed with the introduction of TIF in the 2011 Budget, so the proposals for Project Cambridge have the potential to come back online in the future.

**4.2.35** The following subsections detail the existing constraints currently experienced in Cambridge and South Cambridgeshire by infrastructure type (highways, rail, bus, walk & cycle) along with any existing proposals for improvement and a table of funded schemes. This highlights gaps where further infrastructure is required to support the housing growth.

### Highways Constraints and Existing Proposals

**4.2.36** Cambridgeshire is experiencing increasing congestion on the roads, particularly on the main corridors into Cambridge and the inner radial routes, due to high car modal share. This is due in part to high house prices (in Cambridge, the average house price is nine times the average salary) forcing many people working in the city to live further away and commute in; the rise in employment land rents which has forced some businesses to locate further out of Cambridge; and increasing prosperity which has contributed to an increase in the number of cars on the road. The ability and desire for Cambridge to accommodate additional car commuting traffic is limited due to parking constraints and the impact that further growth would have on the City Centre environment.

**4.2.37** Particularly congested links include:

- A14 – particularly between Cambridge and Huntingdon;
- A10 – particularly out of the District to Ely in the north and Royston in the southwest; and
- M11 – congestion during the morning peak on the M11 has been identified as a significant constraint to both access into Cambridge and strategic access to Stansted Airport.

**4.2.38** To help ease the severe congestion on the A14 corridor, the Department for Transport (DfT) and HA proposed a Major Scheme in 2009 ('A14 Ellington to Fen Ditton') including stretches of widening and creation of major interchanges. The scheme was withdrawn in 2010 following the Government's Spending Review as it was considered "simply unaffordable under any reasonable future funding scenario" (HA).

**4.2.39** The Government recognises the importance of addressing the congestion on the A14 to support

the continued economic success of the Cambridge area and to facilitate the major housing development planned to support that growth. In the Autumn budget statement the Chancellor announcement £20 million towards immediate improvements to the A14 and advised that it would undertake a Joint Study with local partners to identify cost effective and practical proposals that bring benefits and relieve congestion, looking across modes to ensure that sustainable proposals are developed. It is expected that an announcement on progress will be made before the summer recess. The immediate funding will pay for junction upgrades at the Girton and Spittals interchanges and additional signage for drivers. The A14 junction upgrades and variable message signs are scheduled to be implemented in 2013.

**4.2.40** The March 2012 Budget announcement, confirmed that the Government was committed to "improving capacity" on the route between Cambridge and Huntingdon, and confirmed some of these could be partly funded by tolling.

**4.2.41** The withdrawal of the A14 scheme could adversely affect development sites, including Northstowe, due to conditions limiting their development prior to additional A14 capacity. As a result of further work and negotiations involving the developers and Highways Agency, it has been agreed that the condition limiting development at the NIAB1 site (land between Huntingdon Road and Histon Road) to 350 homes prior to additional A14 capacity will be removed. The result is A14 improvements no longer result in a constraint to growth at North West Cambridge.

**4.2.42** Bearing in mind the issues and proposals outlined above, the Cambridgeshire LTTS concludes that in Cambridge, where congestion levels are very significant, a comprehensive package of measures would be needed in order to constrain car trips to present day levels. This would include significant improvements to public transport and to walking and cycling infrastructure and services. The LTTS is due to be updated to take account of the revised Local Plans.

Table 4.3: Funded Highways Infrastructure Schemes

| Scheme | Estimated cost | Funding |
|---|---|---|
| Addenbrooke's Access Road (opened Oct 2010) | £25 m | Developers & Growth Area Fund |

### Rail Constraints and Existing Proposals

**4.2.43** As noted in the LTP3, some rural parts of Cambridgeshire are well served by rail, such as the A10 corridor both north and south of Cambridge, whilst other areas rely on the market towns and Cambridge for access to the railway network. It is therefore essential to improve access to these stations as well as interchange and waiting facilities at the stations themselves, and to better integrate walking, cycling and bus use with the rail network. A new Long Term Transport Strategy (LTTS) will also incorporate a rail strategy for the county, considering long term rail capacity and access to railway stations.

**4.2.44** Rail access in Cambridge is particularly constrained, in that there is poor accessibility to public transport outside the City. This results in poor connectivity between Cambridge, South Cambridgeshire and other key business centres. There is significant crowding on nearly all rail routes into London, which includes the links from Cambridge and the local stations in South Cambridgeshire, which places constraints on the ability for future passenger growth in the absence of capacity improvements.

**4.2.45** Various proposals exist for improvements to rail infrastructure in Cambridge and South Cambridgeshire. Recent improvements include a new island platform at Cambridge station which cost £16.7 million and opened in 2011. This will mean that Greater Anglia will be able to run longer

trains on key commuter services between Cambridge and London Liverpool Street, which will help counter overcrowding.

**4.2.46** A Major Scheme Business Case for the Chesterton Interchange was submitted to the DfT in 2009, which will be essential to provide interchange facilities for pedestrians, cyclists, bus users, car drivers and heavy rail users. Delivery of the Chesterton Interchange has the potential to reduce pressure on the existing Cambridge railway station and will improve access to the rail network from the north of Cambridge. The scheme proposes to include a connection to the Cambridgeshire Guided Busway network, and will reduce the number of car journeys made across the city as a whole.

**4.2.47** Following the suspension of the Government's Major Scheme Guidance, a bid for funding from the Regional Growth Fund of £10 million towards the delivery of Chesterton Interchange was submitted by the Greater Cambridge – Greater Peterborough Local Enterprise Partnership (LEP) in January 2011, but it was announced in April 2011 that this had been unsuccessful. However, to allow early delivery of the station, the County Council will provide the initial capital funding and recoup the costs from the Train Operating Companies. The station is due to open in late 2015.

**4.2.48** The Cambridge Railway Station area (CB1) is undergoing comprehensive redevelopment. This includes space for taxis; bus stops; and a multi-storey car/cycle park accommodating over 2,800 cycle parking spaces, 50 motorcycle parking spaces and car parking for rail users. The bus-related proposals are discussed in the following subsection.

**4.2.49** The successful LSTF bid will fund a programme of measures aimed at improving journeys within two of the most important transport corridors in Cambridgeshire. Together these measures will provide more choices for those using the two stations, and reduce traffic and congestion.

**4.2.50** The first area of improvements covers an east-west corridor starting at the Enterprise Zone at Alconbury, through Huntingdon, St Ives, the Science Park area (where the new Cambridge Science Park Station will be located) and ending at Cambridge. The second north-south corridor starts at Ely, runs through the Science Park area and again ends at Cambridge.

**4.2.51** Both of these routes contain major employment sites and new housing developments which will experience significant growth in the coming years. Both have good existing public transport links, either rail or guided bus, which will be significantly enhanced by this funding. Improving links in these areas will help people travel between home and work and for other purposes by foot, bicycle, bus and train. Improvements will range from infrastructure schemes such as new or improved cycle routes, and cycle parking, through to better public transport systems and enhanced signage and maps.

**4.2.52** Support will be offered to employers in the corridors to develop their own workplace travel plans to help employees travel to work more sustainably. This could include providing showers and lockers at workplaces or personalised travel planning advice to employees.

**4.2.53** Additionally, a community led Rural Interchange Bidding Fund is included as part of the LSTF bid, which aims to give pedestrians, cyclists, community transport users and car sharers a better opportunity to interchange with the public transport network. The bidding fund will not be prescriptive, but it will be looking for low cost and cost effective solutions.

Table 4.4: Funded Rail Infrastructure Schemes

| Scheme | Estimated cost | Funding |
|---|---|---|
| Cambridge Railway Station new platform | £16.7 m | Network Rail |

### Bus Constraints and Existing Proposals

**4.2.54** As noted in the 'Access To and Around Greater Cambridge' study, Cambridge City Centre suffers from poor connectivity, is constrained by limited capacity for any increased bus services that will be required to accommodate forecast demand, and has poor accessibility to public transport outside of Cambridge.

**4.2.55** The dispersed nature of communities in surrounding rural areas of South Cambridgeshire means that it is often not viable for commercial bus operators to run traditional services, and even when they do, frequencies often do not allow people to access the services they need at the times they need. As shown in **Appendix 3**, the villages of Bartlow, Carlton, Connington, Lolworth and Meldreth suffer particularly from poor bus services, with only 1-2 buses per weekday to Cambridge or the market towns, and others (Abington Pigotts, Childerley, Graveley, Hatley, Papworth St Agnes, Little Shelford and Whaddon) having no services at all. Furthermore, long journey times and poor reliability can often make trips by bus an undesirable choice for many people, particularly for the journey to work.

**4.2.56** Cambridgeshire County Council submitted a bid to the Department for Transport's (DfT) Better Bus Area Fund (BBAF). The bid was prepared in partnership with South Cambridgeshire District Council, Cambridge City Council, Stagecoach East and Whippet Coaches Ltd and is for a total of £1.724m of funding between 2012 and 2014. In March 2012 the bid was successful.

**4.2.57** The overarching aim of the BBAF bid is to improve accessibility, bus journey times and reliability on key bus routes in Cambridge. The bid focuses on the core area of Cambridge City Centre and on four of the inner radial routes that are heavily used by buses (Hills Road, Milton Road, Histon Road and Mill Road). It also focuses on outer radial routes from the Trumpington Park & Ride Site and the villages of Sawston, Cambourne and Linton. The BBAF programme is based on three key elements:

- Bus priority and traffic management measures (for example road space reallocated to buses, buses prioritised through signalised junctions and rerouted away from pinch points, and better enforcement of highway infringements along key bus routes);
- Facilities and interchange improvements (for example improved bus stops, dedicated interchange points and vehicles upgraded); and
- Targeted information and ticketing improvements (for example provision of on street smartcard top-up machines and a smartphone Real Time.

**4.2.58** Community Transport complements the traditional public transport network and provides a viable, flexible and accessible alternative mode of transport to the private car, so is of particular importance in rural areas such as South Cambridgeshire.

**4.2.59** As part of the Council's 2007 TIF bid, proposals were included for strengthening of the city bus network by enhanced frequencies and two additional city services to provide links at new developments to Cambridge East and North West Cambridge. The TIF scheme was withdrawn by

Government in 2010, although these proposals are considered valid for consideration in this study.

**4.2.60** As noted in the LTP3, some of the five Cambridge Park & Ride sites are now operating close to capacity. This issue may be considered as part of the development of the Transport Strategy for Cambridge and South Cambridgeshire'. In the meantime, plans are in place to provide more spaces at Babraham Road Park & Ride site. The amount of cycle parking at the sites will also be increased where appropriate.

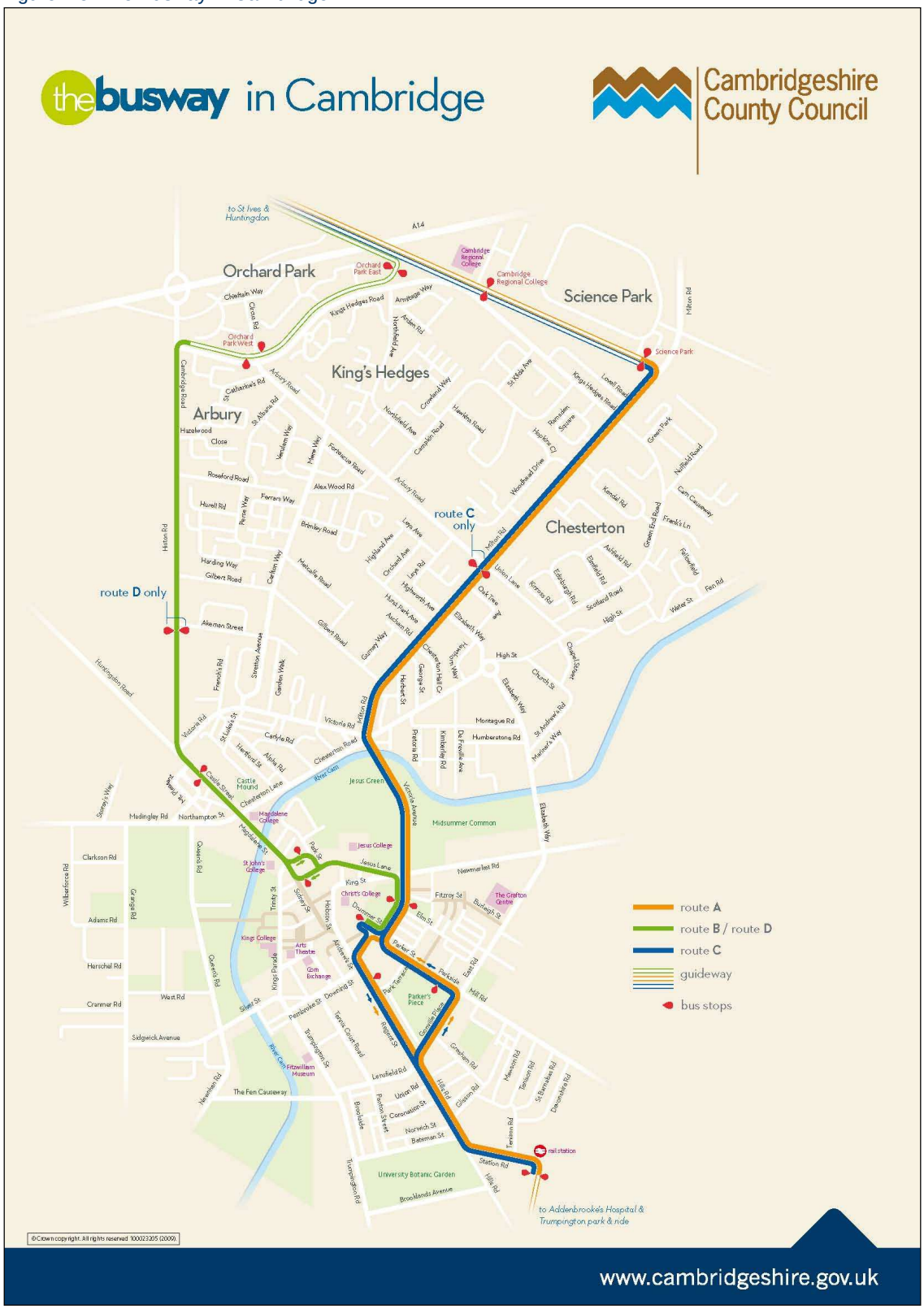
**4.2.61** As part of the wider CB1 development, the Cambridge Gateway Scheme (completed March 2011) is a new bus-only road from the Hills Road / Brooklands Avenue junction to Cambridge Railway Station, including new links for pedestrians and cyclists. The project was funded by a £3 million grant the Communities Infrastructure Fund (CIF2). A new bus interchange is currently being developed at the railway station, including nine new bus shelters with two for guided buses. The scheme will cost £1.5 million with funding provided by the Housing Growth Fund. The final phase is expected to be complete in spring 2012.

**4.2.62** The Cambridgeshire Guided Busway officially opened in August 2011 at a cost of around £150 million, with £92.5 million funding awarded from Government plus some funding from developers who are building in the area near the route. The Busway will provide people with a reliable, fast and frequent bus service for getting to work and leisure activities in and around Cambridge and along the A14 corridor. The route connects Huntingdon, St Ives, Somersham and Cambridge.

Figure 4.4: Cambridgeshire Guided Busway Network Route


**4.2.63** As shown in **Figure 4.5**, buses enter Cambridge along either Histon Road or Milton Road, with Routes A and C serving Cambridge Rail Station and Route B stopping at Drummer Street Bus Station.

Figure 4.5: The Busway in Cambridge




Source: Cambridgeshire County Council

**4.2.64** **Table 4.5** below sets out the funded bus infrastructure schemes:

Table 4.5: Funded Bus Infrastructure Schemes

| Scheme | Estimated cost | Funding |
|---|---|---|
| Cambridge Guided Busway (opened August 2011) | £150 m | Government, developers and Cambridgeshire County Council |
| Cambridge Gateway (completed March 2011) | £3 m | CIF2 |
| Cambridge Bus Interchange | £1.5 m | Housing Growth Fund |

### Cycling and Walking Constraints and Existing Proposals

**4.2.65** A key challenge for walking and cycling facing Cambridge and South Cambridgeshire is that many people commute distances that are too far to walk or cycle. In Cambridge, as many people who work in the city live elsewhere where house prices are lower, the length of commuter journeys in Cambridgeshire is double the national average. In addition, the rural nature of much of the county means that people have to travel long distances to access the services and leisure facilities they need.

**4.2.66** Transport infrastructure proposals for the new development areas in Cambridge and South Cambridgeshire need to make sustainable modes of transport, including walking and cycling, a viable and attractive alternative to car travel.

**4.2.67** As noted in the LTP3, whilst cycle parking is available at many railway stations in Cambridgeshire, many facilities are full or over capacity. This is particularly the case at Cambridge station where demand far outstrips supply. This issue is proposed to be addressed as part of the CB1 development, wherein over 2,800 cycle parking spaces are proposed to be provided. Further work needs to be undertaken with other railway stations in South Cambridgeshire District to improve the quality and number of cycle parking stands to help encourage and support cycle interchange at the stations.

**4.2.68** A number of walking and cycling infrastructure improvements are proposed as part of the LSTF programme, building upon the Cycling Town work in Cambridge and on programmes across the county delivered as part of the Local Transport Plan.

### Identifying Infrastructure Requirements

**4.2.69** In order to mitigate the impact of planned provision in Cambridge and South Cambridgeshire, transport infrastructure requirements have been identified in and around the City and District. Several of these proposals are already being actively considered and/or implemented.

### Cambridge (including all areas and station area)

**4.2.70** Within the Cambridge urban area, including the Station area, approximately 7,341 dwellings and 26.09 ha employment are proposed by 2031.

**4.2.71** The Station area / CB1 development area comprises 369 dwellings with 1.92 ha employment, and involves bringing forward a major transport interchange at Cambridge Station. The Cambridge Gateway Scheme (completed March 2011) comprises a new route to improve public transport and safety for pedestrians and cyclists travelling to and from the station area, and was funded by £3 million from the Communities Infrastructure Fund (CIF2). The proposed Bus Interchange Scheme

will cost £1.5 million which will be funded from Housing Growth Fund. The scheme is expected to be complete by spring 2012.

**4.2.72** In terms of highways, the urban intensification within the city boundary will add pressure to the city's already congested road network and therefore requirements for cycling and walking. The road infrastructure improvements along Station Road, Hills Road and Regent Street proposed as part of Project Cambridge would help improve access in and out of Cambridge by bus, by bike or on foot.

**4.2.73** As congestion levels in Cambridge are significant, to constrain car trips generated by housing and employment allocation in the city boundary, the focus for infrastructure requirements needs to be on public transport, walking and cycling facilities and services. The successful Better Bus Area Fund Bid will lead to improvement in public transport focussing on Cambridge City Centre and the four inner radial routes of Hills Road, Milton Road, Histon Road and Mill Road.

**4.2.74** Urban intensification in Cambridge will add pressure to the existing railway station located to the south east of the city centre. Delivery of the Cambridge Science Park Station (Chesterton Interchange) has the potential to reduce pressure on the existing station and will improve access to the rail network from the north of Cambridge. The Cambridge Science Park Station is due to open late 2015. Network Rail's £16.7 million scheme to deliver the new island platform at Cambridge station is already helping ease congestion on Cambridge-London services through the provision of longer trains.

**4.2.75** Coverage of the Citi bus network is currently good in the northern areas of the city into South Cambridgeshire (e.g. Milton, Histon, Impington), so strengthening of the network in areas of currently poor public transport provision would be beneficial to help mitigate journeys to work currently made by car. Pressure will be added to the Park & Ride sites, which could result in a requirement for expansion. Cambridge will benefit from the recently opened Busway to access key destinations within and beyond Cambridge.

**4.2.76** Urban intensification may add pressure to the five Park & Rides around the city, potentially requiring expansion of these sites. In addition to those mentioned previously, development in the north of the city may require the Milton Park & Ride to expand from its current 774 spaces to 1,000.

**4.2.77** Urban intensification would require wide ranging improvements to the cycling and walking network to allow for maximum permeability within the city and beyond. These include improving existing commuter and leisure links, deploying more cycle parking around the city and undertaking safety improvements at key roundabouts and junctions to make them more cycle friendly.

### South Cambridgeshire (including all secondary school catchment areas)

**4.2.78** The housing and employment land allocation in South Cambridgeshire rural area is dispersed across the District and for the purposes of transport infrastructure requirements has been considered as a whole.

**4.2.79** JTW data suggests that around 50% of the working population in South Cambridgeshire works within the District, with 30% commuting to Cambridge, so access and connectivity between villages and to the city are of key importance. To mitigate the increasing reliance on car travel, public transport access needs to be improved to support the proposed housing allocation, particularly for villages currently suffering from limited or no bus or train services.

**4.2.80** Only six villages in South Cambridgeshire have a railway station and hence there is a reliance on Cambridge and the market towns for access to the railway network. It is therefore essential to improve access to these stations by walking, cycling, bus and Community Transport, as well as improving the station facilities themselves.

**4.2.81** Villages, currently suffering from poor bus provision (see **Appendix 3**), need to have improved access to public transport to allow people to access the services they need at the times they need to. This is particularly the case with the risk of subsidy currently maintaining rural services being removed in the current financial climate. Investment in Community Transport can help 'plug the gap' in bus service provision, either by adding to existing schemes or by providing a new community transport scheme. This will provide a flexible network of buses offering regular services during the morning and evening peaks and a more demand responsive service during the off peak hours to support the additional housing throughout the rural area. The phased abolition of public transport subsidy from the Council could be redirected to contribute towards Community Transport.

**4.2.82** The high level of commuting from South Cambridgeshire into Cambridge is likely to add pressure to the Park & Ride sites, particularly Trumpington and Madingley Road (resulting from housing in Comberton and Melbourn) and Newmarket Road (from housing in Fulbourn). To provide the ability to enhance capacity to accommodate this anticipated future demand, this adds to the potential requirement to expand the parking capacity at these sites.

### Cross Boundary Urban Extensions and New Settlement

### Orchard Park (South Cambs)

**4.2.83** The Orchard Park development, formerly known as Arbury Park, is referred to in the South Cambridgeshire Site Specific Policies DPD (adopted January 2010). A number of phases of the site have already been constructed, including the internal road network, or are currently under construction.

**4.2.84** The site is bounded to the north by the A14, to the south by the Busway route and to the west by Histon Road. The site will impact upon the A14 although, as noted in the South Cambridgeshire AMR 2010, the situation regarding the A14 improvements does not directly affect the continued development of Orchard Park.

**4.2.85** The site is well served by public transport, including the extension of existing bus routes through the development and a direct connection to the Busway running through Orchard Park and Cambridge to Trumpington Park & Ride.

**4.2.86** As with all of the urban extensions of Cambridge, a high quality, safe and convenient pedestrian and cycling environment will be created across the site. These will need to link between component parts of the development as well as to neighbouring parts of the urban area and to the rural area to the north of the A14.

### Cambridge East (City / South Cambs)

**4.2.87** Since Marshall's announcement in 2010 to not relocate from Cambridge Airport to Wyton by 2031, the development proposals known collectively as 'Cambridge East' stand at 2,641 dwellings with 36.7 ha employment land. This is largely clustered at land north of Newmarket Road and land north of Cherry Hinton. These housing and employment figures represent a significant reduction since the original Cambridge East AAP (2008) for 10,000 – 12,000 dwellings was adopted in 2008,

although some transport elements of the AAP are still applicable. A Transport Study for Cambridge East was issued in November 2006.

**4.2.88** The Cambridge East development as a whole will inevitably impact upon the A14 and will require that sufficient highway capacity is available in the A14 corridor to accommodate the traffic generated by the development. This adds pressure to the delivery of the HA's plans to widen the A14 in order to help ease congestion on this route.

**4.2.89** For Cambridge East to be a truly sustainable place it will be important to ensure that the transport infrastructure encourages the use of more sustainable forms of travel – public transport, cycling and walking.

**4.2.90** The growth area will require a network of highly accessible, high quality, direct, connected and convenient bus routes, within and connecting Cambridge East with the city, other development sites and surrounding villages. This may include a new bus service, as well as improvements to bus priority along the Newmarket Road corridor and Cherry Hinton Road/Airport Way in order to encourage public transport use. As well as linking to the city centre, public transport needs to provide connections to the railway station, Chesterton Interchange, the Busway and Addenbrooke's Hospital.

**4.2.91** The development north of Newmarket Road will require the relocation of the Park & Ride site to south of Newmarket Road and east of Airport Way to free-up the existing site for development. This will reduce the volume of traffic on Newmarket Road by intercepting it slightly further to the east. To provide the ability to enhance capacity to accommodate anticipated future demand, there could also be the requirement to expand the parking capacity on the site from 873 spaces to 1,200 to accommodate additional development trips.

**4.2.92** As with all the development sites around Cambridge, Cambridge East will require a dedicated network of high quality, easily accessible and safe rights of way, including cycle, pedestrian and equestrian routes; both within Cambridge East and connecting with the rest of Cambridge, surrounding villages, and the wider rights of way network.

### Southern Fringe (City / South Cambs)

**4.2.93** The Southern Fringe comprises a number of development sites, including Trumpington Meadows, Glebe Farm, Clay Farm, Cambridge Biomedical Campus and Bell School; in total amounting to 4,043 dwellings and 17.9 ha employment. An AAP was produced for the Southern Fringe (adopted February 2008) which focuses primarily on land to the west of Trumpington for development, along with reference to land adjoining Addenbrooke's Hospital. The proposals for the remaining sites are covered in the Cambridge Local Plan. Development at Clay Farm (306 homes) and Trumpington Meadows (353 homes) received planning approval in July 2011 and construction is expected to commence later this year.

**4.2.94** Transport links to the Southern Fringe include the Addenbrooke's Access Road (opened October 2010) linking the new Cambridge Biomedical Campus including Addenbrooke's Hospital to the M11. The Access Road helps cater for traffic generated by the hospital, Glebe Farm and Clay Farm, and is predicted to carry 21,500 vehicles a day between Hauxton Road and Shelford Road in 2023 when all the developments in the area are completed. The scheme cost around £25 m with funding coming from developers working in the area and the government's Growth Area Fund.

**4.2.95** To avoid adding disproportionately to delays and congestion on Hauxton Road, car traffic

generation from the Southern Fringe can be minimised as the area will be served by the Trumpington and Brabraham Road Park & Ride sites, the Busway and a proposed network of Rights of Way routes. The expansion of both the Trumpington and Barbraham Road Park & Rides could therefore be a requirement to accommodate additional trips generated by the increased housing in addition to normal modal split transfer. The Trumpington Park & Ride currently has capacity for 1,340 spaces with the potential to expand to 2,000 spaces, with Brabraham Road from 1,043 spaces to 1,500.

**4.2.96** The Busway will link the development to the city, the railway station and on to the Science Park and beyond. There are plans for new and enhanced byways, bridleways, cycleways and footpaths to integrate with the existing network serving Cambridge City Centre and other nearby centres of attraction, including Trumpington and Addenbrooke's Hospital, as well as the wider rights of way network.

### North West Cambridge (City / South Cambs)

**4.2.97** The North West Cambridge growth area comprises the University site, NIAB and NIAB 2, totalling 5,880 dwellings and 4.5 ha employment by 2031. An AAP focusing primarily on the University site was adopted in October 2009 (North West Cambridge AAP), and the NIAB site is reference in the South Cambridgeshire Site Specific Policies DPD adopted in January 2010. A Transport Study focusing on the University and NIAB sites was completed in 2007. In September 2011, the University of Cambridge submitted a joint planning application to SCDC and Cambridge City Council for the University site, comprising up to 3,000 dwellings, 2,000 student bed spaces, employment and retail floorspace and other facilities, along with associated transport infrastructure to support the development.

**4.2.98** The North West Cambridge Transport Study notes that North West Cambridge "will generate significant travel demands in an area of Cambridge where radial routes, particularly Huntingdon Road, already experience congestion in peak periods".

**4.2.99** In August 2011, a condition previously required by the Highway Agency that restricted development of the NIAB site before measures to improve the performance of the A14 had been completed was removed. The HA, following further work done by the applicant, were satisfied that this limitation was no longer necessary. Delivery of the NIAB 2 site is still delayed until such a time that alternative A14 improvement proposals are implemented.

**4.2.100** The Highway Strategy as part of the Preferred Transport Option (Transport Study, 2007) for the University and NIAB sites aims to provide some traffic capacity to serve the new development whilst assuming for nil detriment to the overall highway network in the vicinity of the site. This includes new access junctions, radial and orbital routes through the sites. The September 2011 planning application for the University site states that the development's impact on the highway network will be minimal (Transport Assessment, 2011).

**4.2.101** The North West Cambridge developments have been designed to manage the demand for travel by private car and to be highly accessible for public transport, pedestrian and cycle use, linking to the wider networks in the city and beyond. The respective strategies proposed as part of the Transport Study and 2011 University site planning application include diverted and new bus routes through the North West Cambridge site connecting to the city centre, Madingley Road Park & Ride site, the main train station, Cambridge Science Park Station (Chesterton Interchange), the Busway and other key destinations. Madingley Road Park & Ride may require expansion from 930 to 1,500 spaces to accommodate new demand and services. New walking routes within the development

sites will be provided with connections to existing walking routes on Histon Road, Huntingdon Road and Madingley Road; and new orbital and radial cycle routes will be provided, linking to existing routes.

**4.2.102** These strategies need to be extended to incorporate the NIAB 2 site proposed to adjoin the NIAB site. The Busway, which runs along Histon Road, will improve public transport accessibility for some residents of the North West Cambridge developments. The area will benefit from Cambridge Science Park Station (Chesterton Interchange) to improve public transport links beyond the city, and will also require an alternative scheme to the now withdrawn Highway Agencies' A14 widening project in order to enable the delivery of NIAB 2.

### Northstowe (South Cambs)

**4.2.103** The proposed new settlement of Northstowe is located north-west of Cambridge. Planning applications for the entire site were submitted in 2007, along with an Area Action Plan adopted in the same year. Determination of the planning applications have been delayed following economy dip in 2007 and the subsequent withdrawal of the HA's A14 widening scheme, as traffic analysis concluded that only a limited number of houses could be built without road improvements to the A14. A phased approach to delivering investment based on a revised Masterplan for the new town has since been developed, and consultation on the first phase of approximately 1,500 homes, and the revised site-wide Masterplan, took place in October 2011. A planning application is expected to follow in early 2012, with initial findings from the study to identify fresh proposals for the A14 expected in mid-2012.

**4.2.104** Northstowe will be linked to the A14 and local highway network through existing and new roads. Delivery of Northstowe is dependent on sufficient capacity being available in the A14 corridor between Bar Hill and Cambridge, and development of the town hence places pressure on an alternative to the HA's A14 improvement scheme being found.

**4.2.105** The AAP notes that a bypass for Willingham to the north of Northstowe may be required, depending on traffic forecasts for Northstowe. If this demonstrates that these measures will be needed over the lifetime of the development of Northstowe, a contribution will be sought from the developers towards its construction.

**4.2.106** Northstowe is envisaged to be the most sustainable town in Cambridgeshire with a high proportion of all journeys made by alternative modes to the car, not only within the town but also to surrounding areas. The need to use cars for journeys within the town will be minimised by the provision of a high quality dedicated busway route through the town and local centres which will be taken off the main Cambridge Guided Busway route. Nearly all residents of Northstowe will be within 400m walking distance of a bus stop.

**4.2.107** A highly accessible network of safe and convenient walking routes and cycleways, along with an improved Rights of Way network, will be provided to connect the main areas of activity within the town as well as to neighbouring villages and the open countryside.

### Calculating the Costs

**4.2.108** It is assumed that the transport infrastructure proposals already included within development growth areas, such as internal access roads, junction improvements, cycle/footways etc., will be paid for as a cost of development and as such have not been considered separately in this IDS. Additional off site infrastructure considered essential to support the housing growth throughout the

City and District have been costed in the 'Summary of Requirements' subsection below.

**4.2.109** The majority of the costs allocated to the required infrastructure proposals have been based on cost data available from relevant documents, expert opinion and correspondence with transport contacts at the County Council. There are a number of areas where local costs have not been available; these include the proposed enhancements to rights of way and bus priority measures, where design or feasibility works have not been carried out and as such generic costs have been allocated.

**4.2.110** In the case of the potential expansion of the five Cambridge Park & Ride sites, these proposals were originally detailed in the 2007 TIF bid which took account of the proposed congestion charge leading to a strong modal shift towards Park & Ride. The level of expansion proposed in this IDS has been estimated according to the estimated additional pressure on the sites arising from the development growth areas, and as such is less than the TIF proposals.

**4.2.111** The Identified infrastructure requirements and costs are set out in **Table 4.6**, **4.7, 4.8** and **4.9**:

Table 4.6: Transport Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Scheme | Cost |
|---|---|---|
| Cambridge | Cambridge Station Interchange | £2,800,000* |
| Cambridge | Expansion of Newmarket Road Park and Ride site (ECATP) | £1,500,000 |
| Cambridge | Newmarket Road Bus Priority (ECATP) | £862,000 |
| Cambridge | Upgrade existing cycle/pedestrian links into City Centre (NCATP) | £70,000 |
| Cambridge | Inner Ring Road improvements (East Road) (ECATP) | £100,000 |
| Cambridge | Radial Route Signing (NCATP) | £92,000 |
| Cambridge | Radial Route Signing (WCATP) | £137,000 |
| Cambridge | Public Realm Improvements to Riverside | £4,109,000 |
| Cambridge | Improvements to Hills Road and related streets (Project Cambridge to improve route connecting rail station to City Centre) | £18,037,500 |
| Cambridge | Eastern Gate Improvements (Improvements to street network, junctions and overall environmental quality in and around Newmarket Road/East Road) | £41,859,375 |
| Cambridge | Neighbourhood Centre Public Realm Improvements (Arbury Court, Trumpington High Street, Barnwell Road Shops, Carlton Way Shops and Cambridge Leisure Park) | £7,346,500 |
| Cambridge | Public Transport real time information (ECATP) | £245,000 |
| Cambridge | Radial Route Signing (ECATP) | £85,000 |
| Cambridge | Citi 2 bus service extended to Arbury Camp via Histon Road, at 10-minute frequency (NCATP) | £1,400,000 |
| Cambridge | Bus Priority measures – Histon (NCATP) | £476,000 |
| Cambridge | Bus Priority measures – Milton (NCATP) | £258,000 |
| Cambridge | Arbury Road - Mere Way Toucan Crossing (NCATP) | £10,000 |
| Cambridge | Bus priority in Trumpington Road (SCATP) | £804,000 |
| Cambridge | Shelfords to City Cycle Route (SCATP) | £321,000 |
| Cambridge | Bus priority in Hills Road (SCATP) | £488,000 |
| Cambridge | Cycle / pedestrian provision on the Old Bedford line (SCATP) | £220,000 |
| Cambridge | Improvements to Hills Road Bridge (SCATP) | £450,000 |
| Cambridge | Radial Route Signage (SCATP) | £85,000 |
| Cambridge | Extension of the core traffic scheme (SCATP) | £500,000 |
| Cambridge | Inner Ring Road improvements (Gonville Place) (SCATP) | £90,000 |
| Cambridge | Trumpington P&R to Addenbrooke's Bus Service 15 minute frequency (SCATP) | £150,000 |
| Cambridge | Babraham Road P&R to Madingley Road P&R Bus Service via Addenbrooke's Hospital and Brooklands Avenue (SCATP) | £300,000 |
| Cambridge | Improved Bus Service on Cambridge / Melbourn / Royston corridor (SCATP) | £250,000 |
| Cambridge | Cambridge – Cambourne – St Neots Bus Service Improvements and Infrastructure (WCATP) | £500,000 |

| Area/Sub Area | Infrastructure Scheme | Cost |
|---|---|---|
| Cambridge | Increased frequency of Service Citi 6 (Oakington – Fulbourn via Girton, City Centre and Teversham) (WCATP) | £475,000 |
| Cambridge | Bus Priority measures, A1303 St Neots Road / Madingley Road (WCATP) | £990,000 |
| Cambridge | Upgrade existing cycle / pedestrian links into City Centre (WCATP) | £154,000 |
| Cambridge | Huntingdon Road - Barton Road cycle route (WCATP) | £755,000 |
| Cambridge | Widening / Lighting – Coton Footpath (WCATP) | £280,000 |
| Cambridge | Contribution towards Real Time Passenger Information (WCATP) | £500,000 |
| **Total Cost** | | **£86,699,375** |

* Generic cost to 2031 based on LSTF bid costs

Table 4.7: Transport Infrastructure Requirements - South Cambridgeshire

| Area/Sub Area | Infrastructure Scheme | Cost |
|---|---|---|
| Northstowe | Willingham Bypass | £10,000,000 |

Table 4.8: Transport Infrastructure Requirements - Cross Boundary

| Area/Sub Area | Infrastructure Scheme | Cost |
|---|---|---|
| Cambridge | Cambridge Science Park Station (Chesterton Interchange) | £26,000,000 |
| Cambridge | Relocation and expansion of Newmarket Road Park & Ride | £3,120,000 (1) |
| Cambridge | Expansion of Park & Ride sites (around 1,040 spaces) | £3,340,000 (1) |
| Cambridge | Additional bus services from Cambridge East and enhanced existing services and bus priority between Cambridge East and Cambridge North West to the city centre | £1,000,000 (2) |
| Cambridge | Enhanced network of rights of way, including cycle, pedestrian and equestrian routes linking the development sites to the rest of the city | £2,500,000 (3) |
| **Total Cost** | | **£35,960,000** |

1 Case studies from www.parkandride.net [assuming average £3,000 per space]
2 Generic cost [around £100 / dwelling]
3 Generic cost

Table 4.9: Transport Infrastructure Requirements - Both local Authorities

| Area/Sub Area | Infrastructure Scheme | Cost |
|---|---|---|
| Both local Authorities | A14 improvements (alternative to HA scheme) | £1,114 m (1) |

1 2009 central estimate cost from HA A14 Improvement Scheme Business Case

### Funding and Delivery

**4.2.112** Cambridgeshire County Council is responsible for the delivery of transport infrastructure in Cambridge and South Cambridgeshire. Lead times are very specific to individual schemes, the availability of funding and the timing of new development.

**4.2.113** Transport budgets and funding streams have been significantly cut following the Government's spending review and other changes across government. Various funding sources are still potentially available to support the delivery of transport infrastructure to ensure the sustainability of housing growth, including: the new Growing Places Fund, the LSTF, the Integrated Transport Block, the Major Schemes Pot, Tax Increment Financing and developer funding. A summary of these potential funding sources is given below.

**4.2.114** **Growing Places Fund:** Announced in early November 2011, the Growing Places Fund (jointly administered by DCLG and DfT) will provide £500m to enable the development of local funds to address infrastructure constraints, promoting economic growth and the delivery of jobs and houses. The deadline for funding proposals in 20 December 2011, with funding allocations to be announced in early 2012 and payments made to the lead Local Authority for each Local Enterprise Partnership

(LEP) by the end of the 2011/12 financial year. The indicative distribution to Greater Cambridge & Greater Peterborough LEP is £ 10.7 m, which could be used to help deliver key infrastructure to unlock development sites.

**4.2.115** **Local Sustainable Transport Fund:** The DfT's Local Sustainable Transport Fund provides a total of £560 million capital and revenue funding across England in the four years from 2011/12. In July 2011, Cambridgeshire was one of 13 authorities asked by Government to re-submit their bid for transport funding from the LSTF fund for Tranche 2 and have been successful. The bid secured additional investment of £5 million between 2012 and 2015, focusing on improvements to two major transport corridors across Cambridgeshire.

**4.2.116** **Integrated Transport Block:** The Integrated Transport Block provides capital funding which is used primarily for relatively small scale physical improvements to local transport networks. The LTP3 indicates that £180,000 has been set aside in the Integrated Transport Block programme for 2011/12 for works in the Cambridge Access Strategy (which from 2012/13 will refer to work being carried out as part of the new Transport Strategy for Cambridge) including bus priority on Newmarket Road. A further £120,000 in 2011/12 has been set aside for countywide cycleway improvements, including Cambridge.

**4.2.117** **Major Schemes Pot:** Capital funding from the Major Schemes funding pot is currently allocated by Government to local schemes of total cost greater than £5 million. The DfT has just undertaken a consultation regarding devolving major scheme funding to local authorities and/or Local Enterprise Partnership. In October 2010, the Government announced the major schemes it will support or consider for funding in the next four years, which did not include the major LTP3 scheme in Cambridge, Chesterton Interchange. There is therefore no scope to fund this project from the Major Schemes Pot prior to 2015/16.

**4.2.118** **Tax Increment Financing (TIF):** The Coalition Government confirmed their intention to proceed with the introduction of TIF in the 2011 Budget. It is expected that TIF will be introduced initially through a bid-based process by piloting a small number of projects. The 2009 proposals for the £25 million Project Cambridge scheme for improvements between Cambridge Rail Station and the City Centre, as originally proposed to be funded through TIF, have the potential to be taken forward in the near future.

**4.2.119** **Developer Funding:** As a result of the planned growth in Cambridge and South Cambridgeshire, significant contributions can be expected from developers towards schemes to militate against the impact of development proposals on the transport network. Securing funding can be through two mechanisms: Section 106 Agreements, negotiated as part of planning permissions by the County, City and District Councils; and the Community Infrastructure Levy (CIL), which will allow local authorities to levy a charge on identified new development to be spent on local and sub-regional infrastructure to support development. Section 106 agreements have been signed and outline consents issued at Clay Farm and Glebe Farm within the Southern Fringe, as well as the Station Area within the Cambridge urban area. The outline application at NIAB has been approved and work is on-going to finalise the Section 106 agreement.

**4.2.120** Capital funding from the County, District and City Councils could potentially be used to contribute towards the delivery of transport infrastructure and services that help them deliver local priorities in their areas.

**4.2.121** The Department for Business Innovation and Skills (BIS) has established a Regional Growth Fund, providing a total of £1.4 billion capital and revenue funding (from BIS, DfT and Communities and

Local Government budgets) across England in the three years from 2011/12. The major focus of the Fund is on regeneration, and it was therefore considered unlikely that bids would be supported for much of Cambridgeshire. Cambridge's bids for funding in Round 1, including £10 million for Chesterton Interchange, have been unsuccessful.

## 4.3 Energy Generation, Supply and Distribution

**4.3.1** This section covers the provision of electricity and gas supplies. The general principle involved is that these services are provided by the utility companies as required at their own cost with capital raised through private debt or equity capital as they see fit, and in return for the income generated from sales to domestic and commercial customers.

**4.3.2** Some additional infrastructure required is paid for by developers. Our view is that the issues with regard to the utilities are not ones of funding per se, 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 the energy utilities below.

### Context

**4.3.3** The electricity and gas industry in the UK has three key levels of responsibility. The top two levels are responsible for ensuring appropriate infrastructure is in place to meet demand. They are:

Table 4.10: Utility Structure

| Electricity | Gas |
|---|---|
| National Electricity Network - Generated electricity flows into the National High Voltage Electricity Transmission network. This is owned and maintained by National Grid. Electricity is then passed through to the regional Distribution networks. | National Gas Network - National Grid owns and operates the National Gas Transmission System throughout Great Britain. Gas is then passed through the strategic network to Distribution Network Operators (DNO). |
| Distribution Network Operators (DNO) - are the owners and operators of the network of towers and cables that bring electricity from the National Transmission Network to homes and businesses. For Cambridge and South Cambridgeshire the DNO is UK Power Networks. | Distributors - are the owners and operators of the local gas distribution network. For Cambridge and South Cambridgeshire the gas distributor is also National Grid. |
| Gas and electricity suppliers - are the companies who supply and sell gas and electricity to the consumer, e.g. EON, N-Power, Scottish Power, British Gas etc. The suppliers are the first point of contact for consumers when arranging a gas or electricity supply to domestic, commercial and smaller industrial premises. They are not responsible for infrastructure. | |

### Calculating Infrastructure Requirements - Electricity

**4.3.4** National Grid owns and maintains the high-voltage electricity transmission system in England and Wales, together with operating the system across Great Britain, balancing supply with demand on a minute by minute basis. National Grid is responsible for the bulk transmission of electricity in the United Kingdom.

**4.3.5** The estimation of load growth associated with housing and general light industrial developments for Cambridge and South Cambridgeshire is undertaken by the local Distribution Network Operator (DNO), which is UK Power Networks (who took over from EDF Energy as the DNO in December 2010). It advises National Grid of the predicted increase in demand at the 132kV bulk supply points.

**4.3.6** National Grid then determines whether additional reinforcement at the 400kV or 275kV to 132kV substation would be required. However, reinforcement on the 132kV distribution system remains the responsibility of the DNO. Reinforcements at National Grid substations can usually be accommodated within 3 years, subject to planning approval

**4.3.7** UK Power Networks is the DNO for the East of England. It is primarily responsible for the 11kva and 33Kva electricity networks and is regulated by OFGEM. UK Power Networks have supplied Information on rough load estimates by sub area to 2031. **Table 4.11** illustrates the results:

Table 4.11: Estimate of Load Requirements

| Area/Sub Area | Total to 2031 | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 |
|---|---|---|---|---|---|
| **Cambridge** | | | | | |
| Station Area | 0.66 | 0.66 | 0.00 | 0.00 | 0.00 |
| North | 2.37 | 0.66 | 1.02 | 0.33 | 0.37 |
| East | 5.71 | 2.14 | 1.49 | 0.99 | 1.10 |
| South | 3.78 | 2.13 | 0.80 | 0.40 | 0.45 |
| West/Central | 1.82 | 1.03 | 0.44 | 0.17 | 0.18 |
| **South Cambridgeshire** | | | | | |
| Bassingbourn VC | 0.06 | 0.06 | 0.00 | 0.00 | 0.00 |
| Melbourn VC | 1.02 | 0.03 | 0.00 | 0.00 | 0.00 |
| Gamlingay VC/St Neot VC | 0.2 | 0.20 | 0.00 | 0.00 | 0.00 |
| Sawston VC | 0.23 | 0.23 | 0.00 | 0.00 | 0.00 |
| Linton VC | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 |
| Comberton VC | 3.15 | 2.50 | 0.65 | 0.00 | 0.00 |
| Histon VC | 0.55 | 0.55 | 0.00 | 0.00 | 0.00 |
| Fulbourn VC | 1.00 | 0.64 | 0.26 | 0.10 | 0.00 |
| Swavesey VC | 1.56 | 1.29 | 0.27 | 0.00 | 0.00 |
| Cottenham VC | 0.27 | 0.27 | 0.00 | 0.00 | 0.00 |
| Cross Boundary | | | | | |
| Southern Fringe | 8.09 | 4.36 | 3.73 | 0.00 | 0.00 |
| North West Cambridge | 11.76 | 3.43 | 6.42 | 1.91 | 0.00 |
| Cambridge East | 5.28 | 0.28 | 1.80 | 3.20 | 0.00 |
| Orchard Park/Arbury | 1.42 | 1.42 | 0.00 | 0.00 | 0.00 |
| Northstowe | 19.00 | 0.90 | 4.70 | 6.50 | 6.90 |

### Identifying the Costs

**4.3.8** Based on existing capacity and predicated load estimates, UK Power Networks have identified a series of Infrastructure improvements will be required to address future growth levels. UK power Networks has provided initial estimates of the cost of schemes where possible. It should be noted that, in many cases, infrastructure improvements to address existing deficiencies and support future development are the same item of infrastructure. The infrastructure requirements set out don't identify the specific costs to address the deficiency or future development individually. **Table 4.12, 4.13 and 4.14** overleaf summarises the schemes and their costs for Cambridge, South Cambridgeshire and Cross boundary developments.

Table 4.12: Electricity Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Area North | Primary substations upgrade at Storeys Way (Arbury/Histon Grid) | £3,000,000 |
| Area East | Sleaford Street Primary Substation upgrade work | £2,000,000 |
| Area South | Primary substations upgrade work at Radnor | £2,000,000 |
| Area West/Central | Primary substation upgrades Storeys Way and St Anthony's Street | £3,000,000 |
| Cambridge | Arbury Electricity Grid Improvements | £15,500,000 |
| Cambridge | Upgrade work to Sleaford Street and St Anthony Primary Substations | £3,000,000 |
| **Total Cost** | | **£28,500,000** |

Table 4.13: Electricity Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Gamlingay | Primary substations upgrades at Croydon, Sandy and Little Barford | £4,000,000 |
| Linton | Primary substations upgrades at Linton | £2,000,000 |
| Melbourne | Melbourne Grid Improvements | £7,500,000 |
| Melbourne | Primary substations upgrades at Melbourne | £2,000,000 |
| Sawston | Primary substations upgrades at Sawston | £4,500,000 |
| Swavesey | Primary substations upgrades at Longstanton and St Ives | £3,000,000 |
| South Cambridgeshire | Fulbourn Electricity Grid Improvements | £15,500,000 |
| South Cambridgeshire | Arbury Electricity Grid Improvements | £6,500,000 |
| South Cambridgeshire | Burwell Local 33 Electricity Grid Improvements | £6,500,000 |
| Northstowe | A new Primary Substation at Northstowe | £7,500,000 |
| **Total Cost** | | **£59,000,000** |

Table 4.14: Electricity Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Southern Fringe | Radnor and Sawston Primary Substation upgrade work | £4,500,000 |
| NW Cambridge | Storeys Way and Histon Primary Substations may require some upgrade work | £3,500,000 |
| NW Cambridge | New Energy Centre at University site | Unknown |
| Both local Authorities | New Primary Substation at Horningsea to support Fulbourn and Arbury Grid improvements | £8,500,000 |
| **Total Cost** | | **£16,500,000** |

### Funding and Delivery

**4.3.9** A key issue when it comes to the identification, funding and delivery of electricity infrastructure is the statutory and regulatory requirement on distributors 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 considered 'economic' in these 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.

**4.3.10** UK Power Networks have stated that some of the upgrade work required may be carried out solely by UK Power Networks, but some may require funding from developers and some may need to be fully funded by developers. It is considered that the majority of infrastructure improvement works will represent normal costs of development rather than specific infrastructure needing funding via S106 or CIL mechanisms.

**4.3.11** Importantly UK Power Networks also identified that reinforcements carried out at specific substations may impact on the overall requirements for improvements at other substations, resulting in the potential to reduce the overall reinforcement requirements by 2031.

**4.3.12** Broadly speaking, over the twenty year period of planned growth, there should not be a problem in delivering electricity capacity to support development in the area. 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 has the potential to impact on phasing as it is addressed systematically over time.

### Calculating Infrastructure Requirements - Gas

**4.3.13** In 2005, the UK became a net importer of gas for the first time as UK Continental Shelf supplies continue to dwindle. Import dependency could be around 46% by 2010 and as much as 80% by 2014-2015. In response, the UK has sought to diversify its supply options in order to increase its security of supply. Although there are inevitable uncertainties with demand/supply projections, DTI studies suggest that market participants are identifying and responding to the need to invest in new gas infrastructure. Long-term infrastructure developments include:

- Additional direct import connections from Norway;
- Liquefied natural gas (LNG) terminals to import gas from worldwide sources;
- More interconnection with continental Europe to import gas from the Netherlands and beyond;
- Pipeline upgrades to existing inter-connectors to increase import capacity;
- Additional investment in UKCS exploration and production; and
- Gas storage, both onshore and offshore, to provide additional seasonal and daily swing capacity.

**4.3.14** If all projected developments materialise, the total UK import / supply capability is forecast to be well in excess of demand. National Grid has investment plans in place to ensure that these demands will continue to be met. Any trends in power generation away from natural gas towards coal, renewable sources and nuclear technologies would only serve to increase gas availability towards the residential sector. While bio-fuels and liquid petroleum gas (LPG) may have a significant role to play in the transport sector, they are unlikely to impact on the availability of gas for residential consumers.

**4.3.15** National Grid is the local gas transporter for Cambridge and South Cambridgeshire. They are

responsible for the local gas distribution network across East Anglia including Intermediate (7bar-2bar), Medium (2bar>75mb) and Low Pressure (75mb>21mb) pipes. Initial Network Analysis has been performed against for the largest growth locations where, due to potential loading size, National Grid considers additional capacity in the local distribution network maybe required. Areas assessed include:

- Station Area;
- Cambridge East;
- Southern Fringe;
- North West Cambridge; and
- Northstowe.

**4.3.16** Analysis was performed against the medium and intermediate pressure tiers. The only sub area that could potentially require significant infrastructure improvements was Northstowe, once the development entered the 2015-2020 phase. National Grid identified that in other locations there was no lack of capacity to support development across Cambridge and South Cambridgeshire that potential improvements could not address.

### Identifying the Costs

**4.3.17** National grid identified infrastructure requirements and their costs on a reactive basis and costs are therefore very specific to individual schemes and the time they come forward. **Table 4.15** summarises the scheme and its cost.

Table 4.15: Gas Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Northstowe | Significant reinforcement of the gas distribution network | Unknown |

### Funding and Delivery

**4.3.18** National Grid is responsible for the delivery of improvements to the gas distribution network but lead times are specific to individual schemes. National Grid conducts network analysis at the time of application for a connection to the gas distribution network. The outcome of the analysis is based on what National Grid knows at the time of the application and capacity is only guaranteed on the 'customers' acceptance of a formal new load request.

**4.3.19** Essentially this represents a first come, first serve approach to capacity, subsequent reinforcement requirements and their cost. National Grid has a network planning infrastructure budget which is heavily regulated and constrained by OFGEM. This results in planning for reinforcement projects being conducted on a very reactive basis when new loads connect to the gas distribution network. The gas distribution network is constantly being upgraded via the companies 5 and 10 year reinforcement plans which sets out improvements that will be funded by the service provider.

**4.3.20** National Grid apportions the cost of improvements between themselves and prospective developers based on an economic test. National Grid have stated that a large proportion of the reinforcement work required will be carried out by National Grid but that the development industry will continue to contribute to improvements through the connection charges associated with the

direct costs of development.

## 4.4 Water Infrastructure

**4.4.1** Water infrastructure includes water supply, sewerage, surface water and fluvial flood risk management. It has been important that consideration is given to climate change when making decisions about water infrastructure requirements. Climate change will affect the location of development and infrastructure requirements to mitigate the increased risk of flooding and demand on water supply in the future. Identified infrastructure requirements have sought to take into consideration the impact of climate change over the period to 2031.

### Water Supply and Sewerage

**4.4.2** Cambridge Water Services (CWS) and Anglian Water Services (AWS) are the providers of water supply and sewerage across the area and they forecast supply and demand, and what infrastructure they need to deliver and the effect this would have on customers' bills. This has to be agreed with the regulator Ofwat and current investments are set out in 5 year, Asset Management Plans (AMP). The current AMP5 period runs between April 2010 and March 2015.

**4.4.3** The Anglian Water AMP5 sets out the following investments:

- £175 million maintaining its 43,000 kilometres of sewers. Focused on rehabilitating sewers in poor condition;
- £500 million maintaining its 1122 sewage treatment works. The work can vary from minor work such as replacing a pump that has reached the end of its life, to a major refurbishment of a treatment works;
- £100 million to improve the performance of its sewage treatment works (STW), including Cambridge STW in order to comply with more stringent discharge consents set by the Environment Agency;
- £150 million to increase the treatment capacity of our sewage treatment works to support future development;
- £200 million maintaining its 37,000 km of water mains;
- £300 million maintaining its water treatment works, water towers and pumping stations;
- £50 million to improve the performance of its water treatment works in order to comply with more stringent discharge requirements set by the Drinking water Inspectorate; and
- £70 million in providing foul water drainage so that 2,970 properties in rural communities.

**4.4.4** The Cambridge Water AMP5 sets out the following investments:

- £263,000 on new distribution meters;
- £6.85 million on pipe replacement;
- £395,000 on replacement assets at booster sites;

- £31,000 on replacement distribution meters;
- £9.5 million on new water mains;
- £666,000 on new boosters; and
- Major refurbishment at Cherry Hinton Reservoir.

### Calculating Infrastructure Requirements – Water and Sewerage

**4.4.5** CWS and AWS consider that there is limited available capacity and infrastructure upgrades to both water and sewerage infrastructure will be required to support new development. All the major growth areas will require considerable infrastructure upgrades to support their future development.

**4.4.6** The Cambridgeshire Horizons Detailed Water Cycle Strategy up to 2031: Major Growth Areas in and around Cambridge, Phase 2 – Detailed Strategy demonstrates that Cambridgeshire is in a recognised area of water stress. Through this study the Environment Agency were able to examine the waste water infrastructure requirements for the Local Authorities growth proposals.

**4.4.7** Both CWS and AWS are planning for future population growth and have identified a number of infrastructure projects and upgrades that will be required to support new development. The Water Cycle Strategies also have identified a number of aspirational projects to implement both for new development and for the existing housing stock. Both companies intend to continue to plan to meet future requirements and make investments in water and Sewerage infrastructure through future AMP's. Investments in AMP6 are due to be finalised in 2013-2014.

**4.4.8** Water body quality is set out within the EA's Anglian River Basin Management Plan 2009. The River Cam's status is currently poor with an objective of achieving good potential by 2027. On-site mitigation or exceptionally off site mitigation will be required for all development to achieve this and also potentially contributing towards rivers restoration projects.

### Identifying the Cost

**4.4.9** 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:

- The asset base which effectively forms their inheritance from the old nationalised system; and
- The cost of the additional investment that is required and which has been agreed between Ofwat and the supplier.

**4.4.10** The regulator aims to balance the need to allow the water companies enough financial leeway to invest while protecting consumers from predatory pricing. Ofwat have issued their Determination on Future Water and Sewage Charges for 2010-2015 and this effectively determines how much will be invested during this period. Within this additional investment, money will be spent on responding to 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.

**4.4.11** In order to achieve code level 3 / 4 for water in accordance with the Code for Sustainable Homes[3] developers would be looking at a cost of at least £268 per property. This increases to between £1,750 and £4,500 to achieve code level 5 / 6 for water.

**4.4.12** Retrofitting water efficiency into the existing stock can be achieved through water metering which would cost at least £500 per property. Other measures such as water butts, tap aerators, shower timer, aerated shower head and dual flush toilet would cost at least £178 per property. CWS have estimated that the installation of meters to enable charging based on use would cost at least £5 per property.

**4.4.13** River Restoration projects have been included in the capital programme of the Anglian River Basin Management Plan. Recent projects include a fish pass at Byron's Pool to by-pass an existing weir. These schemes can cost between £5,000 and £100,000 depending on the project.

**4.4.14** **Tables 4.16**, **4.17** and **4.18** set out the infrastructure requirements identified by the EA, CWS and AWS for Cambridge, South Cambridgeshire and cross boundary development respectively. It should be noted that infrastructure required to address existing deficiencies and those required to support future development have not been identified separately. Infrastructure requirements for cross boundary urban extensions are specifically required to support future growth:

Table 4.16: Water Supply and Sewerage Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Area North | Strategic surface water management features at Chesterton | £3,000,000 |
| Area North | Strategic surface water management features at North Chesterton | £3,000,000 |
| Area North | Strategic surface water management features at King's Hedges and Arbury Wetspot | £5,200,000 |
| Area East | Strategic surface water management features at Coldham's Common | Unknown |
| Area East | local sewer upgrade relating to Cambridge Airport | Unknown |
| Area South | Strategic surface water and management features at Cherry Hinton | £3,400,000 |
| Area South | Strategic surface water management features at Vicar's Brook | £3,000,000 |
| Area South | Strategic surface water management features at Cherry Hinton Village | £3,000,000 |
| Area West/Central | Strategic surface water management features at Bin Brook | £3,000,000 |
| Area West/Central | Strategic surface water management features at City Centre | £3,000,000 |
| Cambridge | River restoration projects, hydromorphology improvements and diffuse pollutant reduction | £100,000 |
| **Total Cost** | | **£26,700,000** |

[3] Communities and Local Government document (2006) which sets out standards for house building to create sustainable homes.

Table 4.17: Water Supply and Sewerage Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Histon/Impington | Strategic surface water management features at Milton | £3,000,000 |
| Northstowe | Upgrade to local booster pumps and installation of 1.2km of 300mm and 2km of 450mm water mains to connect Northstowe to the west. Reinforcement of mains from local booster station also required to support growth across South Cambridgeshire. | £2,134,000 |
| **Total Cost** | | **£5,134,000** |

Table 4.18: Water Supply and Sewerage Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| NW Cambridge | Windsor Road sewer upgrade relating to NIAB 1 and 2 | Unknown |
| NW Cambridge | Local Sewer Improvement relating to University Site | Unknown |
| NW Cambridge | Installation of 3.2km of 450mm water pipes along roadways to support NW Cambridge | £1,200,000 |
| East of Cambridge | Improvements to 5.5km of 450mm main reinforcement of Eastern Ring to support East of Cambridge | £1,700,000 |
| East of Cambridge | Northern fringe East - 3.4km of 450mm main flowing the same ring main route beyond Cambridge East | £1,100,000 |
| East of Cambridge | Strategic Connection to Waste Water Treatment Works (to serve Cambridge East) | Unknown |
| Southern Fringe | Installation of 3.3km of 600mm diameter pipe along grasslands and 1KM of 600mm pipe along roadways to support development in the Southern Fringe | £1,230,000 |
| **Total Cost** | | **£5,230,000** |

### Funding and Delivery

**4.4.15** Both CWS and AWS are currently delivering against Asset Management Plan (AMP5). By 2013-14 both will have to submit details relating to next 5 year period. This will need to identify all new treatment works, bolt-ons to treatment works, pumping stations and trunk sewers required.

**4.4.16** For new development, CWS and AWS 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, which is recoverable from developers. Developers often bear the costs of utilities as part of construction costs rather than alongside other community infrastructure secured through S106 agreements.

### Flood Alleviation and Water Drainage

**4.4.17** The Flood and Water Management Act and the Water Framework Directive set the context in which flood risk and water drainage must be considered. The sustainable management of water is an essential issue to be addressed in Cambridge and South Cambridgeshire.

### Calculating Infrastructure Requirements – Flood and Drainage

**4.4.18** Strategic Flood Risk Assessments (SFRA) present 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). Flood Zones are still relevant under the new NPPF. The current SFRA 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.

**4.4.19** The District Councils work closely with Cambridgeshire County Council and the Environment Agency to consider and assess flood and Drainage issues. Currently Cambridge and South Cambridgeshire have produced a Level 1 Strategic Flood Risk Assessment (September 2010).

**4.4.20** This document currently examines the implications for future development in terms of flood risk. A good approach to planning is to avoid developing within flood zones 2/3 unless absolutely necessary. Cambridge and South Cambridgeshire are already affected by flood issues in some locations and therefore there is limited capacity to support development in those areas.

**4.4.21** The Great Ouse Catchment Flood Management Plan identifies an increasing flood risk in the area. It defines policies for future flood management within certain areas of each local authority. In addition the Cambridge and Milton Surface Water Management Plan 2011 provides the evidence base and context in which standards of defences can be assessed on a site specific basis, based upon cost-benefit analysis of the potential new flood defence schemes. It demonstrates that 9,454 domestic properties are at risk of surface water flooding.

**4.4.22** New housing can increase the risk of diffuse pollution getting into surface water sewers and watercourses. The pollution can come from a range of sources, such as waste water from houses or industry that should go to the foul drain, or oil and sediment collected on hard surfaces that are washed into these drains during rain.

**4.4.23** Sustainable Urban Drainage Systems (SuDS) should be used wherever possible to mitigate the impact of this type of diffuse pollution. Surface Water Management Plans (SWMP) are encouraged by the practice guide companion to PPS 25. These plans should focus on managing flood risk, making efficient use of SuDS and safeguarding existing features of the water environment. There is the opportunity to turn these plans into SPDs to support the delivery of effective spatial plans.

### Identifying the Cost

**4.4.24** Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council are applying for grant aid to contribute to flood risk management. Cambridge City Council estimates that total infrastructure spend across the whole of the city to mitigate existing deficiency of the surface water system is likely to be in excess of £35million. In all cases onsite mitigation is required to ensure that the discharge is less than the current level.

**4.4.25** SuDS can be used to manage increasing flood risk on development sites. These will require installation and on-going maintenance costs and will therefore represent a cost to development. The maintenance and enhancement of green infrastructure or the urban forest would be a sustainable way to manage flood risk; improve water quality; and form an integral component of many SuDS schemes.

**4.4.26** There are three main ways in which woodland and other vegetation in the urban or peri-urban environment can contribute to flood alleviation:

- By delaying the downstream passage of flood flows.
- By reducing the volume of runoff through interception.
- By promoting rainfall infiltration into the soil.

**4.4.27** The Benefits of Green Infrastructure 2010 by Forest Research state that "Sustainable urban drainage systems (SuDS) have been developed to improve urban drainage and reduce the volume of urban runoff. SuDS encourage green space in urban areas by controlling the water at the source through trees and vegetation, green roofs, infiltration trenches and filter drains, swales and basins and ponds and wetlands. Drainage is a continual problem in highly urbanised areas and with space at a premium green roofs especially can be implemented as an alternative measure to reduce rainwater runoff and prevent flooding".

**4.4.28** Water efficiency measures would also be necessary to achieve level 6 of the Code for Sustainable Homes Standard. This standard would mean that about 30% of the water requirement of the home is provided from non-potable sources such as rainwater harvesting systems or grey water recycling systems. There are also other minimum requirements are required for surface water management – this may mean the provision of soakaways and areas of porous paving. There will be costs associated with achieving appropriate water efficiency targets to attain the higher standards required from the Code for Sustainable Homes.

**4.4.29** Infrastructure requirements for flood alleviation and water drainage fall into two distinct areas:

- Those that require the private sector to provide through appropriate planning policy; and
- Strategic schemes and programmes that require a public funding contribution

**4.4.30** When specific details of individual development schemes become available, consultation with the Local Authorities, Environment Agency and the Internal Drainage Boards will be required to identify the water infrastructure costs associated with new development.

**4.4.31** Strategic schemes and programmes proposed will need to be costed as they emerge. It could be considered that new development should contribute a proportional share of this cost, but until the actual location of infrastructure proposals and the development they protect becomes clearer, all the schemes to protect them cannot be identified or costed at this time. **Table 4.19** lists the identified flood alleviation and water drainage requirements.

Table 4.19: Flood Alleviation Infrastructure Requirements

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Cambridge | Flood risk reduction works for the River Cam and associated flood risk mitigation study | Unknown |
| Cambridge | Flood risk reduction works for Vicar's Brook and associated flood risk mitigation study | Unknown |

| | | |
|---|---|---|
| Cambridge | Environmental enhancement project to undertake river restoration projects and increase flood plain storage | Unknown |
| **Total Cost** | | **Unknown** |

### Funding and Delivery

**4.4.32** Defra has national policy responsibility for flood and coastal erosion risk management. Defra does not build or manage flood defences. Instead, government provides funding through grants to the Environment Agency and local authorities. The Environment Agency also administers grants for capital projects to local authorities and Internal Drainage Boards.

**4.4.33** The Environment Agency are the key delivery agency for defences along designated main rivers and work with partner organisations such as Cambridgeshire County Council and both District Councils to deliver schemes.

**4.4.34** In future, where development is being considered at an early stage as part of a wider plan, the Community Infrastructure Levy may be an appropriate funding tool to pay for wider flood risk infrastructure, strategic surface water management opportunities, such as water storage or large-scale sustainable drainage system's needs.

## 4.5 Physical Infrastructure - Household Waste and Recycling

**4.5.1** Household waste and recycling infrastructure has addressed household waste impacts and recycling issues such as refuse and recycling collections and the provision of household recycling centres (HRC). New residential development will affect:

- Household recycling centres (HRC);
- Refuse and recycling collection vehicles;
- Bring sites; and
- Kerbside collection.

### Context

**4.5.2** The Joint Municipal Waste Management Strategy (JMWMS) for Cambridgeshire and Peterborough 2008 – 2022 sets out the objectives and aims of the Cambridgeshire and Peterborough Waste Partnership (Known as RECAP). The JMWMS includes a Waste Prevention Plan and key targets within the strategy include:

- 45 – 50% of household waste recycled/composted by 2010;
- 50 – 55% of household waste recycled/composted by 2015; with
- 55 – 65% of household waste recycled/composted by 2020.

**4.5.3** The partnership has also set the following as priority areas over the next three years:

- Waste prevention;
- Dry recycling; and

- Trade waste recycling;

### Calculating the infrastructure Requirement

**4.5.4** The adopted Cambridgeshire and Peterborough Minerals and Waste Core Strategy 2010 identifies the need for new HRCs to serve existing and emerging new communities over the period until 2026. These facilities are necessary to assist in meeting stringent targets for the diversion of waste away from landfill. The Plan sets out the broad locations where they are to be located. Those which are intended to serve the Cambridge area are:

- Cambridge East;
- Cambridge North;
- Cambridge South; and
- Northstowe.

**4.5.5** The need for the new HRCs is taken forward through allocations made in the adopted Cambridgeshire and Peterborough Minerals and Waste Site Specific Proposals Plan 2011. Areas of Search for the new HRCs are allocated in this Plan at Cambridge East, Cambridge Northern Fringe East, and Northstowe.

**4.5.6** The exception to the above is the area of Cambridge South. Whilst a site specific allocation was proposed for a new HRC to serve Cambridge South the planning Inspector who considered the Plan at an independent Examination concluded that the allocation was unsound, principally by reference to lack of consistency with national planning policy with respect to Green Belt and the Historic Environment. The proposed allocation was therefore removed from the Plan, and the Inspector advised that the local planning authorities concerned (i.e. Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council) should work together to identify a suitable site for a new HRC to serve Cambridge south. This need has yet to be addressed.

**4.5.7** The adopted RECAP Waste Management Design Guide Supplementary Planning Document (SPD) 2011 supports the Cambridgeshire and Peterborough Minerals and Waste Plan. This sets out the mechanism by which contributions to the new HRCS, and improvements to existing HRCs, will be secured.

**4.5.8** Improvements to existing HRCs that already serve Cambridge and South Cambridgeshire will comprise:

- St Neots – a permanent replacement Household Recycling Centre was opened in September 2009 to replace the previous temporary site; (HRC serves Bourn and Gamlingay Wards); and
- Bluntisham – no change in capacity required at this site. (HRC serves Papworth and Elsworth wards).

**4.5.9** It should be noted that whilst not in South Cambridgeshire, facilities in St Neots and Bluntisham serve part of the District and therefore are a relevant cross boundary infrastructure consideration. **Figure 4.6** overleaf Recycling Centre Catchments, indicates the locations of sites and the catchment covered. The catchments are grouped by ward.

Figure 4.6: Recycling Centre catchments


**4.5.10** **New HRC** sites will typically be on 1.25 hectares of land, allowing enough flexibility to effectively manage traffic flows of the site, by accommodating split-level easy access for unimpeded traffic movement through the site. This size site will also allow for effective landscaping, as well as the ability, where appropriate, to provide further environmental mitigation in more populated areas by putting the operations under a roofed area, or in a building.

**4.5.11** **Refuse collection vehicles** conduct area-based collections of refuse from all residential areas at a pass rate of approximately 1,000 households a day, with potential for 1,200-1,300 in a very dense urban setting. At present, there is some capacity within collection services but this is specific to certain locations.

**4.5.12** **Recycling collection vehicles** have a typical pass rate of around 700-800 households a day. In addition, there is a requirement for dwellings on both collection services to be supplied with appropriate bins, timetables and to be incorporated into new or existing routes.

**4.5.13** There are currently around 300 **Bring Sites** operating within the RECAP area collecting a range of materials for recycling. The RECAP Design Guide SPD sets out the standard of one additional Bring Site per 800 dwellings. These are required for significant residential developments, for smaller sites the need for new or upgrades for existing sites will be determined by the preparation of a Waste Audit and Strategy.

**4.5.14** New **kerbside collection containers** will be required for each new dwelling.

### Identifying the Cost

**4.5.15** Household recycling centres can take several forms. Examples range in scale from:

- Islington's new waste transfer station, which was developed as part of the new Arsenal Stadium project and which includes seven compactors in a recycling and transfer facility which will reportedly cost Arsenal £60m; to
- The new £3.5million Aylesbury Recycling and Reuse Centre, which is primarily aimed at providing a community-based recycling facility.

**4.5.16** The County Council has provided outline costs for a covered HRC facility on a 1.25 hectare site are based on an independent assessment of site costs. In 2010, a new site could range from £3 million to £5.5 million taking in to account location and layout. Outline costs for upgraded facilities will be site specific and need to be based on an independent assessment of site costs, and on real costs incurred.

**4.5.17** The capital cost of a refuse collection vehicle is £140,000, 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 be similar at £150,000.

**4.5.18** No cost for Bring site facilities has been identified.

**4.5.19** To facilitate both refuse and kerbside collection services, new dwellings will require additional bins and promotion information, including timetables. Cambridgeshire County Council estimate the cost of including a new residential dwelling on a refuse and recycling collection scheme at approximately £70 per dwelling dependent on the scheme. This comprises of the following elements:

- Wheelie bin;
- recycling boxes;
- Kitchen waste caddy;
- Publicity material including instructions about the scheme and timetables; and
- The re-configuration and incorporation of new dwellings into existing collections.

**4.5.20** Cambridge City Council Planning Obligations Strategy (2010) identifies a cost of £75 per dwelling and a cost of £150 per flat. The increased cost is due to the higher cost of larger eurobins used in flatted developments. For the purposes of this study we have assumed a cost of £75 per dwelling.

**4.5.21** The County Council state that these outline costs include all reasonable activities associated with the development of a site including, site investigations, indicative land costs, legal fees, landscaping, environmental mitigation, design, construction, and planning costs. Peter Brett Associates consider it prudent to assume a minimum cost would be £5.5m to acquire land, develop and equip the site. **Tables 4.20, 4.21** and **4.22** overleaf identified the infrastructure requirements and their cost:

Table 4.20: Waste and Recycling Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Station Area | Kerbside recycling equipment, including bins, boxes and promotional material etc | £27,675 |
| Area East | Kerbside recycling equipment, including bins, boxes and promotional material etc | £210,750 |
| Area North | Kerbside recycling equipment, including bins, boxes and promotional material etc | £89,026 |
| Area South | Kerbside recycling equipment, including bins, boxes and promotional material etc | £132,525 |
| Area West/Central | Kerbside recycling equipment, including bins, boxes and promotional material etc | £90,600 |
| Cambridge | Three new Household Recycling Centres in Cambridge | £16,500,000 |
| Cambridge | One new Refuse Collection Vehicle (RCV) | £140,000 |
| Cambridge | Two New Recycling Collection Vehicle | £160,000 |
| Cambridge | Nine new Bring Sites (City wide) | Unknown |
| **Total Cost** | | **£17,350,576** |

Table 4.21: Waste and Recycling Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Bassingbourn | Kerbside recycling equipment, including bins, boxes and promotional material etc | £2,400 |
| Comberton | Kerbside recycling equipment, including bins, boxes and promotional material etc | £118,275 |
| Cottenham | Kerbside recycling equipment, including bins, boxes and promotional material etc | £10,200 |
| Fulbourn | Kerbside recycling equipment, including bins, boxes and promotional material etc | £37,500 |
| Gamlingay | Kerbside recycling equipment, including bins, boxes and promotional material etc | £7,350 |
| Histon/Impington | Kerbside recycling equipment, including bins, boxes and promotional material etc | £20,550 |
| Linton | Kerbside recycling equipment, including bins, boxes and promotional material etc | £1,200 |
| Melbourn | Kerbside recycling equipment, including bins, boxes and promotional material etc | £38,325 |
| Sawston | Kerbside recycling equipment, including bins, boxes and promotional material etc | £8,550 |
| Swavesey | Kerbside recycling equipment, including bins, boxes and promotional material etc | £58,575 |
| South Cambridgeshire | Two new Refuse Collection Vehicles (RCV) | £280,000 |
| South Cambridgeshire | Three New Recycling Collection Vehicles | £160,000 |
| South Cambridgeshire | Six new Bring Sites | Unknown |
| Northstowe | New Household Waste Recycling Centre (HRC) and Depot | £5,500,000 |
| Northstowe | Two new Refuse Collection Vehicle | £280,000 |
| Northstowe | Three new Recycling Collection Vehicle to support Northstowe | £240,000 |
| Northstowe | Kerbside recycling equipment, including bins, boxes and promotional material etc | £712,500 |
| Northstowe | Twelve new Bring Sites | Unknown |
| **Total Cost** | | **£7,475,425** |

Table 4.22: Waste and Recycling Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Orchard Park/Arbury | Kerbside recycling equipment, including bins, boxes and promotional material etc | £84,000 |
| Orchard Park/Arbury | Two new Bring Sites | Unknown |
| Southern Fringe | One new Refuse Collection Vehicle | £140,000 |
| Southern Fringe | One new recycling collection vehicle to support development in the Southern Fringe | £80,000 |
| Southern Fringe | Kerbside recycling equipment, including bins, boxes and promotional material etc | £303,226 |
| Southern Fringe | Five new Bring Sites | Unknown |
| NW Cambridge | One new Refuse Collection Vehicle | £140,000 |
| NW Cambridge | One new recycling collection vehicle to support development at North West Cambridge | £80,000 |
| NW Cambridge | Kerbside recycling equipment, including bins, boxes and promotional material etc | £441,000 |
| NW Cambridge | Seven new Bring Sites | Unknown |
| East of Cambridge | Kerbside recycling equipment, including bins, boxes and promotional material etc | £198,075 |
| East of Cambridge | Three new Bring Sites | Unknown |
| **Total Cost** | | **£1,466,301** |

### Funding and Delivery

**4.5.22** New HRC sites will need to be constructed and other improvements made to existing sites in a timely manner, to enable both the existing and new populations to benefit from the service. The timetable for new waste infrastructure development is linked to both planned growth and funding.

**4.5.23** The County Council have developed a calculated approach to developer contributions via S106 which takes the cost of required improvements and apportions the cost to all new households within the facility catchment. For South Cambridgeshire it is important to note that development within each catchment is only a proportion of the development the proposed facilities are due to cater for.

**4.5.24** Waste collections are funded through council tax receipts. Once new housing developments are occupied, residents begin to contribute to the revenue costs of providing waste collection services. The City and District Councils are responsible for refuse and recycling collections and the County is responsible for the provision of new household waste and recycling centres. However the capital costs of new equipment place an extra burden on authorities. It is anticipated that funding towards the capital costs of new refuse and recycling equipment will be need to be addressed through developer contributions.

**4.5.25** The provision of refuse collection and recycling equipment and incorporation on collections rounds should be undertaken on the occupation of the first residents. A lead time of 2 years to design and implement a new scheme should be provided before existing HRC facilities reach capacity.

## 4.6 Physical Infrastructure - Telecommunications

**4.6.1** Telecommunications covers a wide range of services including voice, audio visual, mobile telephone and internet. The provision of ICT infrastructure is unlikely to have a significant impact on the delivery of future planned provision, but importantly Broadband will have implications for Cambridge and South Cambridgeshire economic competitiveness. This section focuses on the provision of Broadband via the British Telecom network.

**4.6.2** The UK Cable network is provided by Virgin Media. They supply cable TV, broadband, home phone and mobile phone services and are the UK's only nationwide fibre optic network covering 85 per cent of businesses in the UK. Virgin Media provides cable services on a commercial basis and therefore the availability of cable is based solely on commercial viability of provision, therefore the consideration of infrastructure requirement for the cable network is beyond the scope of this study.

### Context

**4.6.3** The provision and maintenance of telecommunication infrastructure is the responsibility of British Telecom (BT). There are several companies that supply telecommunication services to domestic and business users via the BT network, but it is BT that is responsible for the infrastructure. At the end of the 2005 BT reached over 99% of homes with broadband.

**4.6.4** The Government wants Britain to have the best superfast broadband network in Europe by 2015 and has invited local authorities to bid for funding towards broadband plans through Broadband Delivery UK (BDUK).

**4.6.5** In terms of capacity, the Rural Broadband Partnership identifies that across Cambridge and South Cambridgeshire, asymmetric digital subscriber line (ADSL) broadband provision is limited to 500kps or lower in some areas. The Department of Culture Media and Sport has also identified that 140,956 properties are located in areas with poor broadband provision which is eligible for State support to receive quality broadband. This represents 40.5% of all properties (348,345) in the Cambridgeshire and Peterborough Area.

**4.6.6** Cambridgeshire County Council is working with Peterborough City Council, District Councils, businesses and other key partners, supported by the Greater Cambridgeshire and Greater Peterborough Enterprise Partnership, to deliver superfast broadband to the area. The objective is to enable sustainable access for at least 90 % of all premises, faster speeds of 30 Mbps (megabits per second) and faster downstream connectivity of at least 2Mbps for all premises by 2015.

### Calculating Infrastructure Requirements

**4.6.7** BT has a statutory obligation to supply telecommunication capacity as and when required under a universal service obligation. When a new housing or employment development is built, basic infrastructure requirements will be met by BT. Due to the universal service obligation a basic service levels will always be met, but the provision of superfast broadband will require additional infrastructure investment on top of this.

**4.6.8** Cambridgeshire County Council and Peterborough City Council have approved a Local Broadband Plan (LBP) and given notice that it plans to publish a contract notice in order to commence a competitive dialogue procurement to identify a suitable supplier to provide the required Next

Generation Broadband infrastructure across both areas.

### Identifying the Cost

**4.6.9** Basic service level infrastructure improvements are generally completed by BT, at their own cost. The roll out of superfast broadband will require investment by both the private and public sectors to facilitate provision that the private sector alone would not provide.

**4.6.10** The total value of the LBP contract is currently envisaged to be between £70 million and £100 million excluding the cost of VAT. **Table 4.23** sets out the Telecommunications Infrastructure requirements for the Cambridgeshire and Peterborough. It should be noted that the cost of this infrastructure requirement has not been included in the overall costs for each local authority.

Table 4.23: Telecommunications Infrastructure Requirements – Sub Regional

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Cambridgeshire and Peterborough | Superfast Broadband (90% coverage) | £70,000,000 to £100,000,000 |

### Funding and Delivery

**4.6.11** For basic service level telecommunications, BT puts forward cases internally to ensure revenue is available to fulfil future needs. This provision is generally self-financing, however, some infrastructure improvements may be require direct contributions from developers which are addressed through the development process.

**4.6.12** The Government expects that most Councils will match BDUK funding from their coffers and that this will then be doubled (match-funded) again by the private sector. To fund Superfast Broadband Cambridgeshire County Council and Peterborough City Council have identified a public sector contribution of approximately £30 million, comprising:

- £6.75 million from BDUK allocated funding; and
- £23 million from Cambridgeshire County Council and Peterborough City Council.

**4.6.13** Other funding sources, such as from EU funding streams, may also be accessed, but there is an expectation that significant private sector investment will be made by the private supplier.

# 5 Social Infrastructure

**5.1.1** **Section 5** considers the infrastructure impacts on social infrastructure, including education, health, leisure and recreation, community and social and emergency.

## 5.2 Education

**5.2.1** The 'Education Act 1996' consolidated the Education Act 1944 and subsequent legislative changes that had been enacted. Section 14 of the Act placed Local Authorities under a general duty to secure school places for every child living in their area of responsibility who was of school age and whose parents wanted their child educated in the state sector. Cambridgeshire County Council, as Education authority has a duty to ensure that there are sufficient school places (including academies and free schools) in terms of quantity and quality to meet the needs of the population of the County.

**5.2.2** Future housing development will lead to an increase in educational age population. This will result in a demand for additional school places for early years 0-5, primary schools and secondary schools, special schools and post 16 education.

### Context

**5.2.3** The County Council has developed an Integrated Plan and monitors and reviews supply and demand of places through bi-annual pupil projections. It takes into account live birth rates, historical transfer rates and local housing developments.

**5.2.4** Across South Cambridgeshire, the County Council has identified that Cambourne, Waterbeach and Cottenham primary catchment areas are under pressure. Within Cambridge demand is forecast to exceed available capacity from September 2013, with a significant increase in the north of the city from 2014.

**5.2.5** A wide range of infrastructure improvements have been undertaken or are planned to address capacity in the immediate future. Including works at the following schools:

- Extension to Abbey Meadows Community Primary School;
- Extension of Colville Community Primary School in Cherry Hinton;
- Temporary (one year) extension to Queen Edith Community Primary School;
- Extension and age range change to 4-11 at Cherry Hinton Church of England Voluntary Controlled Infant School and Community Junior School;
- Increased admission limit at Orchard Park Community Primary School (from 0.5 FE to one FE);
- Increased admission limit at Grove Community Primary School (from 1 FE to 2FE);
- Infrastructure improvements to enable an increased intake from 35 to 45 places at St Laurence Roman Catholic (RC) Voluntary Aided School;
- Extension of St Matthew's Community Primary School;

- A new two-form entry (FE) primary school in Gunhild Way Queen Emma Primary School);
- Temporary expansion of Cottenham Primary School;
- Temporary expansion of Waterbeach Primary School; and
- New Secondary School at Cambourne (due to open 2013).

### Calculating Infrastructure Requirements

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

- Children's centres;
- Pre-school/nursery;
- Primary schools;
- Secondary schools;
- Further education (Post 16); also
- Special schools.

**5.2.7** The County Council has identified a pupil product ratio per 100 dwellings for pre-school, primary and secondary schools:

- Pre School – 9 to 13 places;
- Primary – 25 to 35 places; and
- Secondary 18 to 25 places.

**5.2.8** Following advice from the Cambridgeshire County Council, the IDS has translated the school places requirement for primary and secondary schools into school provision based on the higher end of the pupil product ratio. This reflects the County Council's recent experience of new housing development across Cambridgeshire, including recent development at Cambourne. It should be noted that requirements therefore could fluctuate subject to future pupil product ratios and therefore subsequent contributions from specific schemes could vary.

**5.2.9** Nationally, the size of primary and secondary schools varies by form entry. A form entry is the number of classes in each year group. Generally, primary schools are established as either 210 (1 form of entry (FE)), or 420 (2FE) place schools.

**5.2.10** This facilitates single year group teaching and compliance with existing infant class size limits, introduced in the 'Standards and Effectiveness Act 1998'. Cambridgeshire secondary schools range from 600 places (4FE) to 1,750 places (11FE), excluding sixth form provision.

**5.2.11** In September 2007, Cabinet agreed that the Council should not operate a strict policy on secondary school size, but that only in exceptional circumstances should schools be outside the Council's preferred range. Cambridgeshire County Council's preference for new school provision is:

- Primary school – 1 FE – 2FE – 210 - 420 pupils;
- Primary School over 2 sites (infant and Junior) – 4FE – 840 places; and
- Secondary school - 4 to 11 FE – 600 to 1,750 pupils (excluding Sixth Form).

**5.2.12** In November 2009, it was agreed, in consultation with Councillors, that in response to rising birth rates and increased demand for places in areas of the County with limited site options, the Council should consider on a case-by-case basis:

- Single schools of up to 630 places (3FE); and
- Schools operating over two sites, including Infant and Junior schools, providing up to 840 places (4FE).

**5.2.13** In 2007, The County Council Cabinet agreed that the following policy principles should be used in seeking sites for, and supporting the on-going planning of admissions to, schools:

- Schools should be sited as close to the centre of the communities they serve as possible, unless physical constraints or other opportunities to reduce site size requirements exist;
- Secondary schools should be sited, where possible, so that the maximum journey distance for pupils is within the statutory walking distance, 3 miles, as set out in section 444 of the Education Act 1996;
- Primary schools should be sited, where possible, so that the maximum journey distance for pupils is within the statutory walking distance, 2 miles for children up to 11 years old, as set out in the Council's home to school/college transport policy;
- In line with the 2005 Act's requirement to promote sustainable school travel, sites should be well connected to public transport links, and well connected to cycling and walking routes;
- Schools should not be located in areas at risk of flooding; and
- Sufficient site area should be made available to provide for the predicted peak in demand for places and to provide the Council with the flexibility to respond to uncertainty with regard to phasing, housing mix and timescales for development.

**5.2.14** Where there is a clear educational imperative to provide additional school places in response to basic need requirements, proposals for the expansion of provision on school sites which do not meet the Department for Education's Building Bulletin standards, in terms of outdoor space, should be pursued in cases where there is a suitable site for team game activities within 10 minutes' walk from the school concerned.

**5.2.15** The information provided by Cambridgeshire County Council is intended to give as full a picture as possible of the likely impact of the identified development. However, as the location of some developments is unidentified, it has not been possible to identify the impact of all development on

specific school catchment areas. Depending on the location of these "unidentified" development sites, there may or may not be a need for additional provision to be secured. Cambridgeshire County Council have undertaken a capacity assessment for all primary and secondary catchment areas. This information is set out in **Tables 5.1** to **5.6** below:

Table 5.1: Primary School Capacity - Cambridge

| Infrastructure Capacity | Number of dwellings | Places Required | Existing Surplus Capacity | Balance of Places | Net New Places | Primary FE |
|---|---|---|---|---|---|---|
| **Cambridge North** | | | | | | |
| Cambridge North (AMR) | 505 | 177 | 0 | -177 | 177 | 0.84 |
| Cambridge North (Identified SHLAA) | 304 | 106 | 0 | -106 | 106 | 0.51 |
| Cambridge North (Unidentified SHLAA) | 378 | 132 | 0 | -132 | 132 | 0.63 |
| Unidentified sites | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Orchard Park (Approved) | 272 | 95 | 0 | -95 | 95 | 0.45 |
| Orchard Park | 220 | 77 | 0 | -77 | 77 | 0.37 |
| **Total** | **1,679** | **588** | **0** | **-588** | **588** | **2.80** |
| **Cambridge South** | | | | | | |
| Cambridge South (AMR) | 2,789 | 976 | | -976 | 976 | 4.65 |
| Cambridge South (Identified SHLAA) | 1,411 | 494 | 0 | -494 | 494 | 2.35 |
| Cambridge South (Unidentified SHLAA) | 1,785 | 625 | 0 | -625 | 625 | 2.98 |
| Unidentified sites | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Bell School | 347 | 121 | 0 | -121 | 121 | 0.58 |
| **Total** | **6,332** | **1,900** | **0** | **-2,216** | **2,216** | **10.55** |
| **Cambridge City** | **8,011** | **2,487** | **0** | **-2,804** | **2,804** | **13.35** |

**5.2.16** Across Cambridge City, planned housing development is forecast to require a significant number of additional childcare and early years settings to be provided. In recognition of the existing shortfall in provision in both the north and south of the city, there is need for an additional four settings in the north of the city and fifteen in the south, based on the levels of development identified. This is in addition to that being provided as part of the major housing development sites in and around Cambridge, set out above.

**5.2.17** The provision of sites suitable for childcare and early years provision will be a key consideration for the County Council in responding to and supporting the development of the Cambridge City Local Plan.

Table 5.2: Primary School Capacity- South Cambridgeshire

| Infrastructure Capacity | Number of Dwellings | Places Required | Existing Surplus Capacity | Balance of Places | Net New Places | Primary FE |
|---|---|---|---|---|---|---|
| **Bassingbourn VC** | | | | | | |
| Bassingbourn | 20 | 7 | 61 | 54 | 0 | 0.00 |
| Guilden Morden | 0 | 0 | 21 | 21 | 0 | 0.00 |
| Orwell | 0 | 0 | 75 | 75 | 0 | 0.00 |
| Steeple Morden | 5 | 2 | 30 | 28 | 0 | 0.00 |
| Unidentified sites | 7 | 2 | 0 | -2 | 2 | 0.01 |
| **Total** | **32** | **11** | **187** | **176** | **0** | **0.01** |
| **Bottisham VC** | | | | | | |
| Fen Ditton | 0 | 0 | 10 | 10 | 0 | 0.00 |
| Fulbourn | 490 | 172 | 7 | -165 | 165 | 0.82 |
| Gt Wilbraham | 0 | 0 | 28 | 28 | 0 | 0.00 |
| Teversham | 0 | 0 | 7 | 7 | 0 | 0.00 |
| Unidentified sites | 10 | 4 | 0 | -4 | 4 | 0.02 |
| **Total** | **500** | **175** | **52** | **-123** | **123** | **0.84** |
| **Comberton VC** | | | | | | |
| Barton | 0 | 0 | 48 | 48 | 0 | 0.00 |
| Bourn | 0 | 0 | -8 | -8 | 8 | 0.00 |
| Caldecote | 0 | 0 | 39 | 39 | 0 | 0.00 |
| Cambourne | 1,391 | 487 | 21 | -466 | 466 | 2.32 |
| Comberton | 11 | 4 | 184 | 180 | 0 | 0.00 |
| Coton | 0 | 0 | 13 | 13 | 0 | 0.00 |
| Hardwick | 0 | 0 | 92 | 92 | 0 | 0.00 |
| Haslingfield | 23 | 8 | -4 | -12 | 12 | 0.04 |
| Unidentified sites | 152 | 53 | 0 | -53 | 53 | 0.25 |
| **Total** | **1,577** | **552** | **385** | **-167** | **167** | **2.61** |
| **Cottenham VC** | | | | | | |
| Cottenham | 0 | 0 | 47 | 47 | 0 | 0.00 |
| Waterbeach | 63 | 22 | -6 | -28 | 28 | 0.11 |
| Willingham | 38 | 13 | 102 | 89 | 0 | 0.00 |
| Unidentified sites | 35 | 12 | 0 | -12 | 12 | 0.06 |
| **Total** | **136** | **48** | **143** | **95** | **0** | **0.17** |
| **Gamlingay VC** | | | | | | |
| Gamlingay VC | 95 | 33 | 52 | 19 | 0 | 0.00 |
| Unidentified sites | 3 | 1 | 0 | -1 | 1 | 0.01 |
| **Total** | **98** | **34** | **52** | **18** | **0** | **0.01** |
| **Impington VC** | | | | | | |
| Dry Drayton | 0 | 0 | 24 | 24 | 0 | 0.00 |
| Girton | 0 | 0 | -10 | -10 | 10 | 0.00 |
| Histon | 34 | 12 | 71 | 59 | 0 | 0.00 |
| Milton | 0 | 0 | 7 | 7 | 0 | 0.00 |
| Oakington | 0 | 0 | 7 | 7 | 0 | 0.00 |
| Unidentified sites | 26 | 9 | 0 | -9 | 9 | 0.04 |
| **Total** | **60** | **21** | **99** | **78** | **0** | **0.04** |

| Infrastructure Capacity | Number of Dwellings | Places Required | Existing Surplus Capacity | Balance of Places | Net New Places | Primary FE |
|---|---|---|---|---|---|---|
| **Linton VC** | | | | | | |
| Balsham | 0 | 0 | 13 | 13 | 0 | 0.00 |
| Burrough | 0 | 0 | 42 | 42 | 0 | 0.00 |
| Castle Camps | 0 | 0 | 9 | 9 | 0 | 0.00 |
| Gt Abington | 0 | 0 | 25 | 25 | 0 | 0.00 |
| Linton | 6 | 2 | 50 | 48 | 0 | 0.00 |
| Unidentified sites | 10 | 4 | 0 | -4 | 4 | 0.02 |
| **Total** | **16** | **6** | **139** | **133** | **0** | **0.02** |
| **Melbourn VC** | | | | | | |
| Barrington | 39 | 14 | 47 | 33 | 0 | 0.00 |
| Fowlmere | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Foxton | 14 | 5 | 48 | 43 | 0 | 0.00 |
| Harston | 14 | 5 | -2 | -7 | 7 | 0.02 |
| Hauxton | 396 | 139 | -2 | -141 | 141 | 0.66 |
| Melbourn | 0 | 0 | 26 | 26 | 0 | 0.00 |
| Meldreth | 20 | 7 | 1 | -6 | 6 | 0.03 |
| Thriplow | 0 | 0 | -6 | -6 | 6 | 0.00 |
| Unidentified sites | 28 | 10 | 0 | -10 | 10 | 0.05 |
| **Total** | **511** | **179** | **112** | **-67** | **67** | **0.76** |
| **Sawston VC** | | | | | | |
| Babraham | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Duxford | 17 | 6 | 4 | -2 | 2 | 0.00 |
| Sawston | 0 | 0 | 31 | 31 | 0 | 0.00 |
| Shelford | 31 | 11 | 0 | -11 | 11 | 0.05 |
| Stapleford | 0 | 0 | 58 | 58 | 0 | 0.00 |
| Whittlesford | 18 | 6 | 15 | 9 | 0 | 0.00 |
| Unidentified sites | 23 | 8 | 0 | -8 | 8 | 0.04 |
| **Total** | **89** | **31** | **108** | **77** | **0** | **0.09** |
| **Swavesey VC** | | | | | | |
| Bar Hill | 0 | 0 | 13 | 13 | 0 | 0.00 |
| Elsworth | 0 | 0 | -1 | -1 | 1 | 0.00 |
| Fen Drayton | 0 | 0 | -3 | -3 | 3 | 0.00 |
| Fenstanton | 0 | 0 | 24 | 24 | 0 | 0.00 |
| Longstanton | 307 | 107 | 36 | -71 | 71 | 0.51 |
| Over | 28 | 10 | 2 | -8 | 8 | 0.05 |
| Papworth | 404 | 141 | 102 | -39 | 39 | 0.00 |
| Swavesey | 0 | 0 | 6 | 6 | 0 | 0.00 |
| Unidentified sites | 42 | 15 | 0 | -15 | 15 | 0.07 |
| **Total** | **781** | **273** | **179** | **-94** | **94** | **0.63** |
| **Northstowe** | | | | | | |
| Northstowe | 9,500 | 3,325 | 0 | -3,325 | 3,325 | 15.83 |
| **Total** | **9,500** | **3,325** | **0** | **-3,325** | **3,325** | **15.83** |
| **South Cambridgeshire** | **13,300** | **4,655** | **1,456** | **-3,199** | **3,776** | **16.66** |

**5.2.18** Across South Cambridgeshire, there is generally sufficient capacity within existing primary schools to meet the demand arising from the proposed new developments. However, this needs to be monitored closely, as many schools have only very limited surplus capacity and this may not be in

the year groups where demand for additional places could be expected.

**5.2.19** In some instances, this additional demand can be managed through over-admission into some year groups, and/or the provision of temporary accommodation. There may be some instances where permanent expansions of schools would be required, which would need to be addressed on a case-by-case basis as part of the County Council's on-going school place planning and capital investment planning processes. The capital cost of provision of temporary accommodation needs to be taken into account.

**5.2.20** There are number of specific examples where there is insufficient capacity at existing schools, and where the numbers of additional pupils forecast from developments mean that additional school places will be required. These include proposed developments in Cambourne and the catchment areas of Hauxton, Fulbourn and Hatton Park Primary School, Longstanton.

Table 5.3: Primary School Capacity – Cross Boundary

| Infrastructure Capacity | Number of dwellings | Places Required | Existing Surplus Capacity | Balance of places | Net New Places | Primary FE |
|---|---|---|---|---|---|---|
| Southern Fringe | 3,696 | 1,294 | 0 | -1,294 | 1,294 | 6.16 |
| North West | 5,880 | 2,058 | 0 | -2,058 | 2,058 | 9.80 |
| Cambridge East | 2,641 | 924 | 0 | -924 | 924 | 4.40 |
| **Cross Boundary** | **12,217** | **4,276** | **0** | **-4,276** | **4,276** | **20.37** |

**5.2.21** There is currently no education capacity available to meet the needs of the major cross boundary housing developments planned around the fringes of Cambridge. These developments, as with other major housing developments are anticipated to be self-contained in terms of provision of primary school places.

Table 5.4: Secondary School Capacity - Cambridge

| Infrastructure Capacity | Number of Dwellings | Places Required | Existing Surplus Capacity | Surplus Places After development | Net New Places | Secondary FE |
|---|---|---|---|---|---|---|
| Cambridge (North) | 1,679 | 420 | -122 | -542 | 542 | 3.61 |
| Cambridge (South) | 6,332 | 1,583 | -204 | -1,787 | 1,787 | 11.91 |
| **Cambridge** | **8,011** | **2,003** | **-326** | **-2,329** | **2,329** | **15.53** |

**5.2.22** Across the city, there is forecast to be a shortfall in secondary school places from 2015 onwards as the larger primary aged cohorts from 2008 age-through the education system. Therefore, based on the current development projections, there will be a need for a further secondary school to be provided to meet the demand across the city. The County Council has not undertaken the consultation and detailed review work required to identify the most appropriate approach for securing this additional capacity.

Table 5.5: Secondary School Capacity – South Cambridgeshire

| Infrastructure Capacity | Number of Dwellings | Places Required | Existing Surplus Capacity | Surplus Places After development | Net New Places | Secondary FE |
|---|---|---|---|---|---|---|
| Bassingbourn VC | 32 | 8 | 177 | 169 | 0 | 0.05 |
| Bottisham VC | 500 | 125 | 26 | -99 | 99 | 0.71 |
| Comberton | 1,577 | 394 | 0 | -394 | 394 | 2.35 |
| Cottenham VC | 136 | 34 | 12 | -22 | 22 | 0.20 |
| Gamlingay VC | 98 | 25 | 71 | 47 | 0 | 0.14 |
| Impington VC | 60 | 15 | 0 | -15 | 15 | 0.09 |

| Infrastructure Capacity | Number of Dwellings | Places Required | Existing Surplus Capacity | Surplus Places After development | Net New Places | Secondary FE |
|---|---|---|---|---|---|---|
| Linton VC | 16 | 4 | 0 | -4 | 4 | 0.02 |
| Melbourn VC | 511 | 128 | 206 | 78 | 0 | 0.73 |
| Sawston VC | 89 | 22 | 0 | -22 | 22 | 0.17 |
| Swavesey VC | 781 | 195 | 0 | -195 | 195 | 1.12 |
| Northstowe | 9,500 | 2,375 | 0 | -2,375 | 2,375 | 16 |
| **South Cambridgeshire** | **13,300** | **3,325** | **492** | **-2,833** | **2,833** | **21.57** |

**5.2.23** Across South Cambridgeshire there is likely to be a need for a limited number of additional secondary school places in response to the planned development included within the Annual Monitoring Report used for this study. It should be highlighted, however, that existing demographic pressures mean that there is a need for a new secondary school to serve the existing population of Cambourne, from September 2013, before the impact of planned development is taken into account.

**5.2.24** The County Council is planning to open a new 5FE (750 place) school in the village, on a site that has potential for future expansion up to 10FE (1,500 places) should further development in the village be brought forward. Whilst this new secondary school will free up some capacity at Comberton Village College, the Comberton Academy Trust have indicated that they would like to reduce their Published Admission Number from 10FE (1,500 places) down to a pre-Cambourne level of 8FE (1,200 places).

**5.2.25** The need for a new school to serve the Northstowe development has also been identified. The size of the proposed new school will be 12 FE (and up to 15 FE).

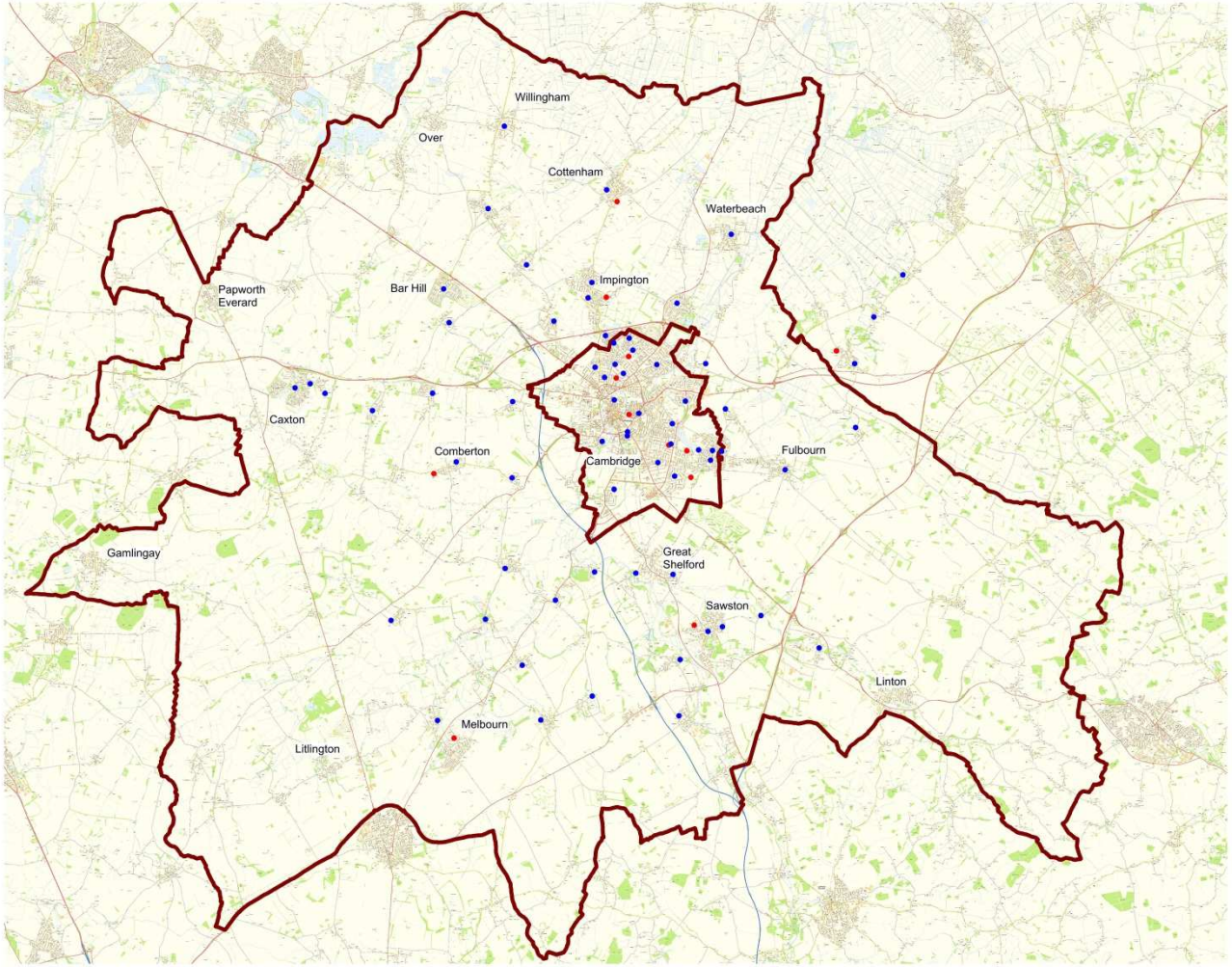
Table 5.6: Secondary Education Capacity – Cross boundary

| Infrastructure Capacity | Number of Dwellings | Places Required | Existing Surplus Capacity | Surplus Places After development | Net New Places | Secondary FE |
|---|---|---|---|---|---|---|
| Southern Fringe | 3,696 | 924 | 0 | -924 | 924 | 6.16 |
| North West | 5,880 | 1,470 | 0 | -1,470 | 1,470 | 9.80 |
| Cambridge East | 2,641 | 660 | 0 | -660 | 660 | 4.40 |
| **Cross Boundary** | **12,217** | **3,054** | **0** | **-3,054** | **3,054** | **20.20** |

**5.2.26** County Council discussions with the developers of Land north of Newmarket road has identified a need for one primary school and additional secondary education provision, as no existing secondary schools are well located to meet the needs of this development. The County Council will need to work closely with the developers and Cambridge City and SCDC planning officers to identify an appropriate means of securing the additional accommodation required from the revised housing perspective.

**5.2.27** **Figure 5.1** overleaf illustrates the location of secondary and primary schools for Cambridge and South Cambridgeshire.

Figure 5.1: Location of  Primary and Secondary Schools




Cambridge and South Cambridgeshire Primary and Secondary Education

Secondary school  Primary school  Local authority boundary



1:160,000 @ A3

**5.2.28** Further education is provided on a partnership area basis and Cambridge and South Cambridgeshire are within the Cambridgeshire Area Partnership (CAP). The post 16 offer is delivered by a range of providers, including:

- Maintained schools and academies (Sixth Form);
- FE colleges;
- Specific vocational skills centres at a number of schools and colleges
- Maintained and private special schools for young people with special educational needs that cannot be met within the range of support or specially resourced provision offered by mainstream providers.
- Independent schools;
- Independent private providers;
- Learner Centres (catering for learners with difficulties and disabilities post 16 from September 2011); and
- Apprenticeship providers.

**5.2.29** For the CAP area the net capacity of school sixth form and FE colleges, for those providers delivering to CAP residents is currently 8,193 learners in 2010/11 rising to 9,146 by 2014/15 now recent infrastructure improvements are in place, specifically:

- Comberton Village College (new Sixth Form) in September 2011;
- Cottenham Village College (new Sixth Form) in September 2011;
- Parkside Federation (new Sixth Form) in September 2011;
- Cambridge Regional College, SMARTLIFE, Low Carbon Centre in October 2011; and
- Cambridge Regional College, Deakin Centre at Addenbrookes in January 2012.

**5.2.30** Independent schools are not included in the capacity figure as the annual independent school survey does not require capacity figures or the home addresses of learners. However, it has been established that independent schools account for around 7% of participation across Cambridgeshire, closer to 10% across Cambridge and South Cambridgeshire.

**5.2.31** The County Council Post 16 Education review conducted demand analysis to 2025 and identify that provision within sixth form colleges for CAP residents is forecast to remain static from 2010/11 over the period of the review. Recent school Sixth Form provision increased available capacity by 634 places (82.7%), from 767 to 1,401 places. Such a significant increase in capacity raises questions regarding potential displacement of learners from other schools and colleges, particularly in the short term, prior to the forecast population increase.

**5.2.32** For general FE colleges there is short term, growth of 216 places to a maximum capacity of 3,661 resulting from new capacity at the College of West Anglia Milton Campus and two capital projects

at Cambridge Regional College detailed above. It is also worth noting that part time capacity at Cambridge Regional College can be flexible to meet need as attendance models range from short and very short courses (often out of term time), day release, evening classes, weekend classes and off site delivery.

**5.2.33** These tend to have a limited impact on the day-time loading on the college campus. Therefore, depending upon demand for individual sector subject areas and delivery models, the college has the potential to significantly increase the part time numbers without necessarily having a significant impact on the physical capacity of the site. In addition, the college is committed to maintaining and even improving and expanding its facilities. Major identified forward needs at present are around Construction and Engineering, which could lead to further projects over the next five years or so.

**5.2.34** Independent Private Providers delivering Foundation Learning account for only 52 places for CAP residents and there are no plans for this to change. This is relatively small provision, and places are generally determined by providers when required.

**5.2.35** In conclusion the capacity within Cambridgeshire for 16-18 year old CAP residents is 8,661 places in 2011/12 and rising to 8,762 in 2012/13. Demand is forecast to remain at that level until 2024/25 and therefore no additional infrastructure requirements have been identified at this time.

**5.2.36** It is considered that special school requirements will be addressed County wide within existing special schools or new facilities, therefore new facilities have not been identified but a financial contribution from new development may still be required.

### Identifying the Cost

**5.2.37** Cost information provided by the County Council has identified cost (as of Q2 2012) per pupil for the construction of accommodation to provide for additional pupil places:

- 420 place Primary School - £7.1m (£16,905 per place);
- 750 place Secondary School - £21.7m (£28,933 per place);
- Early Years 48 place Pre School - £1m (£20,833 per place); and
- Children's Centre - £500,000.

**5.2.38** It is acknowledged that costs will vary dependant on location size and facilities, but our research with other authorities confirmed that these costs are broadly comparable with other examples. **Tables 5.7, 5.8, 5.9** below set out the infrastructure requirements and their associated costs.

**5.2.39** The tables below set out the infrastructure requirements identified from the current housing allocations and provide an indicative cost, based on the cost per place set out in paragraph 5.2.29 above. It is important to highlight that these estimated costs provide only a high level overview of the likely costs of a given scheme, and take no account of any abnormals associated with a project, which may alter significantly the actual project costs. These estimated costs provide an overview only of the accommodation costs and do not take account of the potential cost implications of site acquisition.

Table 5.7: Education Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Estimated Cost |
|---|---|---|
| Cambridge | Expansion of Orchard Park to 210 place primary school, to meet existing demand in North Cambridge and continued development at Orchard Park | £1,775,000 |
| Cambridge | New Secondary School (size currently undecided) | £30,000,000 |
| Cambridge | Up to 11 FE Primary provision (new schools or expansions to be determined) | £39,050,550 |
| **Total Cost** | | **£70,825,550** |

Table 5.8: Education Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Estimated Cost |
|---|---|---|
| South Cambridgeshire | Potential additional primary school provision (4th Cambourne Primary School) to address existing need and demand from future housing development | £7,100,000 |
| South Cambridgeshire | Expansion of accommodation at Hauxton Primary School, to meet demand from new housing development. | £1,775,000 |
| South Cambridgeshire | Up to 2.5 FE Primary provision (new school or expansions to be determined) | £8.875,125 |
| South Cambridgeshire | Up to 6 FE Secondary (new school or expansions to be determined) | £26,039,700 |
| Northstowe | New Secondary School (12 FE up to 15 FE) (with associated sports Hub) | £52,080,000 |
| Northstowe | New 420 place primary school, to serve 1st phase of Northstowe development (potential increase to 630 places). | £7,100,000 |
| Northstowe | Potential New Primary School (2 Form Entry/630 places) at Northstowe including pre-school provision and Children's Centre (community room for 48 place preschool) | £8,100,000 |
| Northstowe | Potential New Primary School (2 Form Entry/420 places) at Northstowe including pre-school provision (community room for 48 place preschool) | £8,100,000 |
| Northstowe | Potential New Primary School (2 Form Entry/420 places) at Northstowe including pre-school provision (community room for 48 place preschool) | £8,100,000 |
| Northstowe | Potential New Primary School (2 Form Entry/420 places) at Northstowe including pre-school provision and Children's Centre (community room for 48 place pre-school) | £8,100,000 |
| Northstowe | Potential New Primary School (2 Form Entry/420 places) at Northstowe including pre-school provision (community room for 48 place pre-school) | £8,100,000 |
| Northstowe | Potential New Primary School (2 Form Entry/420 places) at Northstowe including pre-school provision (community room for 48 place pre-school) | £8,100,000 |
| **Total Cost** | | **£142,694,700** |

Table 5.9: Education Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Estimated Cost |
|---|---|---|
| Southern Fringe | New 750 place (5FE) secondary school at Southern Fringe, to serve the community of the extended Trumpington | £21,700,000 |
| Southern Fringe | New Primary School (2 Form Entry/420 places) at Clay Farm/Glebe Farm | £7,100,000 |
| Southern Fringe | New 420 place primary school at Trumpington Meadows, to serve early phases of Southern Fringe developments | £7,100,000 |
| Southern Fringe | Expansion of Fawcett Primary School to 420 place school and New Children's Centre, to serve Clay Farm development and | £7,600,000 |
| Cambridge East | New Primary School (2 Form Entry/420 places) at Cambridge East, Including 48 place pre-school room | £8,100,000 |
| Cambridge East | Up to 4.4 FE Secondary (new school or expansions to be determined) | £19,095,780 |

| Area/Sub Area | Infrastructure Requirement | Estimated Cost |
|---|---|---|
| NW Cambridge | New 900-1,050 (6-7FE) secondary school at North West Cambridge, to serve the community of the three major development sites | £34,720,000 |
| NW Cambridge | New 420 place primary school at NIAB1, to serve NIAB1 development | £7,100,000 |
| NW Cambridge | New 540 place University Primary School, to serve University development | £9,130,000 |
| NW Cambridge | New 420 place Primary School with pre-school at NIAB2, to serve NIAB1 and NIAB2 development | £7,100,000 |
| NW Cambridge | New Children's Centre at NIAB1 to serve all major north west developments. | £500,000 |
| **Total Cost** | | **£129,245,780** |

**5.2.40** These abnormals may include a range of diverse factors, for example; unforeseen ground conditions; delivery of sustainable urban drainage; constraints arising from the site location in relation to urban/local centres; public art requirements; and/or, the need to remove/replace/re-model existing accommodation.

### Secondary School Review

**5.2.41** In Cambridge City in recent years there has been a significant shift in demographic trends that has led to the County Council securing additional primary school provision. As these pupils age through, the County Council recognises that there is insufficient secondary education provision in Cambridge to meet the anticipated demand. Secondary education needs to be reviewed holistically across the City, to reflect upon both the needs of the existing communities and that arising from planned and prospective future housing development. Whilst this study provides a helpful means of identifying, in very broad terms, the likely impact and demand for places, it does not provide a means for identifying the most appropriate solution to securing the necessary education provision. The scale and location of future provision will be identified as part of a holistic review to be conducted by the County Council. This Infrastructure Study provides only an estimate of the level of capital that may be required to secure the new accommodation required.

### Funding

**5.2.42** A programme of capital works is funded through the County Council Capital Programme 2011-2012 and all monies are allocated to specific projects.

**5.2.43** The Building Schools for the Future (BSF) programme was cancelled in July 2010. The established LEPs will continue to deliver their BSF projects that have been funded, with new and refurbished schools opening well into 2014. In July 2011, the Department for Education launched a new privately financed programme to provide school facilities called the Priority School Building Programme (PSBP). The programme is intended to address those schools in the worst condition. Ministers may also take into account pressing cases of basic need (the requirement for additional school places) and other ministerial priorities. The programme is likely to include a mix of primary schools, secondary schools, special schools, sixth form colleges and alternative provision.

**5.2.44** The reduction in funding from the BSF to PSBP will mean that any BSF aspirations the County Council had will have to be addressed via alternative funding sources. The significant cuts in resources compared to 2008/9 capital allocations will mean that the County Council will be more reliant on alternative sources of funding in the short term.

### New Pupil Places (Basic Need) Funding

**5.2.45** The Department of Education (DfE) allocates funding to support local authorities in their statutory duty to ensure sufficient school places, by ensuring the provision of new school places where they are needed. While allocations are made to local authorities the funds should be used to provide places in any type of school (including all types of maintained schools (including VA), Academies and Free Schools).

**5.2.46** The resources available are allocated to local authority areas on the basis of relative need. For this purpose 'need' is measured in terms of forecast pupil growth for the period (provided by local authorities through the School Capacity returns). Weightings are applied to take account of whether places are in primary or secondary schools, and are also adjusted to reflect the relative costs of building work in different regions across the country.

**5.2.47** Basic Need grants are paid in nine monthly instalments – May 2011 to January 2012. These grants are not ring-fenced. For Cambridgeshire County Council the 2011-2012 allocation was £7,312,599. It is considered that this is the core source of funding for new education infrastructure and based on this year's allocation could represent funding in the region of £146 million over twenty years.

### Devolved Formula Capital (DFC)

**5.2.48** Funding is also allocated by the DfE each year to primary and secondary schools for priority work on building, ICT and other capital needs. For 2011-12 the programme provides £182 million for maintained schools including £36 million for voluntary-aided (VA) schools. Cambridgeshire County Council have been allocated £1,815,762 for local authority schools and £181,338 for VA schools for 2011-2012.

**5.2.49** The grants may be used for improvements to buildings and other facilities, including ICT, or capital repairs/refurbishment in accordance with priorities set by each school and in line with the local asset management plan. VA schools cannot spend the grant on playing fields or buildings on those fields.

**5.2.50** The DfE administer grants via local authorities to Voluntary Controlled, Community and Foundation schools, and directly to VA schools. The capital grants are paid in two instalments in May (40%) and July (60%) (where this is paid through local authorities these should be passed on to the schools accordingly).

**5.2.51** The formula for allocation includes an amount per school plus an amount per pupil, shown in **Table 5.10**. For VA schools, these are adjusted for each Governing Body's contribution and eligibility for VAT.

Table 5.10: DfE Grants Calculation Formula

| | LA School | VA School |
|---|---|---|
| Per School sum | £4,000 | £4,320 |
| Per primary pupil | £11.25 | £12.15 |
| Per secondary pupil | £16.875 | £18.23 |
| Per SEN/Boarding/PRU pupil | £33.75 | £36.45 |

### Local Authority Capital Maintenance and Local Authority Co-ordinated Voluntary Aided Programme (LCVAP)

**5.2.52** The Department of Education allocates funding for local authorities to maintain and improve the

condition of the school and Sure Start estate. Priorities for investment in school buildings and facilities are decided locally, in line with priorities set out in local asset management plans.

**5.2.53** The DfE administer grants to local authorities for Voluntary Controlled, Community and Foundation schools and Sure Start Centres (i.e. for local authority prioritised projects), and directly to VA schools (for projects agreed through the Local Authority Co-ordinated Voluntary-Aided Programme (LCVAP) process).

**5.2.54** The resources available are allocated to local authority areas on the basis of "relative need". For this purpose 'need' is measured in terms of schools and pupils, for those schools which are expected to be maintained by the LA as at 1 April. Weightings are applied to take account of whether or not schools have been modernised.

**5.2.55** Allocations are also adjusted to reflect the relative costs of building work in different regions across the country. Allocations for LA sector and VA schools are calculated separately. For 2011-2012, Cambridgeshire County Council have been allocated £10,377,264 for LA schools and £976,010 for VA Schools.

**5.2.56** LA capital maintenance grants are paid in nine monthly instalments – May 2011 to January 2012. Grants to local authorities are un-ring fenced. VA capital payments are paid on receipt of claims and invoices for work carried out.

### Delivery

**5.2.57** Cambridgeshire County Council Members have endorsed the following identified principles, to inform the production of the new Children and Young People's Services five-year rolling capital programme and subsequent programmes. This will inform delivery in the future.

**5.2.58** Investment, where required on the grounds of health and safety, should be the highest priority, where it avoids the closure of a school or the loss of school capacity in an area where such places are required.

**5.2.59** The statutory duty to provide sufficient school places should come above all other considerations, except for health and safety, as described above.

**5.2.60** In responding to demographic pressures, use to be made of mobile and modular accommodation, in preference to permanent accommodation, where this provides value for money and decreases the lead-in time for the delivery of a project.

**5.2.61** Investment should support reduction in schools' life-cycle maintenance cost. As a result, schools with the highest score in terms of overall condition deficiencies (where 1 is best and 10 is worst) should be prioritised for funding above those with the highest score in terms of overall suitability4 deficiencies (where 1 is best and 10 is worst). This will include secondary schools which are not part of the Wave 2 BSF Programme.

**5.2.62** Investment should support reduction in schools' carbon emissions, energy and water usage by tackling the most inefficient first using available consumption data.

[4] The term condition focuses on the physical state of the premises to ensure safe and continuous operation, and suitability focuses on the quality of premises to meet curriculum, management and other issues which may impact on the role of the school and the Authority in raising educational standards.

**5.2.63** The Capital Programme should provide sufficient flexibility to enable the County Council to respond to new statutory duties and education policy changes, where these are not subject to specific DCSF grant funding.

**5.2.64** The County Council sets out that reviews of educational provision should:

- Result in a reduction in the number of establishments which it has to maintain;
- Provide a capital receipt; and
- Implement its policy preferences.

**5.2.65** For example, an educational review which resulted in the establishment of an all-through primary school on one site, rather than maintain separate Infant and Junior schools operating from separate sites, would meet these three sub-principles.

**5.2.66** Available funding sources should be combined, where possible, to ensure maximum benefit is achieved.

**5.2.67** Currently there is a statutory process for establishing a new school. Current legislation requires the County Council to run a competition for providers to bid to run the school, including bodies such as church trusts, foundations or parent groups. The local authority may also bid in if it wishes. The process also requires local consultation and can take up to eighteen months to complete. After this, the design and build of the new school can take place. The local authority is responsible for the statutory process and subsequent delivery.

**5.2.68** The County Council has a legal duty to educate all pupils living in the County. In real terms, this means that as soon as the first child moves into a house on a development the local authority must have a school place available. It would, however, not be economically viable to have a new school built and staffed before any children had moved onto the new development. To be economically viable, the school needs to be near its capacity. The critical phasing point would come at the point where approximately half of the houses were occupied with the new school opening, preferably, at the start of an academic year, i.e. September. The local authority would have to put interim arrangements in place for the children to attend other schools until the new school had opened and then it would be parental choice as to whether or not the children moved to the new school.

**5.2.69** Overall, the County Council considers the lead-in time to establish, design and build a new Primary School is 1 year to design and 1 year to build. For a secondary school, the process involves 2 years to design and 2 years to build (depending on the size).

## 5.3 Health

**5.3.1** Health infrastructure includes a variety of primary and secondary care facilities, ranging from general and community hospitals to health centres with general practitioners and ambulance services provided by the East of England Ambulance Trust.

### Context

**5.3.2** NHS Cambridgeshire is the leader of the local NHS and commissions (or buys) care from a range of healthcare providers including the East of England Ambulance Trust and Cambridge University Hospitals NHS Foundation Trust (Addenbrooke's). They have been the primary stakeholder for health because they work in partnership with other organisations, such as local councils and the

voluntary sector, to improve the health and wellbeing of the residents of Cambridgeshire.

**5.3.3** The majority of the providers of NHS care are those that would be recognised as traditional NHS providers, such as GP surgeries. However, the world is changing and, increasingly the third sector (voluntary, charity and not-for-profit organisations) as well as using the private sector is involved with delivering care for the NHS.

**5.3.4** Each year NHS Cambridgeshire spends about £800 million of public money with the majority of their budget going towards hospital care, family doctor services and prescribed medicines. The main provider of hospital care for Cambridge and South Cambridgeshire is the Cambridge University Hospitals NHS Foundation Trust (Addenbrooke's). The provider of Ambulance services is the East of England Ambulance Trust.

### Calculating Infrastructure Requirements

**5.3.5** NHS Cambridgeshire and hospital trusts are modernising service provision away from traditional forms of 'capacity' planning towards increased primary care and more efficient ways of working. The increased population, specifically the increase in the elderly population by 2031, will have an impact on the demand for secondary care services but NHS Cambridgeshire will ensure that supply is kept up with demand for secondary care.

**5.3.6** NHS Cambridgeshire have identified that additional hospital capacity will be required but requirements will emerge following a review of acute hospital services. Health infrastructure therefore focuses on general practitioner requirements.

Table 5.11: Cambridge Health Centre Capacity

| **Cambridge (North Locality)** | **Capacity** |
|---|---|
| Chesterton Medical Centre, Union Lane, Chesterton | Limited, Some scope for non-GP services |
| Arbury Road Surgery, 114 Arbury Road | None |
| The Red House Surgery, 96 Chesterton Road | None |
| The Medical Centre, APU, East Road | None |
| East Barnwell Health Centre, Ditton Lane | Some, Extension being built. More will be needed |
| Nuffield Road Medical Centre, Nuffield Road | Limited capacity, Already extended twice |
| 2 All Saints Passage | Some, None known |
| The Surgery, 1 Huntingdon Road | Limited, Extension proposed for early NIAB growth |
| The Surgery, Pepys Way, Girton | None |
| **Cambridge (South Locality)** | **Capacity** |
| Newnham Walk Surgery, Wordsworth Grove | Limited |
| The Surgery, 3 Trinity Street | No capacity |
| Trumpington Street Medical Practice, 56 Trumpington Street | Limited capacity & unsuitable to extend |
| The Surgery, 17 Beverly Way, Trumpington | Limited for early Southern Fringe growth, Will move to new facility on Clay farm |
| Petersfield Medical Practice, 25 Mill Road | No capacity |
| Staff Health Clinic, Addenbrooke's Hospital | No capacity, serves staff only |
| Cornford House Surgery, 364 Cherry Hinton Road | Limited capacity, extension to be funded by Bell School S106 |
| Fulbourn Health Centre, Haggis Gap, Fulbourn | Limited capacity |
| Cherry Hinton Medical Centre, 34 Fishers Lane, Cherry Hinton | Limited capacity, would need extending or replacing to support large growth |
| Brookfields Health Centre, Seymour Street | Limited capacity |

| | |
|---|---|
| Cambridge Access Surgery, 125 Newmarket Road | Serves homeless community |
| Queen Edith Medical Practice, 59 Queen Ediths Way | No capacity, extension to be funded form bell School S106 |
| York Street Medical Practice, 146 – 148 York Street | Some capacity |
| The Woodlands Surgery, 32 - 34 Station Road | No capacity. To be relocated with capacity for extra 4,000 patients |
| The Surgery, 279/281 Mill Road | No capacity |
| The Surgery, 204 High Street, Cherry Hinton | Limited capacity |
| Lensfield Medical Practice, 48 Lensfield Road | No capacity |

Table 5.12: South Cambridgeshire Health Centre Capacity

| **South Cambridgeshire (Northern Locality)** | **Capacity** |
|---|---|
| Cottenham Surgery, 188 High Street, Cottenham | No capacity |
| Firs House Surgery, Station Road, Histon | Limited capacity |
| The Surgery, 42 Telegraph Street, Cottenham | No capacity, GPs own adjacent property |
| The Health Centre, Hanover Close, Bar Hill | No capacity, Need replacing |
| The Surgery, 52 Long Lane, Willingham | No capacity, potential to be extended, |
| The Surgery, Magadalene Close, Longstanton | Planned to serve first 1,500 homes in Northstowe |
| Rosalind Franklin House, Bannold Road, Waterbeach | Capacity to serve early Waterbeach development, could be extended further |
| The Milton Surgery, Coles Road, Milton | No capacity, could be extended |
| The Surgery, 58 Boxworth End, Swavesey | No capacity, not sustainable for expansion |
| Bottisham Surgery, Tunbridge Lane, Bottisham | Some capacity |
| Over Surgery, 1 Drings Close, Over, Cambs. | Limited capacity |
| **South Cambridgeshire (Western Locality)** | **Capacity** |
| Comberton Surgery, 58 Green End, Comberton | No capacity, |
| The Surgery, Harlton Road, Little Eversden | Limited capacity |
| The Surgery, 11 Church Street, Harston | No capacity, |
| Monkfield Medical Practice,Sackville Way, Great Cambourne | Extension planned for extra 950 homes. Would need new facility to meet further growth |
| Orchard Surgery, New Road, Melbourn, Royston | Limited capacity |
| The Surgery, 25 Alms Hill, Bourn | No capacity |
| The Reading Rooms, Fox Street, Gt. Gransden | No capacity |
| Home Meadow, Toft, Cambridge | No capacity. May be relocated to Sackville House, Cambourne |
| 58 Stocks Lane, Gamlingay | No capacity |
| 35, Orchard Road, Melbourn | No capacity |
| **South Cambridgeshire (Eastern Locality)** | **Capacity** |
| The Health Centre, Coles Lane, Linton, Cambs. | Some capacity due to extension 3 years ago |
| The Surgery, Radwinter Road, Ashdon ( Baptist Chapel) | No capacity |
| The Surgery, Haverhill Road, Castle Camps (Village Hall) | No capacity |
| 14 London Road, Sawston | Sufficient capacity, new premises in 2006 |
| The Health Centre, Ashen Green, Gt. Shelford | Limited capacity, extra space to be funded by Hauxton S106 |

**5.3.7** Following discussions with NHS Cambridgeshire, it has been identified that there is limited capacity within existing facilities for additional patients, as highlighted by the current planned projects to meet demand in the area set out below. Current planned projects in Cambridge and South

Cambridgeshire include:

- Extension to Community Dental Service at Brookfields Health Centre, Cambridge (£450K) – the service is for any Cambridgeshire resident and is part of the shift of service from Acute Hospital settings.
- Extension to East Barnwell Health centre, Cambridge (£350k) – To provide further capacity for GP and community based services.
- The PCT have also agreed in principle an additional £350k revenue commitment to provide a larger, replacement GP premises in the CB1 area of Cambridge, required in part to meet expansion in population.
- As part of planning and S106 discussions, new facilities are also planned for Clay Farm, Trumpington, and North West Cambridge. Expansion to the Joint facility at Cambourne has also been agreed, to be funded by S106 contribution.

**5.3.8** A secondary issue is the poor quality of some existing facilities and therefore the lack of scope for expansion. Patient capacity and premise issues have been factored into the infrastructure requirements identified by NHS Cambridgeshire.

**5.3.9** Primary care comprises the provision of community hospitals and GPs, services. Dentistry and optician services are provided via the private sector to meet demand based on commercial viability. A standard ratio of GP per patients can be used to indicate the number of GPs that future development is likely to require:

- 1,800 people per GP (Department of Health standard).

**5.3.10** Based on planned provision in section 4 and assumptions on average household size from the 2001 census an indicative no of GP's can be identified. **Table 5.13** overleaf sets out an indicative quantum of provision:

Table 5.13: Health Provision:

| Location | GP Provision |
|---|---|
| Cambridge | 9.16 GP's |
| South Cambridgeshire and Northstowe | 17.31 GP's |
| Urban Extensions | 14.71 GP's |
| **Total Requirements** | **41.17 GP's** |

**5.3.11** The figures in **Table 5.13** identify a standardised requirement for GPs. The complex issue with the identification of health facilities is the variety of health services provided by NHS Cambridgeshire and the range of premises required to deliver them. For example in addition to generic consulting and treatment rooms, new health facilities 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; and
- Staff spaces, e.g. staff room, changing facilities and training room.

**5.3.12** The size of facility is dependent on the specific preferences of NHS Cambridgeshire and their requirements to provide particular services within a facility.

**5.3.13** NHS Cambridgeshire have not identified any infrastructure requirements for secondary care, such as improvements at Addenbrooke's Hospital. Due to the increased focus on primary care services, NHS Cambridgeshire consider that the infrastructure requirements will generally relate to primary care facilities, but intend to review the acute hospital service and identify the additional capacity required. Therefore Secondary Care Infrastructure has not been identified in the IDS.

### Identifying the Cost

**5.3.14** The cost of health facilities to meet future needs is dependent on the size of facility and contents. The Department of Health Healthcare Premises Cost Guides (2010) can be used to carry out cost estimates of healthcare buildings.

**5.3.15** Health centres and clinics can vary in size from 600 sqm to 6,000 sqm and some individual GP practices are as small as 95 sqm. It should be noted that costs are initial estimates and are likely to vary, based on the specific facility and its location.

**5.3.16** The Department of Health Healthcare Premises Cost Guides (2010) identified a cost of £2,100 per sqm. Baker Associates have benchmarked this figure with cost work undertaken by the Kier Group who have worked as cost advisors to PCTs. This work benchmarked the construction costs for recent health centres and concluded that typical healthcare buildings are in the order of £2,105 per sqm to £2,359 per sqm.

**5.3.17** The second source for benchmarking has been to identify the cost of real facilities as set out in the NHS Primary and Social Care Premises Planning Design Guidance. **Table 5.14** overleaf sets out the benchmarked costs of several facilities identified by the NHS nationally:

Table 5.14: 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 | £1,575.34 |
| 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 | £1,818.18 |
| Manor Park, London | 14,000 | 2,500 sq m | £5,000,000 | £2,000.00 |

**5.3.18** **Table 6.14** highlights that the cost of these specific health centres varies significantly depending on the composition of facilities and the size of facility does not directly correlate with the level of patients that can be serviced. The average cost per sqm for the three real examples that support

between 13,500 and 14,000 patients is £1,797.84.

**5.3.19** For Cambridgeshire, it is considered that the Department of Health Healthcare Premises Cost Guides (2010) cost of £2,100 per sqm represents a sensible average cost to allow initial cost estimates to be included in the infrastructure schedule. It should be note that actual costs are likely to vary. **Table 5.15, 5.16** and **5.17** identify the infrastructure requirements and their associated costs were known.

Table 5.15: Health Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Station Area | Replacement of temporary facility with permanent facility to support station area. (Increase floor area from 383m2 to 860m2). | Unknown |
| Area South | Extend/improvement existing facilities in Cherry Hinton or re-provide facility | Unknown |
| Area East | Redevelopment of Brookfields Community Hospital. | Unknown |
| **Total Cost** | | **Unknown** |

Table 5.16: Health Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Northstowe | New GP facility or expansion of Longstanton surgery | £1,200,000 |
| Northstowe | New Primary Care Centre (wide range of services) | £10,000,000 |
| Comberton | Extension to Sackville House to support development at Cambourne | £805,000 |
| **Total Cost** | | **£12,005,000** |

Table 5.17: Health Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| NW Cambridge | Expansion of Huntingdon Road Surgery (to support first 2500 dwellings). | £350,000 |
| NW Cambridge | Joint health facility to support NIAB alongside key library (record 207) | £1,200,000 |
| East of Cambridge | Extend or improve to East Barnwell Health Centre or re-provide new facility (Newmarket Road) | £2,200,000 |
| NW Cambridge | New Health facility at Cambridge University site (700 sqm) | £1,540,000 |
| **Total Cost** | | **£5,290,000** |

### Funding and Delivery

**5.3.20** The cost of health facilities is further complicated by the funding mechanisms for delivery. Costs above relate to the physical cost of construction. There are different approaches to funding and

these have an impact on overall facility cost. The main sources of funding for new and expanded health facilities are:

- Private finance initiative for major projects;
- Trusts/PCTs' borrowing facilities; and
- Third party development (rental reimbursement).

**5.3.21** Most GP premises are either owned by GPs or leased back from Developers. The NHS pays a notional rent to GP owners or reimburses the actual rent on leased premises. These costs come from the local NHS budget. Due to the current changes in the NHS, PCTs have a zero delegated capital spend limit and only have capital allocated to projects on a 12 month basis only.

**5.3.22** Funding new GP premises developments can be undertaken through rental reimbursement. A third party developer such a Haven Health or Matrix constructs and maintains the facility in return for a rental reimbursement for a typical period of 25 years. The capital cost is borne by the developer.

**5.3.23** Typically, a new GP premises development costs between £32 and £42 per patient per annum (based on actual/predicted list size). In terms of rent and rates reimbursement, this could result in an overall cost of between £8 to £10 million for a 10,000 patient health centre and £12 to £15 m for a 15,000 patient health centre.

**5.3.24** NHS Cambridgeshire scrutinises proposals from third party developers to construct health centres and seeks advice from the County Valuer before proceeding with any scheme. Ultimately the PCT must consider that any rental reimbursement is good value for the use of public money. This presents a problem for funding in the sense that meeting the infrastructure requirements for health needs cannot always be met through rental reimbursement. If a scheme is not considered good value for money then it will not be provided, and if it is taken forward it represents a significant increase in the cost of provision.

**5.3.25** Given the variation in cost for new health provision, it appears prudent to identify an indicative infrastructure cost of £2.5 million for capital costs or £13 m for rental reimbursement to support a 15,000 patient health centre. It is considered that facilities need to be front-loaded in the phasing process to ensure that they are available when the new resident population needs them. In reality, new facilities need a critical mass of people to support them and hence be economical. Given the lead time of 2 years to design and build a community facility, they could be provided midway through the delivery of future developments.

## 5.4 Recreation and Leisure

**5.4.1** The consideration of recreation and leisure infrastructure includes playing pitches and built leisure facilities such as swimming pools and sports halls. Both Councils are committed to providing a high quality environment for residents and visitors alike and any new development will be required to contribute to the existing levels of formal recreation and leisure provision in Cambridge and across South Cambridgeshire.

### Context

**5.4.2** There has been national recognition of the importance of parks and green spaces. The NPPF

states that "access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and well-being of communities". The NPPF seeks to ensure that existing open space, sports and recreational buildings and land, including playing fields should not be built on.

**5.4.3** The role that green spaces can have in meeting policy objectives linked to other agendas, such as education, diversity, health, safety, environment and regeneration is also recognised. The Green Spaces, Better Places Report (DTLR Task Force May 2002)[5] highlighted that parks and open spaces:

- Contribute significantly to social inclusion because they are free and accessible to all;
- Can become a centre of community spirit;
- Contribute to child development through scope for outdoor, energetic and imaginative play;
- Offer numerous educational opportunities; and
- Provide a range of health, environmental and economic benefits.

**5.4.4** Over the last three years, major investment in the city's leisure facilities has taken place and this has been paid for with a mixture of Council funds, section 106 and lottery awards. This has included:

- Refurbishment of Kings Hedges Learner Pool;
- Reconstruction and refurbishments to Abbey leisure complex dry side changing, including installation of new exercise and fitness room;
- Construction of a new informal recreation floodlit all-weather pitch at Abbey leisure complex;
- Refurbishment of Abbey leisure complex wet side changing; and
- Refurbishment of full-size floodlit all-weather pitch at Abbey leisure complex.

**5.4.5** In addition made to capital contributions have been awarded to projects at the following school sites:

- Netherhall School (floodlit all weather pitch and ancillary facilities);
- Manor Community College (sports hall and floodlit all weather pitch);
- St Bede's School (sports hall); and
- Chesterton community college (sports hall and floodlit all weather pitch).

[5] DTLR, 2002: Green Spaces, Better Places (Urban Green Spaces Task Force 2002)

**5.4.6** The following documents form the basis for calculating infrastructure requirements:

- Cambridge City Council Planning Obligations Strategy SPD;
- South Cambridgeshire Open Space in New Developments SPD;
- Cambridge City Council Sports Strategy 2009-2013;
- Cambridge City Council Open Space and Recreation Strategy 2011; and
- Cambridgeshire Horizons Major Sports Facility Strategy.

### Calculating Infrastructure Requirements

**5.4.7** The key source for considering the need for leisure and recreation space in new development is Cambridge City Council's Planning Obligations Strategy SPD and South Cambridgeshire Open Space in New Developments SPD. **Tables 5.18** and **5.19** set out the standards of provision used to identify infrastructure requirements:

Table 5.18: South Cambridgeshire Leisure Standards

| Type of Open Space | Description | Standard |
|---|---|---|
| Outdoor Sports | Facilities such as grass pitches for a range of sports, bowling greens, tennis courts, athletics tracks and multi-use games areas | 1.6 ha per 1,000 people |

Table 5.19: Cambridge City Leisure Standards

| Type of Open Space | Description | Standard |
|---|---|---|
| Outdoor Sports | Playing Pitches, Courts and Greens | 1.2 ha per 1,000 people |
| Indoor Sports | Formal provision such as Sports Halls and Swimming Pools | 1 Sports Hall for 13,000 people<br>1 Swimming Pool for 50,000 people |

**5.4.8** The adopted standards have been used to identify broad infrastructure requirement for leisure and recreation. This has been supplemented by information provided by stakeholders on specific schemes that are being considered.

**5.4.9** The Cambridge City Council Sports Strategy identifies that sports halls are measured in badminton courts, and a standard sized facility has four courts, which is a Sport England standard. The study shows that currently, overall provision in the Cambridge area is almost exactly at the national average in terms of the number of courts per head of population.

**5.4.10** Cambridge has 0.37 courts per 1000 against the national average of 0.29 courts per 1000 population. Despite the good supply there is some unmet demand, mainly from those without access to a car, but also from those who live at the edge of or beyond a reasonable driving distance. Because this unmet demand is spread throughout the area of the study, there is no one location in the area where a new hall could be justified on these grounds alone.

**5.4.11** The Cambridge City Council Sports Strategy identifies that in 2021, only half of future growth can be absorbed by existing sports halls. Existing halls will require investment to retain desirability and contribute to meeting future demand. The strategy sets out a programme of refurbishment and negotiating community use in existing facilities in tandem with potentially co-located new sports hall provision in Cambridge East and the Southern Fringe.

**5.4.12** The Cambridge City Council Sports Strategy highlights that there is currently a good range of swimming pools in the Cambridge area, which includes local authority, commercial and school facilities. Capacity outstrips total current demand, although there is a shortfall of pools in South Cambridgeshire.

**5.4.13** If no further pools are built in the Cambridge area demand isn't likely to outstrip capacity until 2021 However, the increased demand will lead to all pools in the area reaching and exceeding their comfortable capacity, with the result that they will feel crowded to participants. The existing pools will also age significantly and will not necessarily be in a condition to suit the needs of 2021. For these latter reasons, the increased population and demand arising from new growth areas in particular would justify the provision of additional swimming pool water space in appropriate locations, particularly in areas of new housing and in South Cambridgeshire.

**5.4.14** The Cambridge City Council Sports Strategy concludes that Cambridge City Council should pursue a programme of improvements that will maintain and develop capacity of its major indoor pools, in tandem with new pool provision in Cambridge East.

### Identifying the Costs

**5.4.15** Cambridge City Council Planning Obligations Strategy SPD (2010) identifies the costs of off-site open space and recreation provision. The document defines the following costs on a per person basis:

- Outdoor Sports Facilities - £238; and
- Indoor Sports Facilities - £269.

**5.4.16** South Cambridgeshire Open Space in New Development SPD (2009) also sets out the costs of offsite outdoor sport provision on a per person basis:

- Outdoor Sport - £372.06.

**5.4.17** Cost information on refurbishment and improvements to leisure facilities provided by stakeholders has been supplemented by the Sport England Facility calculator. This provides an indication of built leisure facility costs, including swimming pool, sports halls, indoor bowls and artificial pitches.

Table 5.20: Built Leisure Infrastructure Costs

| Facility | Sport England Estimated Costs |
|---|---|
| Swimming Pool | £2,630,000 |
| Sports Halls | £2,790,000 |
| Indoor Bowls | £1,700,000 |
| Artificial Pitch | £800,000 |

**5.4.18** The cost of leisure facilities has also been benchmarked based on examples of recent built and planned leisure facilities locally. This illustrates the wide variation in costs depending on the content and scale of facilities:

- Proposed Ely Leisure Complex is estimated to cost £10-£15 m for a 25m, six-lane swimming pool; a children's leisure water area; a six-court sports hall; and an additional fitness area;
- Camborne Leisure Centre. Cost approximately £3million, facilities include a large sports hall, dance studio, juice bar and large gym;
- Huntingdon Leisure Centre: Redevelopment Cost £2.6m, included a new mezzanine floor housing a fitness suite, a soft play area and an interactive fitness space. The second phase included the introduction of spa facilities at the centre; and
- Newmarket Leisure Centre. Cost £14m for a six lane 25m swimming pool and a smaller 12m x 7m training pool with aqua gym equipment. The revamped also included a fitness studio, four improved squash courts and a new café.

**5.4.19** The indicative cost per sq m and benchmarked costs for built facilities have been used to identify the costs of the requirements for leisure and recreation. Both Councils preferred approach to sports pitch provision is on site provision, but acknowledge the strategic nature of sport pitch use and provision. As set out in the methodology, the IDS assumes that both leisure and recreation provision and green infrastructure provision will be provided on site where appropriate. Infrastructure requirements for Cross Boundary Urban Extensions and Northstowe specifically require on site provision and therefore the requirements in these locations are identified being funded as a development cost.

**5.4.20** The IDS has been unable to determine if on site provision is possible, within individual development sites. The IDS therefore includes both on site land quantum's and the indicative off site cost for identified requirements within Cambridge and South Cambridgeshire.

**5.4.21** **Tables 5.21 to 5.24** set out the identified infrastructure requirement for recreation and leisure. Costs are based on standards and benchmarks set out above, but initial estimates for more detailed schemes have been included where information is available:

Table 5.21: Leisure Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Station Area | Provision of 0.93 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £184,395 |
| Area East | Provision of 7.08 Ha outdoor sports space (Specific schemes include extra tennis court on Coleridge Rec £80,000) | £1,404,202 |
| Area North | Kings Hedges community and sports facility and redevelopment of Nun's Way Pavilion | £750,000 |
| Area North | Provision of 2.99 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £593,163 |
| Area North | Extension to Manor Sports Centre | £350,000 |
| Area South | Refurbishment of Pavilion at Nightingale Avenue | £228,000 |
| Area South | Improvements to changing areas at Cherry Hinton Village Centre | £70,000 |
| Area South | Provision of 2.68 ha of outdoor sports space. Specific schemes include artificial pitch provision at Long Road Sixth Form College | £531,198 |
| Area South | Provision of 3.01 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) 2015-2031 | £351,800 |

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Area South | Artificial cricket pitch and new Tennis Courts at Cherry Hinton | £150,000 |
| Area West/Central | Fitness gym at Parkside Pools or Kelsey Kerridge | £342,000 |
| Area West/Central | Cambridge University, West Cambridge Swimming Provision | £500,000 |
| Area West/Central | Provision of 3.04 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £603,657 |
| Cambridge | Abbey Swimming Pool Environmental Improvements (CHP BM's Boiler) | £400,000 |
| Cambridge | Extension to facilities at Abbey Swimming Pool | £1,000,000 |
| Cambridge | Indoor gymnastics training and competition facility | £70,000 |
| Cambridge | New inclusive IFI fitness gym at Abbey Pools | £75,000 |
| Cambridge | Outdoor Fitness Equipment | £1,200,000 |
| Cambridge | Ice Rink For Cambridge | Unknown |
| Cambridge | Cambridge University, (West Cambridge Sports Centre) community sports provision | £250,000 |
| Cambridge | Jesus Green Outdoor Swimming Pool - Landscaping Improvements | £600,000 |
| Cambridge | Frank Lee Swimming Pool Improvements | Unknown |
| Cambridge | Indoor athletic training facility, Wilberforce Road | £500,000 |
| Cambridge | Indoor street sports and BMX facility | £500,000 |
| Cambridge | Dry Diving Facility | £800,000 |
| Cambridge | 2nd floodlit synthetic turf pitch | £535,000 |
| **Total Cost** | | **£11,988,415** |

Table 5.22: Leisure Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Comberton | Provision of 4.35 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £1,011,961 |
| Fulbourn | Provision of 1.38 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £320,850 |
| Melbourn | Provision of 1.41 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £327,909 |
| Swavesey | Provision of 2.16 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £501,168 |
| South Cambridgeshire | Provision of 1.85 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £429,939 |
| Northstowe | Northstowe Sport Hub (in association with Secondary School) | £29,613,600 |
| Northstowe | Northstowe Sports Hub (No 2) | £10,000,000 |
| Northstowe | Northstowe Sports Hub (No 3) | £10,000,000 |
| Northstowe | Northstowe Sports Hub (No 4) | £10,000,000 |
| **Total Cost** | | **£62,205,427** |

Table 5.23: Leisure Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Southern Fringe | Provision of 11.16 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £2,212,766 |
| NW Cambridge | Indoor sports provision at University site. | Unknown |
| NW Cambridge | Provision of 16.23 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £3,218,171 |
| NW Cambridge | Martial Arts Centre | £200,000 |
| Cambridge East | Provision of 7.29 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £1,445,446 |
| Orchard Park/Arbury | Provision of 3.04 Ha outdoor sports space (including football, rugby, cricket, tennis and hockey) | £603,657 |
| **Total Cost** | | **£7,680,040** |

Table 5.24: Leisure Infrastructure Requirements – Both local Authorities

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Both Local Authorities | Sub-regional stadium | Unknown |

### Funding and Delivery

**5.4.22** Local authority funding is required to provide additional facilities unless contributions to the capital cost of open space provision and its maintenance. Funding for sport and leisure is available through the Sport England Lottery Fund or from the Football Foundation and therefore these could be an available source of funding for recreation infrastructure.

**5.4.23** In Cambridge and South Cambridgeshire, a number of the formal sports facilities are owned not by the Councils but by schools, college's universities and by community trusts. These organisations have access to alternative sources of funding to deliver their goals.

**5.4.24** Grant funding opportunities are available to financially support specific project delivery. Some of the potential funding streams for green infrastructure delivery are highlighted below:

- LIFE + Funding (European Funding): Open to public or private bodies and aims at co-funding actions in the field of nature conservation (LIFE plus Nature and Biodiversity) and co-funding information and communication activities for the environment (LIFE plus Information and Communication).

- INTERREG (European Funding): Projects that promote cooperation across Europe and the exchange of knowledge and best practice. The environment is a priority with sub-themes below this including climate change, biodiversity and preservation of natural heritage and cultural heritage and landscape.

- Heritage Lottery Fund (National): This grant will fund heritage projects of all sizes, with grants from £3000 to over £5 million. The aims of the grant are to conserve the UK's heritage and help more people learn and take an active part in their heritage.

- Higher Level Stewardship (HLS): An agri-environmental grant awarded by Natural England, which aims to deliver significant environmental and public access benefits in priority agricultural areas.

- SITA Enriching Nature Programme (National): This grant currently supports projects with a focus on species or habitat that has been identified as a priority UK Biodiversity Action Plan.

**5.4.25** Sport England's new approach is underpinned by a new National Lottery Funding strategy. From 2009, in addition to the grants awarded directly to national governing bodies and county sports partnerships, four funding streams will be available:

- Regular themed funding rounds that meet specific needs of community sport;
- A programme of sustainable investment in facilities;
- A small grants scheme to replace Awards for All; and
- An innovation fund to identify and pilot best practice in community sport.

**5.4.26** There is a need for Cambridge City Council and South Cambridgeshire District Council to ensure opportunities for external investment into sport are maximised. Cambridge City Council distributes approximately £330,850 in grant aid per annum to the leisure voluntary sector. Current funding priorities are:

- Improving access to arts, sports and cultural opportunities;
- Activities that benefit children and young people;
- Activities that benefit people with disabilities;
- Activities that benefit people whose opportunities are restricted by low income; and
- Activities that benefit people whose opportunities are restricted by discrimination.

## 5.5 Community and Social

**5.5.1** Libraries, community, social 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.

### Context

**5.5.2** New developments impose extra costs on the service providers at a time when resources are stretched. Central Government states in NPPF that Local Authorities planning policies and decisions should:

*"deliver the social, recreational and cultural facilities and services the community needs".*

**5.5.3** The community at large should not suffer as a result of new development proposals and 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.

**5.5.4** The IDS focuses on social infrastructure such as libraries, community centres, places of religious worship, cemetery and crematoria. Key Documents include:

- South Cambridgeshire District Council Community Facilities Audit (2009);

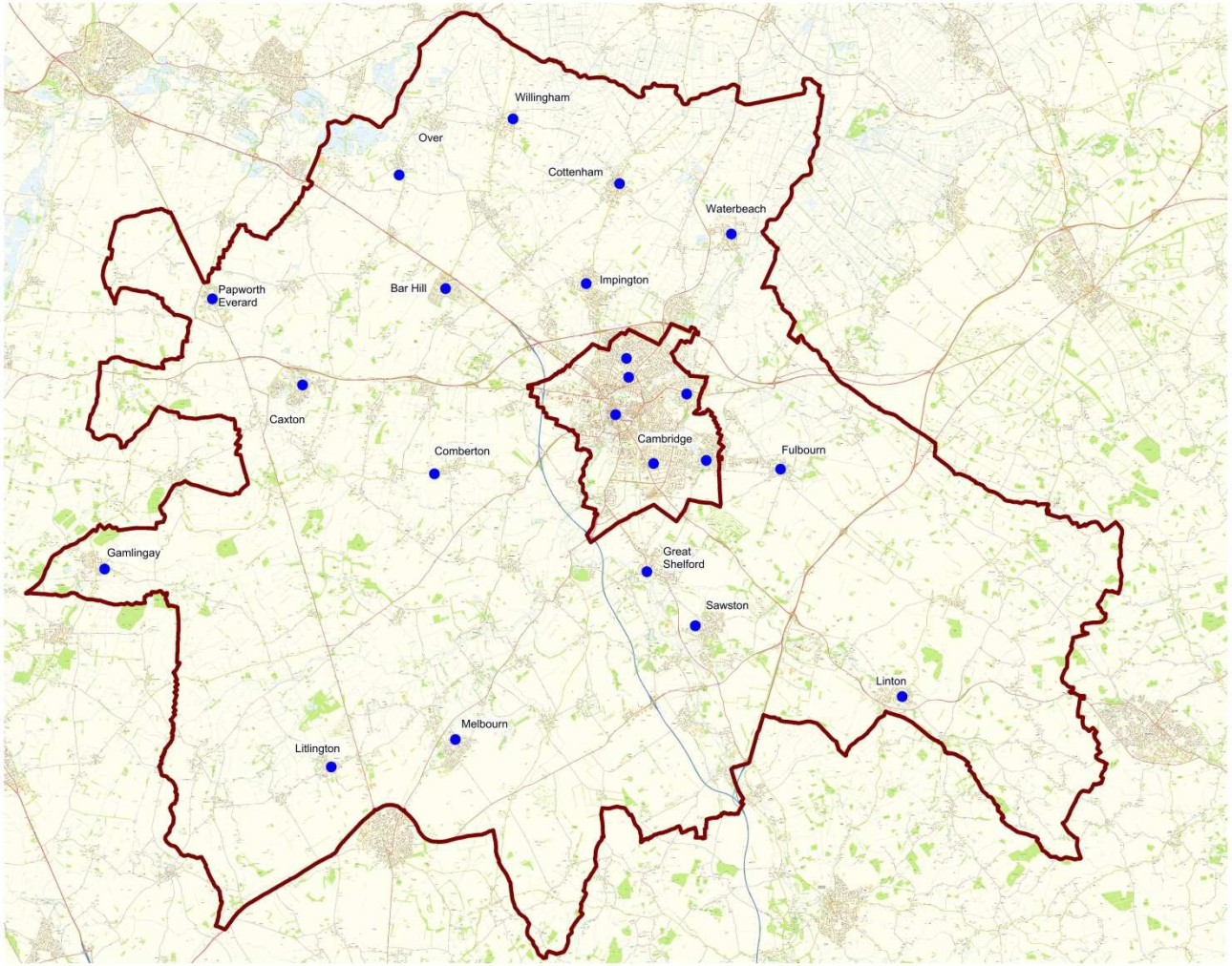
- Cambridge City Council Community Facility Audit (2004);
- Cambridgeshire County Council Library Service Standards;
- Museum and Library Archive Council – Public Libraries, Archives and New Development (2008);
- Cambridgeshire Horizons, Facilities for Faith Communities in New Developments in the Cambridge Sub-Region (Three Dragons 2008); and
- Cambridgeshire Horizons, An Arts and Cultural Strategy.

### Libraries and Archives

**5.5.5** 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, Cambridgeshire County Council Library service has to meet a number of National Library Standards which together constitute a nationally recognised acceptable level of service.

**5.5.6** Across Cambridge and South Cambridgeshire there are 22 libraries. Figure 5.2 overleaf sets out their location:

Figure 5.2: Location of Libraries




Cambridge and South Cambridgeshire Libraries

Library

Local authority boundary



1:160,000 @ A3

### Calculating Infrastructure Requirements

**5.5.7** Cambridgeshire County Council Library Service Standards identified an indicative catchment population for four different sizes of library. These include;

- City Centre library 4,000 sqm for a population greater than 50,000;
- Hub Library – 1,400 sqm for a population greater than 14,000;
- Key library – 350 sqm for a population greater than 7,000; and
- Community Library – 180 sqm for a population greater than 4,000.

**5.5.8** The County Council consider that there is no additional capacity within existing facilities and therefore all new dwellings will have an impact on library services. Cambridgeshire County Council identifies a standard of 30 sqm per 1000 people. This standard is identical to the Museum and Library Archive Council standard containing with the public library, archives and new development guide.

**5.5.9** Infrastructure requirements include new facilities, extensions or alterations and improvements to existing facilities. The requirements are dependent on the specific demand in each sub area and Council preferences for service delivery. The minimum size for a viable standalone community library is approximately 180 sqm, but in general, key and hub libraries consist of between 350 to 1,000 sqm, with central facilities being larger at approximately 4,000 sqm or larger. Requirements below the size of a standalone library will be addressed through extensions to existing facilities, alteration and improvements and potentially relocation through asset co-location. **Tables 5.25, 5.26** and **5.27** below sets out indicative library floorspace requirements:

Table 5.25: Library Floorspace Requirements: Cambridge

| Area/Sub Area | Library Floorspace Requirement |
|---|---|
| Station Area | 22 |
| North | 75 |
| East | 183 |
| South | 111 |
| West/Central | 67 |

Table 5.26: Library Floorspace Requirements: South Cambridgeshire

| Area/Sub Area | Library Floorspace Requirement |
|---|---|
| Bassingbourn | 2 |
| Melbourn VC | 35 |
| Gamlingay VC/St Neot | 7 |
| Sawston | 8 |
| Linton | 1 |
| Comberton | 109 |
| Histon / Impington | 19 |
| Fulbourn | 35 |

| Area/Sub Area | Library Floorspace Requirement |
|---|---|
| Swavesey | 54 |
| Cottenham | 9 |
| Northstowe | 656 |

Table 5.27: Library Floorspace Requirements: Cross Boundary

| Area/Sub Area | Library Floorspace Requirement |
|---|---|
| Southern Fringe | 258 |
| North West | 384 |
| Cambridge East | 59 |
| Orchard Park/Arbury | 49 |

### Identifying the Cost

**5.5.10** 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 public library schemes across England over recent years and are published quarterly.

**5.5.11** Construction and initial fit out cost can vary by site and area. Using the Royal Institution of Chartered Surveyors Building Cost Information Service data, this can be from £3,233 per square metre to £3,929 per square metre. A recommended current benchmark figure for East Anglia is £3,233 per square metre.

**5.5.12** However, where a contribution is required not for a new build facility but to make necessary enhancements and / or expansions to existing provision the cost will be lower. Cambridgeshire County Council have identified that the costs represents 35% of the total construction figure, e.g. £1,135 per sqm. The figure of 35% has been derived from the actual costs of adaptation work carried out in early 2011 at St Neot's Library. **Tables 5.28, 5.29** and **5.30** below set out the identified requirements.

Table 5.28: Library Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Area North | Small Scale alterations of Milton Road library | £44,000 |
| Area North | Small scale alterations of Rock Road library | £44,000 |
| Area South | Extension and/or Improvements to Cherry Hinton library (up to 100 sq m) | £113,500 |
| **Total Cost** | | **£201,500** |

Table 5.29: Library Infrastructure Requirements - South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Bassingbourn | Extension/alteration/relocation to existing library provision | £2,270 |
| Melbourn | Extension/alteration/relocation to existing library provision | £39,725 |
| Gamlingay | Extension/alteration/relocation to existing library provision | £7,945 |
| Sawston | Extension/alteration/relocation to existing library provision | £9,080 |
| Linton | Extension/alteration/relocation to existing library provision | £1,135 |

| | | |
|---|---|---|
| Comberton | Extension/alteration/relocation to existing library provision | £123,715 |
| Histon / Impington | Extension/alteration/relocation to existing library provision | £21,565 |
| Fulbourn | Extension/alteration/relocation to existing library provision | £39,725 |
| Swavesey | Extension/alteration/relocation to existing library provision | £61,290 |
| Cottenham | Extension/alteration/relocation to existing library provision | £10,215 |
| Northstowe | New hub library 1,000sqm | £4,526,200 |
| **Total Cost** | | **£4,842,865** |

Table 5.30: Library Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Orchard Park/Arbury | Extension and /or Improvements to Arbury library (50 sq m) | £55,615 |
| Southern Fringe | New Key library 350 sq m | £1,131,550 |
| East of Cambridge | New Key library 350 sq m | £1,131,550 |
| NW Cambridge | New Key library 350 sq m | £1,131,550 |
| **Total Cost** | | **£3,450,265** |

### Community Spaces

**5.5.13** Community centres, village halls and meeting spaces provide valuable facilities to promote community cohesion. It is important that with significant levels of residential development in the future that community meeting space is provided to address the increased requirements for such facilities.

### Calculating Infrastructure Requirements

**5.5.14** South Cambridgeshire District Council Community Facilities Audit (2009) identifies a standard of 111 square metres of community space per 1,000 people. Cambridge City Council has no defined standards for the provision of community space.

**5.5.15** Roger Tym & Partners in 'The Costs and Funding of Infrastructure in the West of England' increases the standard to one community centre per 1,500 dwellings. Supplementary Planning Guidance for Aldershot Urban Extension produced for Rushmoor Borough Council suggests that one 750 sqm community centre is required per 3,000 dwellings or 7,200 people.

**5.5.16** The benchmarked standards are similar to the level of provision identified in the South Cambridgeshire District Council Community Facilities Audit. We have therefore used the 111 sqm standard to indicate the infrastructure requirements for community facilities.

**5.5.17** Capacity/quality information in the South Cambridgeshire District Council Community Facilities Audit (2009) identifies Parish Council's with no existing community provision, those with an under provision (when compared to the standard) and Parishes with facilities of poor quality in need of improvement (Red and Orange grades defined in Appendix D of the audit). **Table 5.31** highlights capacity/quality issues:

Table 5.31: South Cambridgeshire Community Centre Capacity/Quality

| Area/Sub Area | Parish Council | Capacity/Quality Issue |
|---|---|---|
| Bassingbourn | Bassingbourn Cum Knessworth PC | No Existing Provision |
| Melbourn | Melbourn PC | Under provision |
| Gamlingay | Gamlingay PC | Poor Quality (Red) |
| Sawston | Great Shelford PC | Under Provision |
| Sawston | Stapleford PC | Under Provision |
| Sawston | Duxford PC | No Existing Provision |
| Linton | Hildersham PC | Poor Quality (Orange) |
| Comberton | Hardwick PC | No Existing Provision |
| Comberton | Longstowe PC | Poor Quality (Orange) |
| Comberton | Maddingley PC | Poor Quality (Orange) |
| Histon/Impington | Histon PC | Under Provision and Poor Quality (Orange) |
| Histon/Impington | Impington PC | Under Provision and Poor Quality (Orange) |
| Histon/Impington | Girton PC | Under Provision and Poor Quality (Orange) |
| Fulbourn | Fulbourn PC | Under Provision |
| Fulbourn | Great Wilbraham PC | Poor Quality (Red) |
| Fulbourn | Little Wilbraham PC | Poor Quality (Red) |
| Fulbourn | Teversham PC | No Existing Provision |
| Swaversey | Papworth Everard PC | Poor Quality (Red) |
| Cottenham | Cottenham PC | Under Provision and Poor Quality (Orange) |
| Cottenham | Waterbeach PC | No Existing Provision |

**5.5.18** **Table 5.31** has been used to help inform decisions on specific infrastructure requirements in South Cambridgeshire. The Cambridge City Council Community Facility Audit does not include information on capacity or quality, so we have relied on the qualitative views provided by stakeholders.

### Identifying the Cost

**5.5.19** South Cambridgeshire District Council Community Facilities Audit (2009) identifies a standard cost per sqm of £1,500. The cost of a community centre has also been benchmarked based on costs outlined in the Roger Tym & Partners study, 'Costing the Infrastructure Needs of the South East Counties' and for the 'West of England Infrastructure Study'. Costs have been highlighted as £1,309,500 per community centre or £1,746 per sqm based on the cost of providing new facilities.

**5.5.20** Where actual costs information from Cambridge City Council and South Cambridgeshire is available, this has been used to better reflect the specific cost of the infrastructure requirements. In the absence of detailed cost an average cost of £1,623 has been used. **Table 5.32** identifies the infrastructure requirements:

Table 5.32: Community Centre Infrastructure Requirements - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Station Area | Improve community facilities at The Junction (As part of Station Development) | £42,217 |
| Area East | New community facility at Brunswick site, Newmarket Road | £300,000 |
| Area East | New Youth Bus | £50,000 |
| Area East | New community facility for Abbey Ward | £1,000,000 |
| Area East | Community Facility Improvements at St.Philips Church, Mill Road | £1,800,000 |
| Area East | Community Facility Improvements at Flamsteed Rd Scout Hut | £120,000 |
| Area East | Community Facility at St.Martins Church, Suez Rd | £350,000 |
| Area East | Community Facility at Stanesfield Road Scout Hut | £170,000 |
| Area East | Community Facility at Kings Church, Tenison Rd | £200,000 |
| Area East | Community facility at Sturton St. Church | £100,000 |
| Area North | Refurbishment and improvement of hall at Arbury Community Centre | £70,000 |
| Area South | Community and social - improvements to Trumpington Pavilion | £50,000 |
| Area South | Community minibus for young people | £30,000 |
| Cambridge | City Centre Youth facility | £180,000 |
| **Total Cost** | | **£4,462,217** |

Table 5.33: Community Centre Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Bassingbourn | Improvements to community meeting space | £13,259 |
| Comberton | Improvements to existing community centre provision to address under provision and improve quality in Maddingley, Longstowe and Hardwick | £653,433 |
| Cottenham | Improvements to existing community centre provision to address under provision and improve quality in Cottenham and Willingham. | £56,352 |
| Fulbourn | Improvements to existing community centre provision to address under provision in Fulbourn, Great Wilbraham and Little Wilbraham | £207,176 |
| Gamlingay | Improvements to existing community centre provision to improve quality | £40,606 |
| Histon | Improvements to existing community centre provision to address under provision and improve quality in Histon, Impington and Girton | £113,532 |
| Linton | Improvements to existing community centre provision to improve quality issue in Hildersham | £6,630 |
| Melbourn | Improvements to existing community centre provision to address under provision and improve quality | £211,734 |
| Sawston | Improvements to existing community centre provision to address under provision in Great Shelford and Stapleford | £47,236 |
| Swavesey | Improvements to existing community centre provision to improve quality at Papworth Everard | £323,609 |
| Northstowe | Northstowe Civic Hub | £60,000,000 |
| Northstowe | New Community Centre | £7,300,000 |
| Northstowe | New Community Centre | £7,300,000 |

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Northstowe | New Community Centre | £7,300,000 |
| **Total Cost** | | **£83,573,567** |

Table 5.34: Community Centre Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Cambridge East | New community meeting space | £368,421 |
| NW Cambridge | New Community Hall at university Site (community facility co-located with other uses including faith uses) | Unknown |
| NW Cambridge | New Community Facility at NIAB (Community café with youth facilities) | £420,000 |
| NW Cambridge | Provision of new community centre | £1,307,000 |
| Orchard Park/Arbury | Community meeting space provision | £293,763 |
| Southern Fringe | New Co-located Community (Centre includes community centre, health centre, key library, police and social services touch-down space) | £8,200,000 |
| Southern Fringe | New Co-located Community Facility with Primary School | £2,155,863 |
| **Total Cost** | | **£12,745,047** |

### Faith Facilities

**5.5.21** Faiths provision are not a legal requirement, but are increasingly accepted as an important requirement for providing a full and balanced community. Cambridgeshire Horizons conducted research 'Facilities for Faith Communities in New Developments in the Cambridge Sub-Region' (Three Dragons 2008)[6]. The study identifies that 6% of the population actively participate in religion.

### Calculating Infrastructure Requirements

**5.5.22** Currently there are no major new-build faith facilities in the study area but recent new-build churches have been provided at Cambourne (ecumenical) and underway are at Hampton (CofE). Within Cambridge, there has been a lack of worship space for some minority faiths. Recent improvements, including the new Mill Road mosque, new Jewish synagogue and the Sikh community securing a permanent premise has gone some way to improving capacity.

**5.5.23** The Three Dragons report suggests an indicative standard of 0.5 ha per 3,000 dwellings based on case studies of existing premises to population ratios. This standard is useful for large scale urban extensions and to address the difficulties faith groups have in obtaining land. The report highlights the dual use provided by many community centres and provides Indicative premises sizes for Cambridge:

- 300 sqm will accommodate a small community centre with a hall, office, kitchen and toilets; and
- 3,000 sqm will accommodate a community centre with large and small hall, health centre, cafe, youth facility and library.

[6] Cambridgeshire Horizons
http://www.cambridgeshirehorizons.co.uk/documents/publications/research/faith_facilities_study.pdf

**5.5.24** Provision should ideally be based on an assessment of local religious need. A survey of minority faiths was conducted by Cambridge City Council in 2004, but in the absence of a more up to date information, qualitative responses from faith stakeholders have been used to identify infrastructure requirements. It should be noted that a large proportion of demand for new faith facilities will be met through the use of existing facilities and the use of new community centres identified above.

### Identifying the Cost

**5.5.25** The indicative costs of a new purpose built faith facility based on previous examples have been identified by the Bishop of Huntingdon at £1million to £1.5 million. A specific difficulty with the delivery of faith facilities is obtaining land, which has proven to be a significant hurdle in the past.

Table 5.35: Faith Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Northstowe | Purpose built faith facility (Ecumenical Christian) | £1,250,000 |

Table 5.36: Faith Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| NW Cambridge | New Community Hall at university Site (community facility co-located with other uses including faith uses) | Unknown |

### Funding and Delivery

**5.5.26** Like many other social infrastructure matters such as education and health, funding for community and social facilities comes predominantly from the public or voluntary sector funded through general taxation. The additional capital costs associated with new community and social infrastructure presents an increased funding problem for local authorities. As a consequence, there is an adverse impact on existing facilities which cater for new developments and increased population levels. Funding sources could include:

- Reaching communities programme;
- Big lottery funding; and
- DCSF new youth facilities funding.

**5.5.27** Community facilities are an important aspect of creating sustainable and successful communities. It is considered that facilities need to be front-loaded in the phasing process to ensure that they are available when new resident population needs them. In reality, new facilities need a critical mass of people to support them in order to run in an economical way. Given the lead time of 2-3 years to design and build a community facility, they could be provided midway through the delivery of future developments.

**5.5.28** Funding for faith facilities comes from a variety of sources, to illustrate recent facilities have received grants from sub regional bodies, Regional Churches and other sources. Funding is also available direct from the Church of England and other religious organisations. Specifically:

- East of England Faiths Council (EEFC) has secured its core funding and will continue to act as a broker and capacity-former for all faiths to engage with the development process;

- The Bishop of Huntingdon continues to be available as a first contact on behalf of all faiths;
- Cambridgeshire Ecumenical Council (CEC) provides strong capacity for partnership working for the Christian Churches;
- The new Cambridge Muslim Council aims to provide similar capacity for the Muslim community;
- Local interfaith groups provide support for local consultation; and
- The new Church Building Support officer can support development work on existing premises in smaller schemes.

**5.5.29** As a rule of thumb a single-denomination project using internal funding may have a lead time of 2-3 years depending on its complexity. More complex projects with multiple partners and funding are likely to take longer or be phased e.g. Cambourne Phase 1 (main worship space, foyer and support areas); was completed recently and Phase 2 (smaller chapel) is now being considered.

### Cemetery and Crematorium

**5.5.30** The Local Authorities Cemetery Order 1974 made by the Secretary of State under Section 214 Local Government Act 1972 makes provision for the management regulation and control of burial grounds and cemeteries. The burial authorities responsible for the provision, management, regulation and control of burial grounds and cemeteries include both District Councils and Parish Councils. The provision of cemetery and crematorium is not a statutory function of the Local Authorities, as cemetery and crematorium are also provided by the private sector.

### Calculating Infrastructure Requirements

**5.5.31** In 2010, the age-standardised mortality rates in the UK for males and females were 655 and 467 deaths per 100,000 population respectively, the lowest rates ever recorded. This equates to approximately 1% of the population per year.

**5.5.32** Between 1980 and 2010 age-standardised mortality rates for males and females have declined by 48 per cent and 39 per cent respectively. Male mortality rates have been higher than females throughout the 30 year period, but because rates for males have fallen at a faster rate, the gap between male and female mortality has decreased. It is projected that the mortality rate will increase from 2015 as the UK population gets older.

**5.5.33** The UK is a signatory to the Oslo-Paris Commission (OSPAR) agreement on eliminating mercury emissions from crematoria. By 2012, mercury emissions from crematoria need to be reduced by 50% and by 2020 all crematoria within the UK (roughly 240 facilities) need to have a zero emissions rate. The national cremation rate is 72% annually.

**5.5.34** In 2012 a new crematorium opened on the A14 outside Cambridge containing three mercury free compliant cremators. Stakeholders have confirmed that this is sufficient to meet the infrastructure requirements of proposed development across Cambridge and South Cambridgeshire.

**5.5.35** Currently Cambridge is served by Newmarket Road Cemetery (City Cemetery) whilst cemetery provision across South Cambridgeshire is provided via parish councils within local churchyards. Officers at Cambridge City Council Bereavement Services have identified that current cemetery capacity is sufficient to meet the needs of the existing population, therefore future development will

require new provision. Cemeteries/burial grounds can be categorised in five main types:

- **Churchyards,** (including those used as a place of burial);
- **Municipal, and not operated for profit cemeteries**;
- **Private and originally operated for profit,** Typically these cemeteries were established in the 19th century and share the characteristics of the older municipal examples, but with examples of rather more grandiose memorials and mausoleums;
- **Private charitable cemeteries,** are not operated for profit. They may in some instances be associated with the particular requirements of specific religions; and
- **"Natural" burial sites,** this type of burial has emerged since 1995, largely due to environmental awareness that cremation is no longer considered as the clean, eco-friendly method it once was.

**5.5.36** The Institute of Crematorium and Cemetery Management (ICCM) have confirmed that nationally 28% of people choose to be buried and identified an indicative standard for the size of new cemetery as:

- 1 acre (0.4 ha) provides 700 cemetery plots (with access road, paths and parking).

**5.5.37** Peter Brett Associates has used the phasing of the planned provision to identify the annual population growth facilitated by new development to identify an indicative number of additional deaths per year and therefore additional cemetery plots needed over the period to 2031. Overall the requirement is for approximately 3,100 cemetery plots. This equates to 4.4 acres (1.8 ha) of new cemetery provision.

### Identifying the Cost

**5.5.38** The indicative costs of a new purpose built cemetery or cemetery extension has been provided by the ICCM based on previous examples. The cost reflects approximately 3 times current agricultural land price at £23,000-28,000 per hectare. The cost include land purchase and layout of access/landscaping. The table below sets out the infrastructure requirement:

Table 5.37: Cemetery and Crematorium Requirement – Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Cambridge | New or extended cemetery provision (1.3 ha) | £30,000 |
| Northstowe | New Cemetery (0.5 ha) | £14,000 |
| **Total Cost** | | **£44,000** |

### Funding and Delivery

**5.5.39** Cemeteries are still largely provided by Burial Authorities using the own capital resources, private sectors firms but provide sites but the delivery of the identified requirements for cemetery provision will be coordinated by Cambridge City Council Bereavement Services.

**5.5.40** It terms of siting of new cemeteries, section 9 of the Burial Act 1855 states that no ground which is not already used or appropriated for use as a cemetery may be used for burials within 100 yards of

a dwelling, without the written consent of the owner, lessee and occupier, or within 20 yards of a highway. Although burials may not take place within 100 yards of the external walls of a dwelling, a cemetery may adjoin such dwellings.

## 5.6 Police and Fire Services

**5.6.1** Emergency infrastructure includes the requirements of the Police and Fire Brigade. The requirements of the Ambulance service have been considered separately by Cambridgeshire NHS in their response to Health impacts, (**Section 6.3** above). Increased development levels create new areas that will require emergency service coverage and new people who increase the number of incidents that require an emergency response.

### Context

**5.6.2** **Cambridgeshire Constabulary** has the responsibility for ensuring that an efficient and effective police service is provided to the people of Cambridge and South Cambridgeshire.

**5.6.3** Section 6 of the Police Act 1996 places a duty on a Police Authority to secure the maintenance of an efficient and effective Police Force for its area under the direction and control of its Chief Constable. Section 17 of the Crime and Disorder Act 1998 provides further relevant guidance. This requires local authorities, police authorities and other agencies to consider crime and disorder reductions and community safety in the exercise of all their duties and activities.

**5.6.4** Within Cambridge and South Cambridgeshire there are three police stations, located at Parkside in Cambridge and Sawston and Histon in South Cambridgeshire. Cambridgeshire Constabulary continue to invest in infrastructure and their capital programme for 2011 to 2012 allocates a budget of £2.787,000 for capital works. Current schemes include:

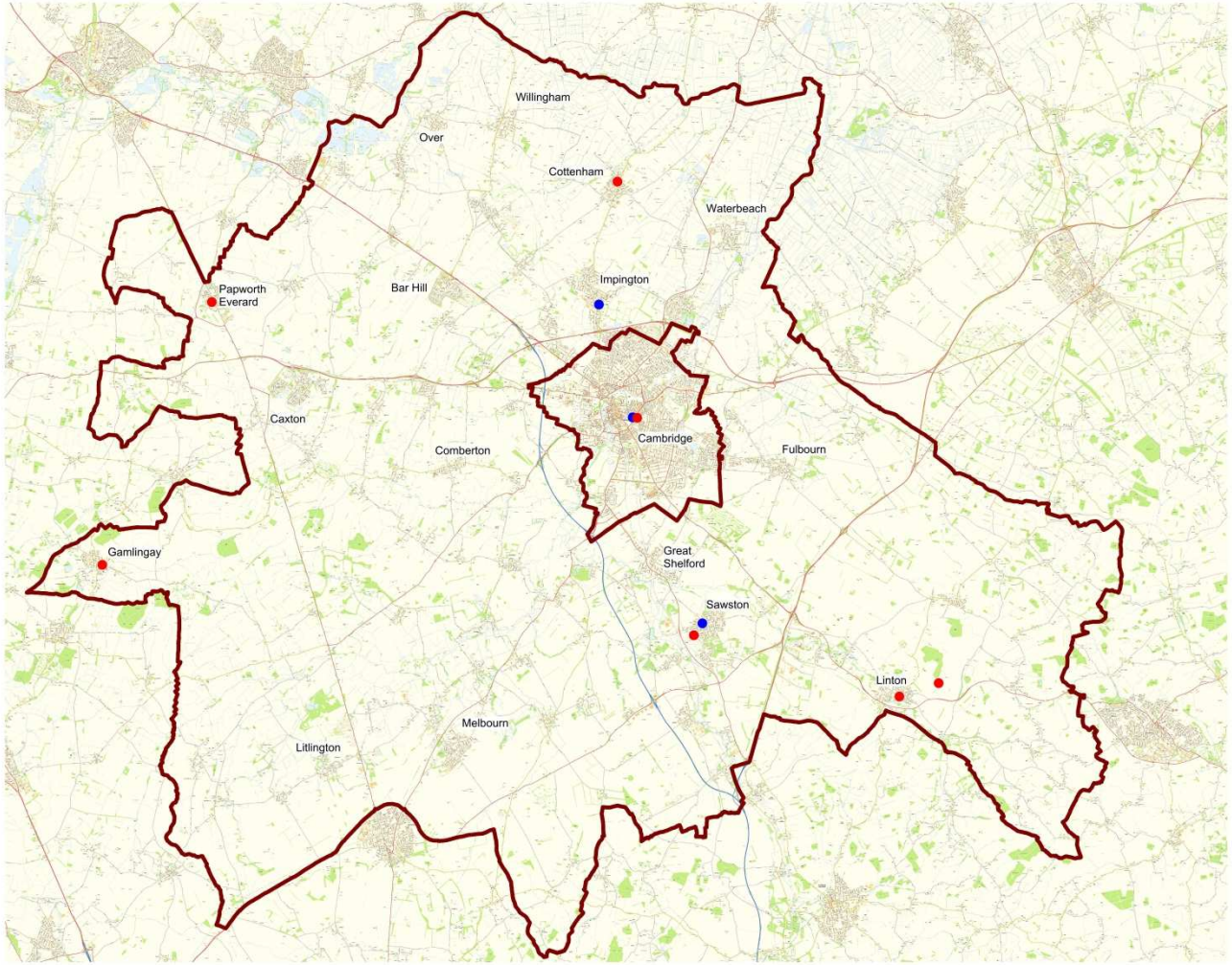
- Major repairs to Parkside Police Station;
- Works at indoor firing range;
- Copse Court, boilers and controls improvements;
- Northern enquiry office improvements and City Centre team setup;
- Estates remodelling;
- Custody suite upgrades; and
- Lift repairs at Thorpe Wood.

**5.6.5** Due to existing budget reductions, Cambridgeshire Constabulary have indicated that there is limited additional capacity at the present time and therefore future development will have an infrastructure impact that potentially cannot be accommodated. Evidence documents include:

- Cambridgeshire Local Policing Plan for 2009– 2012; and
- Association of Chief police officers Development Contributions Toolkit.

**5.6.6** **Figure 5.3** overleaf sets out the location of existing police and fire stations:

Figure 5.3: Location of police and fire stations




Cambridge and South Cambridgeshire Fire and Police

Fire station · Police station · Local authority boundary



1:160,000 @ A3

**5.6.7** **Cambridgeshire and Peterborough Fire Authority** are accountable to the National Fire Authority and their responsibilities as an emergency service are set out in the Fire and Rescue Services Act 2004 and also the Civil Contingencies Act 2004. There are three main strands to their emergency service role:

- Prevention;
- Protection; and
- Response.

**5.6.8** The Cambridgeshire and Peterborough Fire Authority are responsible for delivering a fire and rescue service to the 700,000 people of Cambridgeshire and Peterborough. They operate 28 fire stations including Cambridge (full time), Cottenham, Sawston, Papworth, Gamlingay, Linton (retained) and Camborne (community – non vehicles). The Fire Service Headquarters is based in Huntingdon and houses the senior management team, control room, central operational teams and support staff.

**5.6.9** The Cambridgeshire and Peterborough Fire Authority have indicated that there is some capacity to support future development but a new facility will be required to support development at Northstowe. National targets for service coverage state that fire services should respond to 80% of all threats to life and property within 6 minutes. The scale and location of Northstowe will require additional provision. Evidence documents include:

- Annual Report 2008-09;
- Asset management Plan 2009; and
- Prevention Strategy 2010-2015.

### Calculating Infrastructure Requirements

**5.6.10** The impact of development on police and fire services stems from the increase in population, which results in the greater potential for emergency incidents which require a response. Additionally, response time targets seek to ensure that emergencies are dealt with as quickly as possible.

**5.6.11** Cambridgeshire Police aim to maintain policing services at the current ratio of police per population. Assumptions on the level of police services that should be applied to the growth scenarios are set out in **Table 5.38** below.

Table 5.38: Police Standards

| Infrastructure | Standard |
|---|---|
| Police officers | 1 police officer per 564 households |
| Police Support Staff | 1 Police Support Staff per 757 households |
| Custody Accommodation | 1 sq m per 370 households |

Source: Cambridgeshire Police 2009

**5.6.12** The indicative standards have been used to indicate the level of additional officers required in **Table 5.39** overleaf.

Table 5.39: Police Resource Requirements

| Infrastructure | Indicative Resource Requirements |
|---|---|
| Police officers | 63 police officers |
| Police Support Staff | 46 Police Support Staff |
| Custody Accommodation | 94 sq m of custody provision |

**5.6.13** The standards highlight a requirement for new police officers and support staff. Existing custody facilities are considered sufficient to address growth, but additional facilities will be required to ensure an appropriate base of operations, in terms of staff accommodation and police responsiveness. The police requirements have been informed are based on discussions with Cambridgeshire Police and provide an indication of the likely infrastructure requirements associated with planned growth.

**5.6.14** Cambridgeshire Fire and Rescue Service have also used a modelling and risk assessment toolkit, to identify specific infrastructure requirements.

### Identifying the Cost

**5.6.15** The costs of infrastructure requirements have been identified directly by service providers. Peter Brett Associates has sought to benchmark the costs of emergency facilities to illustrate the costs involved. Due to the increasing trend of emergency facilities co- locating with other community and health facilities identifying specific costs is becoming increasingly complex, Indicative infrastructure costs include:

- New police section station (without custody facilities) - £4 million;
- Neighbourhood policing post – £250,000:
- New fire station - £750,000 excluding land; and
- Pumping appliance (Fire Engine) - £220,000.

**5.6.16** **Table 5.40** and **5.41** identify the requirements for emergency services:

Table 5.40: Emergency Infrastructure Requirements – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Northstowe | Joint emergency service facility (police, fire, ambulance) | £3,000,000 |

Table 5.41: Emergency Infrastructure Requirements – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| NW Cambridge | Police Touchdown Space at University site | Unknown |
| Southern Fringe | New Co-located Community (Centre includes community centre, health centre, key library, police and social services touch-down space)* | £3,970,076 |
| *Identified with other community centres | | |

### Funding and Delivery

**5.6.17** Current funding for policing is provided by the following sources:

- Home Office Grant;
- Revenue Support Grant; and
- Business Rates and Council Tax.

**5.6.18** 20%-30% of revenue funding for police activities is derived from Council taxes, with the balance from Home Office Grants. However, under the current funding regime, revenue funding does not come forward from Central Government until three years after development schemes have been completed leaving a lag period between when infrastructure is required and when funding is available.

**5.6.19** Capital funding has also been secured through the Private Finance Initiative (PFI) or prudential borrowing. Cambridgeshire Constabulary have indicated that changes to the accounting treatment of PFI, makes it increasingly less attractive than the traditional routes of funding capital expenditure.

**5.6.20** Cambridgeshire Constabulary have worked with other East of England police forces to produce a clear approach to secure developer contributions towards:

- Capital expenditure on police facilities, for example new police station, additional cells; and/or
- Revenue expenditure to support additional neighbourhood policing teams (police officers, police community support.

**5.6.21** The Cambridgeshire Police Authority is the lead agency responsible for the delivery of police infrastructure in Cambridge and South Cambridgeshire. Lead times for delivery are dependent upon the type of works required, but general rules of thumb, include:

- 6-12 months for refurbishment; and
- 3-5 years for new build facilities.

**5.6.22** At the present time, the funding formula used by Government only funds revenue costs for emergency services. This means that the emergency service may struggle to find the capital costs to fund infrastructure requirements related to future development. Further liaison is required with the emergency services to confirm infrastructure requirements and costs as development proposals become more certain.

**5.6.23** Cambridgeshire and Peterborough Fire Authority is the lead delivery organisation responsible. Capital funding for fire services comprises an annual capital grant allocation. In 2009/2010 Cambridgeshire and Peterborough Fire Authority received a capital grant allocation of £669,823, for 2010/2011 it was £818,140. It is considered that this available funding will have to be supplemented by other public sources and developer contributions to address identified infrastructure requirements.

# 6 Green Infrastructure

**6.1.1** The consideration of Green Infrastructure has included informal open space, play spaces, natural space, including environmental assets, green corridors and public rights of way.

## 6.2 Informal and formal Green Space, including Children's Play

**6.2.1** Green spaces are important components of sustainable communities, which people want to live in. Cambridge City Council and South Cambridgeshire District Council are committed to improving open space; children's play provision and green infrastructure across the area.

**6.2.2** New residential development will place increased pressure on existing green space provision or have a potential impact on valuable environmental assets and require new or enhanced provision. It is important that future provision of new green infrastructure ensures that provision is located in the right places, in sufficient size and quality, offers opportunities for biodiversity and is well maintained to meet the needs of the community. Key evidence documents include:

- Cambridge City Council Open Space Strategy (2011);
- Recreation Study Audit and Assessment of Need for Outdoor Playspace and Informal Open Space in South Cambridgeshire;
- Cambridge City Council's Planning Obligations Strategy SPD;
- South Cambridgeshire Open Space in New Developments SPD; and
- Cambridge Allotments – A Management Policy.

**6.2.3** The Cambridge City Council Open Space and Recreation Strategy, identifies existing open space capacity across the city. In four instances there is no capacity, as the Council has established existing deficiencies that need to be addressed, based on the standard of 2.5 ha per 1,000 people. These are identified in **Table 6.1** below:

Table 6.1: Existing open space capacity

| Cambridge Wards | Ward Population | Deficiency against 2.5 ha per 1,000 standard | Additional Open Space Required: |
|---|---|---|---|
| Arbury | 9,280 | -1.69 ha per 1,000 | 15.68 ha |
| Petersfield | 7,770 | -0.97 ha per 1,000 | 7.62 ha |
| Romsey | 8,950 | -1.32 ha per 1,000 | 11.81 ha |
| West Chesterton | 8,510 | -1.24 ha per 1,000 | 10.55 ha |

**6.2.4** In all other wards the current level of provision is greater than the standard established in the Open Space and Recreation Strategy. Across the spatial areas (Area North, East, South and West Central) the aggregate level of open space provision is also greater than the 2.5 ha standard. The study has been unable to consider the infrastructure requirements on an individual ward basis.

**6.2.5** Compared to the indicative open space requirements from new development it is not considered that new open space provision will be required, as in no spatial area will existing open space provision fall below the 2.5 ha standard. However it is acknowledged that developments within the four wards with identified deficiencies will still seek on site contributions or off-site improvements

via Cambridge City Council's Planning Obligations Strategy SPD.

**6.2.6** South Cambridgeshire District Council has not undertaken an assessment of existing open space capacity and therefore the availability of existing capacity has not been factored into the identified infrastructure requirements. It is acknowledged that the indicative requirements identified therefore represent a maximum requirement.

### Calculating Infrastructure Requirements

**6.2.7** The South Cambridgeshire Open Space in New Developments SPD (2009) identifies the standards of provision. **Table 6.2** shows the standards used to identify infrastructure requirements across South Cambridgeshire and at Northstowe:

Table 6.2: South Cambridgeshire Open Space Standards

| Type of Open Space | Description | Standard |
|---|---|---|
| Children's Play Space | Formal equipped play areas and provision for teenagers including wheeled sports parks and macadam kick-about areas. Also includes areas for informal play, including grass kick-about areas | 0.8 ha per 1,000 people |
| Informal Open Space | Informal recreation space for walking and relaxing, ranging from formal planted areas and meeting places to wilder, more natural spaces, including green linkages. | 0.4 ha per 1,000 people |

**6.2.8** The Cambridge City Council Open Space Strategy (2011) identifies the standards applicable in the city. **Table 6.3** shows the standards used to identify infrastructure requirements within cross boundary urban extensions of Cambridge:

Table 6.3: Cambridge City Council's Open Space Standards

| Type of Open Space | Description | Standard |
|---|---|---|
| Provision for children and teenagers | Equipped children's play areas and outdoor youth provision | 0.3 ha per 1,000 people |
| Informal Open Space | Recreation Grounds, parks and common land excluding equipped play areas and pitches and nature conservation sites. | 2.2 ha per 1,000 people |
| Allotments | Allotments (urban extensions only) | 0.4 ha per 1,000 people |

**6.2.9** In addition to open space, allotments and children's play space, the infrastructure schedule includes a number of green infrastructure projects which have been identified in the Cambridgeshire Green Infrastructure Strategy and Cambridge City Nature Conservation Strategy.

### Identifying the Cost

**6.2.10** Cambridge City Council Planning Obligations Strategy SPD (2010) identifies the costs of off-site open space provision. The document defines the following costs on a per person basis:

- Provision for Children and Teenagers - £316;
- Informal Open Space - £242; and

- Allotments (Urban Extensions only) - £52.

**6.2.11** South Cambridgeshire Open Space in New Development SPD (2009) also sets out the costs of offsite outdoor sport provision on a per person basis:

- Children's Play space (equipped / formal) - £458.20;
- Children's Play space (unequipped / informal) - £32.31; and
- Informal Open Space - £69.23.

**6.2.12** Cost information has been used to identify the costs of the identified requirements for green infrastructure. Both Councils preferred approach to green space is on site provision. As set out in the methodology, the IDS assumes that both leisure and recreation provision and green infrastructure provision will be provided on site in the first instance. Infrastructure requirements for Cross Boundary Urban Extensions and Northstowe, specifically require on site provision and therefore items are identified as fully funded as a development cost.

**6.2.13** The IDS has been unable to determine if on site provision is possible within all individual development sites. The IDS therefore includes both on site land quanta and the indicative off site costs for other identified requirements within Cambridge and South Cambridgeshire.

**6.2.14** **Table 6.4** below sets out the infrastructure requirements for green infrastructure

Table 6.4: Requirements for Open Space, Children's Play Space and Allotments - Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Area East | Coleridge Recreation Ground: skateboarding and BMX provision for children and young people | £52,000 |
| Area East | Paddling pool improvements at Coleridge Recreation Ground | £145,000 |
| Area East | New Children's water play provision in Abbey Ward | £130,000 |
| Area East | Informal Games Area, Coleridge Recreation ground | £75,000 |
| Area East | Climbing boulders, Coldhams Common | £50,000 |
| Area East | Skate provision, Coldhams Common | £200,000 |
| Area East | BMX improvements, Coldhams Common | £80,000 |
| Area North | New children's Water play at Kings Hedges | £125,000 |
| Area South | Improvements to informal open space and children's water play at Cherry Hinton. | £180,000 |
| Area West/Central | New children's water play at Lammas Land and Sheep's Green | £343,453 |
| **Total Cost** | | **£1,380,453** |

Table 6.5: Requirements for Open Space, Children's Play Space and Allotments - South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Bassingbourn | Provision and improvement of Informal Open Space (0.03 ha) | £5,095 |
| Comberton | Provision and improvement of Informal Open Space (7.98 ha) | £1,381,072 |
| Cottenham | Provision and improvement of Informal Open Space (0.69 ha) | £119,103 |
| Fulbourn | Provision and improvement of Informal Open Space (2.53 ha) | £437,880 |

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Gamlingay | Provision and improvement of Informal Open Space (0.5 ha) | £85,824 |
| Histon / Impington | Provision and improvement of Informal Open Space (1.39 ha) | £239,958 |
| Linton | Provision and improvement of Informal Open Space (0.08 ha) | £14,012 |
| Melbourn | Provision and improvement of Informal Open Space (2.59 ha) | £447,513 |
| Sawston | Provision and improvement of Informal Open Space (0.58 ha) | £99,837 |
| Swavesey | Provision and improvement of Informal Open Space (3.95 ha) | £683,968 |
| Bassingbourn | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.06 ha) | £36,102 |
| Comberton | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (2.90 ha) | £1,779,129 |
| Cottenham | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.25 ha) | £153,432 |
| Fulbourn | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.92 ha) | £564,087 |
| Gamlingay | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.18 ha) | £110,561 |
| Histon / Impington | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.50 ha) | £309,119 |
| Linton | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.03 ha) | £18,051 |
| Melbourn | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.94 ha) | £576,497 |
| Sawston | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.21 ha) | £128,612 |
| Swavesey | Provision and Improvement of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (1.44 ha) | £881,103 |
| Northstowe | On site allotments and community gardens (8.74 ha) | £6,904,600 |
| Northstowe | On site provision of Informal Open Space (8.74 ha) | £1,512,676 |
| Northstowe | On site provision of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (8.74 ha) | £5,358,821 |
| **Total Cost** | | **£21,847,052** |

Table 6.6: Requirements for Open Space, Children's Play Space and Allotments – Cross boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Southern Fringe | On site allotments and community gardens (3.56 ha) | £2,810,694 |
| Southern Fringe | On site provision of Informal Open Space (16.01 ha) | £2152,512 |
| Southern Fringe | On site provision of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (3.56 ha) | £2,810,694 |
| NW Cambridge | On site allotments and community gardens (5.17 ha) | £4,087,776 |
| NW Cambridge | On site provision of Informal Open Space (23.28 ha) | £3,130,512 |
| NW Cambridge | On site provision of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (5.17 ha) | £4,087,776 |
| Cambridge East | On site allotments and community gardens (2.32 ha) | £1,836,023 |
| Cambridge East | On site provision of Informal Open Space (10.46 ha) | £1,406,068 |
| Cambridge East | On site provision of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (2.32 ha) | £1,836,023 |
| Orchard Park/Arbury | On site allotments and community gardens (0.99 ha) | £778,624 |
| Orchard Park/Arbury | On site provision of Informal Open Space (4.44 ha) | £1,512,676 |

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Orchard Park/Arbury | On site provision of Children's Play Space, including wheeled sports parks, kick-about areas and water play. (0.99 ha) | £778,624 |
| **Total Cost** | | **£27,228,002** |

### Funding and Delivery

**6.2.15** Many of the identified requirements and specific projects defined by stakeholders are related to the new development proposals and will be funded by the relevant developers involved via existing mechanisms like S106 and CIL. The delivery of green infrastructure is the responsibility of a wide range of organisations such as parish council's environmental groups, as well as Cambridge City Council and South Cambridgeshire District Council.

**6.2.16** Funding will be reliant largely on private sector contributions from new developments as well as public grant funding and existing capital programmes.

## 6.3 Natural Green Space and Public Rights of Way

**6.3.1** The Cambridgeshire Green Infrastructure Strategy (2011) defines Green Infrastructure as "a strategic, multi – functional network of public green spaces and routes, landscapes, biodiversity and heritage. It includes a wide range of elements such as country parks, wildlife habitats, rights of way, commons and greens, nature reserves, waterways and bodies of water, and historic landscapes and monuments. The network comprises rural and urban Green Infrastructure of different sizes and character, and the connections and links between them. It is part of (and contributes to) the wider environment".

**6.3.2** Key documents include:

- The Cambridgeshire Green Infrastructure Strategy (2011); and
- Cambridge Nature Conservation Strategy (2006).

### Calculating Infrastructure Requirements

**6.3.3** The Cambridge City Nature Conservation Strategy sets out a series of objectives and potential green infrastructure projects and enhancements. The identified infrastructure requirements have been derived from the following objectives:

- Ensure all Sites of Special Scientific Interest (SSSI) & County Wildlife sites (CWS) within Cambridge are maintained or brought into a favourable condition.
- Ensure all City Wildlife Sites owned and managed by Cambridge City Council and Cambridgeshire County Council are maintained or brought into a favourable condition.
- Designate at least 105 ha of new Local Nature Reserves (LNR) by 2016, to provide 1 ha of LNR per 1000 population, in line with recommended Natural England ANGST targets.
- Enhance the ecological status of the River Cam and its tributaries through the city.
- Increase the area of species-rich grassland along the River Cam (from approximately 4.56 ha), through the enhancement of species-poor grassland, and the creation of new meadows,

particularly in the urban extensions.

- Increase the area of species-rich grassland (from approximately 4.89 ha) through the enhancement of species-poor grassland, and the creation of new meadows, particularly in the urban extensions.

- Increase the area of chalk grassland habitats (from approximately 5.88 ha) by creating new grassland to buffer, extend and link Cherry Hinton Pits SSSI, Lime Kiln Close LNR, Lime Kiln Reservoirs, Lime Kiln Hill county wildlife site (CWS) and Wort's Causeway CWS. (These sites can also be linked to the Beechwoods LNR, Gog Magogs SSSI, Wandlebury Country Park and Magog Down, within South Cambridgeshire District).

- Increase the area of native woodland and scrub habitats within Cambridge (from approximately 21.97 ha of woodland and 19.66 ha of scrub).

- Increase the length of hedgerow within the city (from approximately 9.28 Km).

- Enhance the biodiversity of minor streams and drainage ditches through the city.

- Increase the abundance and distribution of Water Voles throughout Cambridge.

- Increase the number of ponds within the city.

- Increase the abundance and distribution of Great Crested Newts throughout Cambridge.

- Protect, enhance and create the identified network of Green Corridors, both through the city and between the city and surrounding countryside, as an integral part of the city's ecological network and as sustainable transport routes for people.

**6.3.4** The Green Infrastructure Strategy sets out a series of projects and enhancements which are best understood as comprising three aspects: corridors, sites and areas.

**6.3.5** **Green Corridors** - seeks to provide a network of routes combining both existing corridors that can be enhanced and a series of new green corridors. In the Cambridge Sub-region the main existing corridors are the rivers and watercourses. The Ouse Valley and Ouse Washes are the most prominent features but the other rivers which in turn filter into a network of ditches and drains and streams, are a key part of the existing network. It is proposed to enhance all the major existing corridors.

**6.3.6** **Major Green Infrastructure Sites** – there are over 20 significant sites in Cambridgeshire included in the Strategy. A number of these comprise new facilities while others build on existing sites. Some of the major sites are important Historic Cultural Centres and include Anglesey Abbey, Denny Abbey, Wimpole Hall and Park, and Wandlebury Country Park. Most of the other sites are related to proposed development sites within the sub-region indicating the provision of new facilities in close proximity to urban extensions and settlements and help provide for shortfalls in the existing network of Green Infrastructure.

**6.3.7** **Wider Area Initiatives** - Some initiatives and projects are spread over the wider area. These relate mainly to agricultural landscapes where the mechanisms for delivery will focus on partnership liaison with landowners and tenants. The initiatives are designed to enhance the local landscape character and biodiversity interest. There are six area initiatives proposed across the County.

### Identifying the Costs

**6.3.8** Natural green infrastructure projects and enhancements, like those set out in the Cambridge Natural Conservation Strategy and Cambridgeshire Green Infrastructure Strategy are more difficult to cost. Cost information provided by stakeholders has been included were possible.

**6.3.9** The cost of improvements to natural space and public rights of way remain largely unknown. **Tables 6.7, 6.8, 6.9,** and **6.10** below sets out the infrastructure requirements for natural space and public rights of way:

Table 6.7: Requirements for Natural Space and Public Rights of Way – Cambridge

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Cambridge | Local Nature Reserve projects/Extensions at Stourbridge Common, Coldhams Common, Norman Cement pits/Hystor open Space, Cherry Hinton East pit, Nine Wells LNR Extension, Coe Fen/Sheep's Green and, Byron's Pool LNR extension | Unknown |
| Cambridge | Logan's Meadow LNR Extension | £190,000 |
| Cambridge | Restoration of Marsh at Paradise LNR | £60,000 |
| Cambridge | Acquire land adjacent to Barnwell West LNR to create a "Community Wood". | Unknown |
| Cambridge | Develop the new green access corridors, including:<br>C1 Cambridge Southern Fringe: Enhanced Chalklands Access<br>C2 Northern Cambridge / Cam Corridor<br>C3 Northern Fringe East Enhanced Access<br>C4 NW of Cambridge – Improved Access to Coton<br>C5 Wimpole Way Green Corridor<br>C6 Granchester Link<br>C7 Outer Orbital Recreation Route<br>C8 Cambridge East links<br>C9 Cambridge Southern Fringe: Clay Farm to Nine Wells | Unknown |
| **Total Cost** | | **£250,000** |

Table 6.8: Requirements for Natural Space and Public Rights of Way – South Cambridgeshire

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Fulbourn | Enhancement of Coton Countryside Reserve | Unknown |
| Cottenham | Creation of nature reserves and improved access - walkways/cycleways from Wicken Fen to Cambridge | Unknown |
| Melbourn | Fowlmere Nature Reserve extension including new hides and educational facility | Unknown |
| Sawston | Gog Magog Hills Countryside project enhance biodiversity and access | Unknown |
| South Cambridgeshire | Chalk Rivers restoration project including habitat and access enhancement | £132,000 |
| South Cambridgeshire | Fens Waterway link, opening up 105km of waterway | £63,600,000 |
| South Cambridgeshire | Heritage trail - North Cambridge (circular route) and also the Wicken Fen Heritage Trails | Unknown |
| South Cambridgeshire | New LNR's at Teversham Fen and Bentley Road Paddocks. | Unknown |
| **Total Cost** | | **£63,732,000** |

Table 6.9: Requirements for Natural Space and Public Rights of Way – Cross Boundary

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Southern Fringe | New Country Park to the South of Trumpington Meadows, including new Local Nature Reserve and enhance the recently created floodplain meadows and create new species-rich meadows | Unknown |
| Southern Fringe | Various green fingers, corridors, community parks, cycleways and open space | Unknown |
| Southern Fringe | Create an area of wet woodland, as an extension to Byron's Pool LNR | Unknown |
| NW Cambridge | Green corridor, open space and park to improve access and recreational facilities | Unknown |
| Cambridge East | Country park to the east of Airport Way to create a strategic route and include an urban park | Unknown |
| Orchard Park/Arbury | Creation of cycle and pedestrian routes | Unknown |
| **Total Cost** | | **Unknown** |

Table 6.10: Requirements for Natural Space and Public Rights of Way – Both Local Authorities

| Area/Sub Area | Infrastructure Requirement | Total Cost |
|---|---|---|
| Both Local Authorities | Cambridge Sports Lake (Outdoor Sports Facilities) | Unknown |

### Funding and Delivery

**6.3.10** Many of the identified requirements related to the new development proposals and will be funded by the developers via S106 and CIL. The delivery of green infrastructure is the responsibility of a wide range of organisations such as parish council's environmental groups, as well as Cambridge City Council and South Cambridgeshire District Council. Funding is largely sourced from existing capital programmes and private sector contributions.

# 7 Infrastructure Schedules and Sub Areas Summary

## Introduction

**7.1.1** The Infrastructure Schedules in **Appendix 4** provides separate schedules for Cambridge, South Cambridgeshire (including Northstowe), Cross Boundary Development and Both Local Authorities.

**7.1.2** The schedules include all of the identified infrastructure items which are required to:

- Meet current infrastructure deficiencies;
- Support new development;
- Address both deficiencies and support growth; and
- Support aspirations for sustainable development.

**7.1.3** The schedules provide a long list of projects and proposals and are a result of discussions with stakeholders and a review of available documentation. It should be noted that the infrastructure schedule represent a snapshot in time and it is envisaged that it will be monitored annually and evolve over time as new information on infrastructure requirements or specific costs come to light.

**7.1.4** **Section 7** presents the infrastructure schedule in summary by settlement/sub area for Cambridge, South Cambridgeshire, Cross Boundary Urban Extensions and Both Local Authorities. Summaries are presented for the following areas:

- **Cambridge**
  - Station Area;
  - Area North;
  - Area East;
  - Area South; and
  - Area West/Central.
- **South Cambridgeshire rural areas (secondary school catchments) and Northstowe:**
  - Bassingbourn;
  - Comberton;
  - Cottenham;
  - Fulbourn;
  - Gamlingay
  - Histon / Impington;

- Linton;
- Melbourn;
- Sawston;
- Swavesey; and
- Northstowe.

- **Cross boundary urban extensions:**
  - Orchard Park/Arbury;
  - Cambridge East;
  - Southern Fringe; and
  - North West Cambridge.

- **Both Local Authorities**

**7.1.5** The following summary tables provide a commentary on the physical social and green infrastructure requirements for each sub area. It should be noted that not all costs have been identified, therefore schemes where costs are currently unknown have been included in the schedule with a £0 cost figure and are subsequently not reflected in the summary table. It is envisaged that schemes will have costs identified as they become more defined over time with the continual evolution of the IDS.

**7.1.6** In terms of transport, the majority of the costs allocated to the required infrastructure proposals have been based on current data available from Cambridgeshire County Council. There are a number of areas where comprehensive data has not been available; these include proposed schemes, where modelling work has been undertaken, but design or feasibility works have not been carried out and as such generic costs or no costs have been identified. This is also the case for social and green infrastructure, such as improvements to the natural environment identified in the Cambridgeshire Green Infrastructure Strategy.

## 7.2 Cambridge Summaries

**7.2.1** Based on future planned provision, Cambridge will require new infrastructure to support development within the existing urban area, including each committee area (North, East, South and West/Central) and the Station Area.

**7.2.2** The paragraphs below discuss infrastructure requirements and **Tables 7.1, 7.1a, 7.1b, 7.1c, 7.1d** and **7.1e** sets out the infrastructure schedule, costs and funding.

Table 7.1: Cambridge (Strategic) Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £124,974,375 | £32,950,393 | £92,023,982 |
| Social and Community Infrastructure | £59,910,300 | £547,280 | £59,363,020 |
| Green Infrastructure | £250,000 | £0 | £250,000 |
| **Total Infrastructure Requirements** | **£185,134,675** | **£33,497,673** | **£151,637,002** |

**7.2.3** **Table 7.1** identifies the strategic infrastructure schemes across Cambridge needed to support development. Several physical infrastructure requirements have been identified to support development across Cambridge. Specific schemes include flood alleviation works including reduction works for the river Cam and Vicar's Brook. Transport improvements include several public realm improvements including Project Cambridge schemes and Cambridge Station interchange. Waste requirements include four household waste recycling centres and several collection vehicles.

**7.2.4** The study has also identified several community and leisure requirements over the plan period, including a new ice rink, sports pitches, indoor gymnastics centre, swimming pool improvements, primary school FE and a new City Centre youth facility.

Table 7.1a: Station Area Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £27,675 | £27,675 | £0 |
| Social and Community Infrastructure | £226,612 | £42,217 | £184,395 |
| Green Infrastructure | £0 | £0 | £0 |
| **Total Infrastructure Requirements** | **£254,287** | **£69,892** | **£184,395** |

**7.2.5** **Table 7.1a** identifies the specific infrastructure schemes directly related to development in the Station Area. No physical infrastructure schemes have been identified to exclusively support the station area development. Social and green infrastructure requirements include a new community room, improved community facilities at the junction, open space, and leisure provision and the replacement of a temporary health facility with a permanent facility.

Table 7.1b: Committee Area North Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £14,289,025 | £3,089,025 | £11,200,000 |
| Social and Community Infrastructure | £1,807,163 | £147,715 | £1,659,448 |
| Green Infrastructure | £125,000 | £125,000 | £0 |
| **Total Infrastructure Requirements** | **£16,221,188** | **£3,361,740** | **£12,859,448** |

**7.2.6** **Table 7.1b** identifies the specific infrastructure schemes directly related to development in Committee Area North. Physical infrastructure schemes include several surface water management improvements, including Chesterton, North Chesterton and Kings Hedges and a primary substation upgrade at Storeys Way. Social and Community requirements relate to new open space and leisure provision or improvements, extension to Milton Road and Rock Road libraries and the refurbishment of Arbury Community Centre.

Table 7.1c: Committee Area East. Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £2,210,750 | £2,210,750 | £0 |
| Social and Community Infrastructure | £5,661,202 | £2,569,456 | £3,091,746 |
| Green Infrastructure | £682,000 | £682,000 | £0 |
| **Total Infrastructure Requirements** | **£8,553,952** | **£5,462,206** | **£3,091,746** |

**7.2.7** **Table 7.1c** identifies the specific infrastructure schemes directly related to development at Committee Area East. Specific physical infrastructure requirements include surface water management at Coldham's common, primary substation upgrades and local upgrades. Several social and green infrastructure requirements are specifically related to cumulative impacts of development in this location. These include open space, play space, sports pitch provision, new

community facilities and kerbside recycling equipment.

Table 7.1d: Committee Area South. Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £11,532,525 | £2,132,525 | £9,400,000 |
| Social and Community Infrastructure | £1,568,498 | £330,140 | £1,238,358 |
| Green Infrastructure | £180,000 | £180,000 | £0 |
| **Total Infrastructure Requirements** | **£13,281,023** | **£2,642,665** | **£10,638,358** |

**7.2.8** **Table 7.1d** identifies the specific infrastructure schemes directly related to development at Committee Area South. Physical infrastructure requirements identified include surface water management at Cherry Hinton, Vicar's Brook and Cherry Hinton Village. Other physical requirements include a primary substation upgrade and kerbside recycling equipment for new housing. Social and green infrastructure requirements include new play space, sports pitches, community facilities (library and community centre provision) and an extension to existing heath facilities in Cherry Hinton.

Table 7.1e: Committee Area West/Central. Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £9,090,610 | £3,090,610 | £6,000,000 |
| Social and Community Infrastructure | £1,445,657 | £0 | £1,445,657 |
| Green Infrastructure | £343,453 | £343,453 | £0 |
| **Total Infrastructure Requirements** | **£10,879,720** | **£3,434,063** | **£7,445,657** |

**7.2.9** **Table 7.1e** identifies the specific infrastructure schemes directly related to development at Committee Area West/Central. Physical infrastructure requirements include surface water management improvements at Bin Brook and in the City Centre. Other requirements include upgrades to two primary substations and kerbside recycling equipment. Several social and green infrastructure requirements are specifically related to development in this location. These include an extension to an existing primary school, play space, informal open space, sports pitches and improvements to Parkside Swimming Pool including a new fitness gym. Community facilities include extension to existing library provision and new community centre.

## 7.3 South Cambridgeshire Summaries

**7.3.1** Based on future planned provision, South Cambridgeshire will require new infrastructure to support development within existing villages and rural areas within each secondary school catchment area and the new settlement of Northstowe. The paragraphs below discuss infrastructure requirements and **Tables 7.2, 7.2a, 7.2b 7.2c, 7.2d, 7.2e 7.2f, 7.2g, 7.2h, 7.2i, 7.2j, and 7.2k** set out the infrastructure schedule, costs and funding:

Table 7.2: South Cambridgeshire Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £29,020,000 | £28,500,000 | £520,000 |
| Social and Community Infrastructure | £44,219,764 | £1,401,383 | £42,818,381 |
| Green Infrastructure | £63,732,000 | £0 | £63,732,000 |
| **Total Infrastructure Requirements** | **£136,971,764** | **£29,901,383** | **£107,070,381** |

**7.3.2** **Table 7.2** identifies the strategic infrastructure schemes across South Cambridgeshire needed to support development. Specific physical infrastructure requirements include electricity grid improvements at Arbury, Fulbourn and Burwell, refuse and recycling collection vehicles and

improvements to the household waste recycling centres at St Neots.

**7.3.3** In addition a range of social and community infrastructure requirements have been identified including new primary school FE, new sports pitches to serve the needs of the District and green infrastructure improvements including the Chalks Rivers restoration project and Fens Waterway link.

Table 7.2a: Bassingbourn Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £2,400 | £2,400 | £0 |
| Social and Community Infrastructure | £15,529 | £0 | £15,529 |
| Green Infrastructure | £41,197 | £0 | £41,197 |
| **Total Infrastructure Requirements** | **£59,126** | **£2,400** | **£56,726** |

**7.3.4** **Table 7.2a** identifies the specific infrastructure schemes directly related to development in Bassingbourn. No specific physical infrastructure requirements have been identified to support development growth with the exception of kerbside recycling equipment. Social and Green infrastructure requirements include informal space, place space and improvements to community meeting space.

Table 7.2b: Comberton Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £118,275 | £118,275 | £0 |
| Social and Community Infrastructure | £2,594,109 | £89,759 | £2,504,350 |
| Green Infrastructure | £3,160,202 | £33,182 | £3,127,020 |
| **Total Infrastructure Requirements** | **£5,872,586** | **£241,216** | **£5,631,370** |

**7.3.5** **Table 7.2b** identifies the specific infrastructure schemes directly related to development at Comberton. No specific physical infrastructure requirements have been identified except kerbside recycling equipment, but like other rural areas development is closely related to strategic transport requirements. Social and green infrastructure requirements include open space, leisure, health and community. Specific schemes include improvements to existing library and community centre provision, and an extension to Sackville House to support health requirements.

Table 7.2c: Cottenham Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £10,200 | £10,200 | £0 |
| Social and Community Infrastructure | £66,603 | £0 | £66,603 |
| Green Infrastructure | £272,535 | £77,338 | £195,197 |
| **Total Infrastructure Requirements** | **£349,338** | **£87,538** | **£261,800** |

**7.3.6** **Table 7.2c** identifies the specific infrastructure schemes directly related to development at Cottenham. No specific physical infrastructure requirements have been identified except kerbside recycling equipment. Social and green infrastructure requirements include open space, community and creation of nature reserves and improved public rights of way from Wicken Fen to Cambridge.

Table 7.2d: Fulbourn Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £37,500 | £37,500 | £0 |
| Social and Community Infrastructure | £1,767,751 | £92,000 | £1,675,751 |
| Green Infrastructure | £1,001,966 | £75,000 | £926,966 |
| **Total Infrastructure Requirements** | **£2,807,217** | **£204,500** | **£2,602,717** |

**7.3.7** **Table 7.2d** identifies the specific infrastructure schemes directly related to development at Fulbourn. Only kerbside recycling equipment has been identified as a physical infrastructure requirement. Social and green infrastructure requirements include open space, (specifically, new children's play space and informal green space) and leisure requirements such as outdoor sports pitch provision.

Table 7.2e: Gamlingay Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £4,007,350 | £4,000,000 | £7,350 |
| Social and Community Infrastructure | £48,551 | £0 | £48,551 |
| Green Infrastructure | £196,385 | £27,688 | £168,697 |
| **Total Infrastructure Requirements** | **£4,252,286** | **£4,027,688** | **£224,598** |

**7.3.8** **Table 7.2e** identifies the specific infrastructure schemes solely attributable to development for Gamlingay. The main physical infrastructure requirement specific to the area is an electricity primary substation upgrades at Sandy, Croydon and Little Barford. Other social and green infrastructure requirements are limited to open space and improvements to existing community centre provision.

Table 7.2f: Histon/Impington Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £3,020,550 | £28,674 | £2,991,876 |
| Social and Community Infrastructure | £135,097 | £48,451 | £86,646 |
| Green Infrastructure | £549,077 | £245,385 | £303,692 |
| **Total Infrastructure Requirements** | **£3,704,724** | **£322,510** | **£3,382,214** |

**7.3.9** **Table 7.2f** identifies the specific infrastructure schemes directly related to development at Histon/Impington. One physical infrastructure requirement has been identified, (Surface water management features at Milton) but similar to other rural catchments development is closely related to strategic transport requirements. Social and green infrastructure requirements include open space and library and community centre improvements.

Table 7.2g: Linton Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £2,001,200 | £2001,200 | £0 |
| Social and Community Infrastructure | £7,765 | £0 | £7,765 |
| Green Infrastructure | £32,063 | £0 | £32,063 |
| **Total Infrastructure Requirements** | **£2,041,028** | **£2,001,200** | **£39,828** |

**7.3.10** **Table 7.2g** identifies the specific infrastructure schemes directly related to development at Linton. An upgrade to an electricity substation at Linton and kerbside recycling equipment has been identified under the physical infrastructure category. Social and green infrastructure requirements include children's play space and community centre improvements at Hildersham.

Table 7.2h: Melbourn Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £9,538,325 | £9,538,325 | £0 |
| Social and Community Infrastructure | £579,368 | £311,459 | £267,909 |
| Green Infrastructure | £1,025,403 | £101,746 | £923,657 |
| **Total Infrastructure Requirements** | **£11,143,096** | **£9,951,530** | **£1,191,566** |

**7.3.11** **Table 7.2h** identifies the specific infrastructure schemes directly related to development at

Melbourn. Primary Substation upgrades and grid improvements are required at Melbourn. Social and green infrastructure requirements include leisure and open space, specifically including informal open space and children's play space and sports pitch provision. Other requirements include improvements to Fowlmere Nature Reserve.

Table 7.2i: Sawston Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £4,508,550 | £4,500,000 | £8,550 |
| Social and Community Infrastructure | £56,316 | £47,236 | £9,080 |
| Green Infrastructure | £228,449 | £72,137 | £156,132 |
| **Total Infrastructure Requirements** | **£4,793,315** | **£4,619,373** | **£173,762** |

**7.3.12** **Table 7.2i** identifies the specific infrastructure schemes directly related to development at Sawston. Physical infrastructure requirements have been identified, including upgrades to an existing electricity substation at Sawston and kerbside recycling equipment. Social and green infrastructure requirements include improvement to existing library provision, open space, children's play space, improvement to existing community centre provision and the Gog Magog Hills countryside project.

Table 7.2j: Swavesey Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £3,058,575 | £3,058,575 | £0 |
| Social and Community Infrastructure | £886,067 | £0 | £886,067 |
| Green Infrastructure | £1,565,072 | £0 | £1,565,072 |
| **Total Infrastructure Requirements** | **£5,509,714** | **£3,058,575** | **£2,451,139** |

**7.3.13** **Table 7.2j** identifies the specific infrastructure schemes directly related to development at Swavesey. Physical infrastructure requirements have been identified and include primary substation upgrades at Longstanton and St Ives and kerbside recycling equipment. Social and green infrastructure requirements include Leisure, open space and community. Specific schemes include sports pitch provision and improvements to existing library provision at Papworth.

Table 7.2k: Northstowe Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £26,365,875 | £8,291,875 | £18,074,000 |
| Social and Community Infrastructure | £267,083,800 | £1,694,000 | £265,389,800 |
| Green Infrastructure | £13,776,096 | £10,327,033 | £3,449,063 |
| **Total Infrastructure Requirements** | **£307,225,771** | **£20,312,908** | **£286,912,863** |

**7.3.14** **Table 7.2k** identifies the specific infrastructure schemes directly related to development on the Northstowe. A large number of requirements have been identified including physical infrastructure requirements such as the Willingham Bypass, transport connections to the A14, mains water upgrades, a household waste recycling centre, recycling and refuse collection vehicles and a new electricity primary substation. Whilst not only required to support development at Northstowe wider transport improvements such as highway improvements on the A14 are considered crucial.

**7.3.15** Social and green infrastructure also includes education, leisure open space, health community, green infrastructure and emergency provision. Specific schemes include a new secondary school with associates sport hub, seven new primary schools, new children's centre, key library, three community centres, sports pitches, open space, a civic hub and joint emergency facility.

## 7.4 Cross Boundary Urban Extensions Summaries

**7.4.1** Based on future planned provision both Local Authorities will require new infrastructure to support development at the cross boundary urban extensions including Orchard Park/Arbury, Cambridge East, Southern Fringe and North West Cambridge.

**7.4.2** **Tables 7.3a, 7.3b, 7.3c**, and **7.3d** set out the infrastructure schedule, costs and funding.

Table 7.3a: Orchard Park/Arbury Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £83,625 | £83,625 | £0 |
| Social and Community Infrastructure | £962,363 | £612,985 | £349,378 |
| Green Infrastructure | £1,378,647 | £1,378,647 | £0 |
| **Total Infrastructure Requirements** | **£2,424,635** | **£2,075,257** | **£349,378** |

**7.4.3** **Table 7.3a** identifies the specific infrastructure schemes directly related to development in Orchard Park/Arbury. No specific physical infrastructure schemes have been identified for this location but it is development reliant on other strategic requirements. The study has also identified several open space and green infrastructure requirements over the plan period, including sports pitches, children's play space and new allotments. Other requirements include a new primary school improvement to Arbury Court Library and the creation of green cycle and pedestrian routes.

Table 7.3b: Cambridge East Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £2,998,075 | £198,075 | £2,800,000 |
| Social and Community Infrastructure | £32,341,192 | £1,470,241 | £30,870,951 |
| Green Infrastructure | £5,078,124 | £5,078,124 | £0 |
| **Total Infrastructure Requirements** | **£40,417,391** | **£6,746,440** | **£33,670,951** |

**7.4.4** **Table 7.3b** identifies the specific infrastructure schemes directly related to development in Cambridge East. Physical infrastructure requirements include improvements to water mains and connections to waste water treatment works. Social and green infrastructure requirements include a new key library; improvements to East Barnwell health centre, sports pitch provision, informal open space, children's play space, secondary school provision and a new primary school.

Table 7.3c: Southern Fringe Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £6,253,225 | £4,678,875 | £1,574,350 |
| Social and Community Infrastructure | £57,200,129 | £50,173,800 | £7,026,329 |
| Green Infrastructure | £7,773,881 | £7,020,442 | £753,439 |
| **Total Infrastructure Requirements** | **£71,227,235** | **£61,873,117** | **£9,354,118** |

**7.4.5** **Table 7.3c** identifies the specific infrastructure schemes directly related to development on the Southern Fringe. Physical infrastructure requirements included installation of a new water main, upgrades to Radnor and Sawton primary substations and kerbside recycling equipment. The development of the Southern fringe is already served by recently completed physical infrastructure schemes such as the guide bus and Addenbrookes access road.

**7.4.6** Social infrastructure also includes leisure, open space, education, health and community infrastructure. Examples of specific scheme include two new primary schools a new secondary school at Clay Farm, a new co-located community centre with health centre, key library, police and social services. Other requirements include green infrastructure corridors, sports pitches, children's

play space and allotments.

Table 7.3d: North West Cambridge Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £5,361,000 | £3,941,000 | £1,420,000 |
| Social and Community Infrastructure | £67,916,721 | £3,218,171 | £64,698,550 |
| Green Infrastructure | £11,306,064 | £11,292,657 | £13,407 |
| **Total Infrastructure Requirements** | **£84,583,785** | **£18,451,828** | **£66,131,957** |

**7.4.7** **Table 7.3d** identifies the specific infrastructure schemes directly related to development on the North West Cambridge. Physical infrastructure requirements include local sewer improvements and upgrades at Windsor Road, primary substation upgrades and provision of kerbside recycling equipment. Whilst not only related to development at NW Cambridge the urban extension is also reliant on numerous transport improvements that support a number of different cross boundary developments in both Local Authority areas.

**7.4.8** Social and green infrastructure includes education, leisure, open space, community health and green infrastructure. Specific schemes include a joint health facility alongside a new key library, a new secondary school, primary schools, sports pitches, children's play space and a new community hall co-located with other uses.

## 7.5 Both Local Authorities Summary

**7.5.1** Infrastructure required to support development across both Cambridge and South Cambridgeshire has been identified specifically to support the overall development levels across the area. It should be noted that these facilities could be located in specific settlements but provide a strategic function. Table 7.4 sets out the infrastructure schedule, costs and funding.

Table 7.4: Both Local Authorities Infrastructure Costs and Funding

| | Infrastructure Costs | Identified Funding | Funding Gap |
|---|---|---|---|
| Physical Infrastructure | £1,293,920,000 | £172,146,531 | £1,121,773,469 |
| Social and Community Infrastructure | £0 | £0 | £0 |
| Green Infrastructure | £0 | £0 | £0 |
| **Total Infrastructure Requirements** | **£1,293,920,000** | **£172,146,531** | **£1,121,773,469** |

**7.5.2** Strategic infrastructure requirements represent the largest cost. The identified physical infrastructure requirements relate to transport and include the A14 highway improvements considered critical to support development. Other transport schemes such as park and ride facilities are also included, alongside social and green infrastructure requirements such as the sub-regional stadium proposal.

# 8 Funding

**8.1.1** Over the last five years or so, funding for infrastructure would have been expected from a number of mainly public sector sources. This section summarises the key traditional sources of funding and the key implications for change in the future. It should be noted that the general climate for investment in the next few years is gloomy:

- Mainstream Government departmental budgets have generally been increasing over the last decade but the Comprehensive Spending Review (CSR) sets out deep cuts.
- Transport – some contribution towards the cost of strategic highways might have been expected from the Regional Fund Allocation (RFA) bidding process provided that there was a robust transport case. It is now unlikely that there will be departmental funding available for any significant strategic road improvement in Cambridge/South Cambridgeshire in the short term. Funding from the Councils for local transport improvements will also be very limited.
- Flood mitigation – flood mitigation schemes continue to be funded on a case-by-case basis with individual Local Authorities bidding for funding. It is likely that the scale of funding will be reduced.
- Housing – Homes and Communities Agency (HCA) housing grant for Registered Social Landlord (RSL) projects are likely to reduce in the short term and dependant on the provision of the affordable rent product.
- Growth Area funding via CLG is to be replaced by the Regional Growth Fund for which the CSR allocates £1.4 billion over the next three years. We consider this funding source in more detail later.
- RDA funding of economic development initiatives will cease and be replaced by initiatives promoted by Local Economic Partnerships. It is unclear how these initiatives might be funded.

**8.1.2** We draw five key implications from this initial review. These are:

**1** There will be much more limited mainstream funding from central government.

**2** There is considerable uncertainty concerning the availability and extent of both capital and revenue support for programme delivery in growth areas.

**3** For local authorities such as Cambridge City Council and South Cambridgeshire District Council wishing to promote their own economic and associated housing growth within the “localism” agenda, there is an onus on making as much progress as possible in the short term using locally derived resources.

**4** Forward funding of some key infrastructure elements will be required and if grant or loan bids are not successful the Councils may have to consider borrowing and seek to recoup the up-front costs from CIL or New Homes Bonus receipts.

**5** It will be essential for the Councils to work closely with other agencies such as the HCA and the HA as well as private sector partners.

## 8.2 Grant and Loan Funding

**8.2.1** Given the limited extent of mainstream departmental funding from central government in the short term the main priorities for sourcing capital funding are the new proposed grant regimes; namely the Regional Growth Fund, the funding directed through the Local Investment Plan and the Green Investment Bank.

## 8.3 Grant Funding

### Regional Growth Fund

**8.3.1** The Regional Growth Funding (RGF) is a £2.4 billion initiative by the Coalition Government to encourage enterprise and to rebalance the economy of areas which currently are heavily reliant on public sector jobs.

**8.3.2** The RGF will support bids that remove barriers to private sector-led economic growth. It will provide funds to support:

- Private sector investment that triggers growth and jobs; and
- Some basic infrastructure that triggers private sector led economic growth as part of a wider investment.

**8.3.3** To date there has been two rounds of successful RGF bids (January 2011 and October 2011) successful South East and East of England schemes applicants include:

- General Motors;
- Portsmouth Naval Base Property Trust;
- Solent Local Enterprise Partnership;
- Southampton City Council;
- The East Kent districts of Canterbury, Dover, Shepway and Thanet;
- Vestas Technology UK Ltd;
- Luton Borough Council; and
- Lotus Cars Ltd.

**8.3.4** RGF bids need to be submitted either by the private sector or by public/private joint bids. There is a minimum bid limit of £1 million per bid and to be successful it is anticipated that bids should lever in additional funding besides the grant itself.

**8.3.5** The Greater Cambridge and Greater Peterborough Local Enterprise Partnership submitted six bids to the first round of the RGF process, but were unsuccessful. Bids for the Cambridge area include £10million bid for Chesterton Station and a £2million bid for a low carbon Hub in conjunction with Cambridge University. No bids were submitted for Cambridge or South Cambridgeshire for the second round of RGF.

**8.3.6** The Governments Autumn Statement (November 2011) confirmed that the Regional Growth Fund for England would increase by £1 billion, and extend in timescale it into 2014–15, to provide on-going support to grow the private sector in areas currently dependent on the public sector.

**8.3.7** It is concluded that the RGF presents an opportunity to secure funding and we would encourage Cambridge and South Cambridgeshire to submit future bids. Round 3 of the Regional Growth Fund is currently accepting bids and further rounds present additional opportunities.

### New Homes Bonus

**8.3.8** The New Homes Bonus started in 2011-12 and is intended to provide £196 million in year 1, rising to £250 million in the following three years. Beyond 2014-15 the overall amount of New Homes Bonus is not specified. It is stated that where there is a two tier local government structure some 20% of the New Homes Bonus could go to the higher tier authority.

**8.3.9** In 2011/12 Cambridge City Council received £786,646 New Homes Bonus based on the quantity of new dwellings delivered. The payment on these dwellings will continue and in Cambridge will total approximately £8,746,742 from 2012-13 up to 2014-15.

**8.3.10** South Cambridgeshire received £939,000 from the New Homes Bonus in 2011/2012. Future income is estimated at:

- £1.9 million 2012/2013;
- £2.85 million 2013/2014;
- £3.8 million 2014/2015; and
- £4.75 million 2015/2016.

**8.3.11** Whilst subject to variation dependant on future development levels, the New Homes Bonus could represent a significant source of finance. However, it is evident that a proportion of the New Homes Bonus receipts might need to substitute for the reductions in revenue grant from Government to Councils. It will be the Council to decide if revenue arising from the New Homes Bonus could be used to fund infrastructure provision, especially infrastructure required to progress strategic development sites that have stalled, e.g. Northstowe.

### Growing Places Fund

**8.3.12** The Coalition Government has launched the £500 million Growing Places Fund in November 2011 to deliver infrastructure to support economic growth. This funding will be accessed via Local Enterprise Partnerships (LEPs) and be allocated funding using a non-ring-fenced approach, which comes with the single condition that it is spent on capital projects.

**8.3.13** It is also expected that funding to be used to establish recoverable models to take forward infrastructure projects. CLG will use a simple formula based on population and employed earnings as a proxy for the economic activity. In order to access funds the LEPs need to demonstrate that they are committed to using the Growing Places Fund to generate economic activity in the short term by addressing immediate infrastructure and site constraints which promote the delivery of jobs and housing.

**8.3.14** The first round of LEP funding, applications have received their allocations. The Greater

Cambridge and Greater Peterborough LEP received £ 16.1 million. In May 2012 the EP announced the shortlisted projects, including two schemes in Cambridge and South Cambridgeshire highlighted below:

- A1139 Fletton Parkway Improvement scheme, Peterborough;
- Haverhill Research Park;
- Ely Crossing;
- The Future Business Centre (Social & Environmental Business Incubator), Cambridge;
- Fenland Horticulture and Land based Skills centre;
- Babraham Park and Ride;
- Ashwell Business Park, Rutland;
- Huntingdon Link Road;
- Peterborough Southbank Regeneration Project – Phase 2;
- Utility improvements for Northstowe; and
- Babraham to Abingdon Cycleway.

**8.3.15** The Growing Places could be a valuable source of future funding as the budget 2012 announced an additional £270 million of funding for the Growing Places Fund programme. This suggests further rounds of funding which Cambridge City Council and South Cambridgeshire District Council should work with the Greater Cambridgeshire and Greater Peterborough LEP to access. The Growing Places Fund could be utilised to unlock development by supporting infrastructure provision.

### Revolving Infrastructure Fund

**8.3.16** The Greater Cambridge and Greater Peterborough LEP intends to use funds like the Growing Places Fund to establish a Revolving Infrastructure Fund. This will utilise recycled funds from shortlisted Growing Places Fund schemes as they repay the original funding allocation. The Revolving Infrastructure Fund could therefore be utilised for further infrastructure schemes in the Cambridge and South Cambridgeshire area.

### Housing & Communities Agency (HCA)

**8.3.17** HCA investments include The National Affordable Housing Programme. Between 2008-9 and 2010-11 this programme expects to invest in Cambridge City and South Cambridgeshire.

**8.3.18** This will be followed by the Affordable Homes Programme 2011-15, which aims to increase the supply of new affordable homes in England. The HCA will invest £4.5bn in affordable housing through the Affordable Homes Programme and existing commitments from the previous National Affordable Housing Programme. The majority of the homes built will be made available as Affordable Rent with some for affordable home ownership, supported housing and in some circumstances, social rent.

**8.3.19** The HCA is delivering existing commitments from the previous Housing Stimulus Programme, including Kickstart and Local Authority New Build. Kickstart has supported infrastructure and development costs plus support for affordable housing and HomeBuy Direct (HBD). Since April 2011 the availability of HCA support for affordable housing has significantly reduced.

### Local Sustainable Transport Fund (LSTF)

**8.3.20** The Government's Local Sustainable Transport Fund (LSTF) makes £560 million available for packages of transport measures focused on economic growth and reducing carbon emissions. Cambridgeshire County Council submitted a bid to round 1 of the LSTF fund (in April 2011), but was unfortunately unsuccessful, however the Council was invited to submit a revised bid and this was successful in May 2012.

**8.3.21** The bid was developed with a wide range of partners from across the public, private and third sectors, and focuses on improving links to transport interchanges and corridors, improving links to employment areas and targeted marketing and information. The funding bid has secured an additional investment of £5 million over the next four years and unlocked £4.22 million in match funding.

### Local Transport Plan (LTP3)

**8.3.22** Cambridgeshire's Third Local Transport Plan runs from 2011-2026 (LTP3). In the first four years (2011-2015) around £15.8 m of government funding is estimated (down 25% from LTP2).

**8.3.23** The Government now expects major local transport schemes to be delivered by Local Enterprise Partnerships (LEPs), comprised of local authorities and private sector bodies. From 2015 these will be empowered to come together into local transport consortia to deliver major projects across wider areas.

**8.3.24** The various streams of local transport funding have been consolidated into four main grants or allocations, including the old Regional Funding Allocation (RFA), which has been replaced by the Local Sustainable Transport Fund.

### Local Investment Plan

**8.3.25** The investments set out in the Local Investment Plan are those required to deliver the agreed economic, housing and environmental ambitions of Cambridgeshire. The Local Investment Plan show the Homes and Communities Agency that investment in Cambridgeshire meet key objectives and offer value for money, demonstrate how growth, housing regeneration projects can come forward and express collective priorities.

**8.3.26** The Cambridge Sub Regional Housing Board coordinate the Cambridgeshire Local Investment Plan (CLIP), working with colleagues across the local authorities. Part of the Plan sets out the work programmes that require Homes and Communities Agency investment. The CLIP was produced in 2011 and updated in 2012.

### Other Grant Funding

**8.3.27** There will continue to be other specialised sources of funds (e.g. Lottery, Sport England, Arts Council etc.,) for narrowly defined projects and wherever the opportunity arises, sources of central funding which can be bid into. However, funding from these directions cannot be guaranteed.

**8.3.28** Former grant mechanisms include the Regional Funding Allocation (RFA), which is no longer available.

## 8.4 Loan Funding

### Get Britain Building Fund

**8.4.1** A £420m fund to Get Britain Building was announced in November 2011 as part of the Government's housing strategy for England. The programme aims to unlock stalled sites with planning permission to support construction activity and restart work on sites delivering more than 15,000 new homes. It is intended to address difficulties in accessing development finance faced by some housebuilders and to help bring forward marginal sites by sharing risk.

**8.4.2** Following a strong response from the development sector, the fund was increased by a further £150 million to £570 million in March 2012. With the additional investment, the HCA has now shortlisted 224 schemes that will be invited to take part in a thorough due diligence process. The funding includes one scheme in Cambridge:

- BDW Trading Ltd, 60 dwellings, Huntingdon Road, Cambridge.

**8.4.3** The increase in funding via the Get Britain Building Fund indicates that further stalled development schemes in the Cambridge and South Cambridgeshire area could benefit. This opportunity should be explored further with the private sector.

### Green Infrastructure Bank and UK Green Investments

**8.4.4** The Local Growth White Paper indicates support for low-carbon energy and climate change adaptation, including the creation of a UK-wide Green Investment Bank (GIB). The Government is committed to ensuring that the GIB has the resources to help the UK to move towards a low-carbon economy and announced that the initial capitalisation will be £3 million and that the GIB will begin operation in 2012-13, a year earlier than previously anticipated.

**8.4.5** The Spending Review allocated £1 billion for the GIB and the Government is aiming for the remaining £2 billion on initial capital to be funded from the sale of assets. Government investment alongside private finance should mean that there is in the region of an additional £15 billion of investment in green infrastructure by 2014-15 as a result of the GIB.

**8.4.6** The Green Investment Bank project will evolve over two phases, preceded by a programme of preliminary Government investment in green infrastructure.

**8.4.7** Preliminary phase: UK Green Investments (UKGI) – from 2012 until state aid approval for GIB is granted, BIS's UK Green Investments team will make direct investments in green infrastructure projects.

**8.4.8** GIB establishment: – GIB will be established as a stand-alone institution following state-aid approval. It is expected that state aid approval will be granted by autumn 2012.

**8.4.9** GIB full borrowing: – from April 2015, the GIB will be given full powers to borrow, subject to public sector net debt falling as a percentage of GDP and further state aid approval being granted.

**8.4.10** The Government's UK Green Investments team (UKGI) is to make investment a total of £80 million in green infrastructure through two specialist fund managers who will make and manage

investments in the small scale waste recycling and reprocessing facilities, pre-treatment projects and energy-from-waste projects, on behalf of the Department for Business, Innovation and Skills.

**8.4.11** An initial fund of £50 million will be managed by Foresight Group and an initial fund of £30 million managed by Greensphere Capital. It is anticipated that all investments will be match-funded, leveraging in at least £80 million more to the projects.

**8.4.12** The Government will also make a further £100 million available for investment in the non-domestic energy efficiency sector. A fund manager to for this additional investment is due to be announced in the summer.

**8.4.13** The GIB and UK Green Investments are a significant funding source which should be available in 2012-2013. Possible early priorities are considered to be offshore wind, waste, and non-domestic energy efficiency. It is considered that Cambridge City Council and South Cambridgeshire District Council need to consider potential green investment projects that may be suitable for funding via these sources.

### Prudential and Other Borrowing

**8.4.14** The prudential framework was first introduced in 2004 and emphasises the links with strategic planning and asset management. The framework (Code) freed authorities from government control allowing them to borrow to finance capital investment in fixed assets so long as they can demonstrate that it was prudent, affordable and sustainable. The framework is underpinned by a set of prudential indicators:

- Service objectives, i.e. strategic planning for the authority;
- Stewardship of assets, e.g. asset management planning;
- Value for money, e.g. option appraisal;
- Prudence and sustainability, e.g. implications for external borrowing and whole life costing;
- Affordability, e.g. implications for council tax; and
- Practicality, e.g. achievability of the plan.

**8.4.15** The Local Government Association (LGA) and the Chartered Institute of Public Finance and Accountancy (CIPFA) have reviewed the effectiveness of The Prudential Code in Capital Finance for Local Authorities and concluded that the prudential borrowing system has worked very well. Future use of this vehicle could provide some of the necessary infrastructure in Cambridge and South Cambridgeshire.

**8.4.16** The Private Finance Initiative (PFI) enables local authorities to enter into a contract with the private sector for the provision of services involving new or improved capital assets. Support can be allocated by central Government departments towards the cost of the capital element of PFI projects. PFI credits are a measure of the private sector investment which will be supported by central government sponsoring departments. Issuing a PFI credit letter is a promise that PFI revenue grant can be claimed once the project is operational.

**8.4.17** The number of PFI credits issued each year over the period 2004 to 2009 increased from £1 billion to £2.4 billion with over 50% of the 2009 credits relating to education[7]. Typically schemes have to be of a certain size to be considered for PFI, which automatically rules out a number of smaller capital projects.

**8.4.18** The last Labour government was a big supporter of PFI and the Coalition Government has continued to approve large PFI schemes. There is continued debate about the terms of some of the PFI arrangements, where it has become clear that some projects have resulted in some high public sector costs. Subject to suitable terms PFI may offer opportunities for funding infrastructure in Cambridgeshire.

## 8.5 Local Sources of Funding

**8.5.1** There are potential local sources of funding additional to any costs which are already being financed through the Council tax or existing charges:

- Housing Growth Fund;
- Section 106 contributions;
- Community Infrastructure Levy (CIL)
- Enhanced user charges;
- Local asset backed vehicle (Making Assets Count);
- Adoption of a consortium approach to the selection of RSLs;
- Business rates bonus and TIF;
- Prudential and other borrowing; and
- Commercial activity.

### Housing Growth Fund

**8.5.2** The Housing Growth Fund (HFG) has provided £832 million to support the delivery of growth and infrastructure in Cambridgeshire from 2008 to 2011. Cambridgeshire Horizons who managed the fund, ceased to exist in September 2011. However, investments and loans worth over £20 million will be repaid to the LEP and used as part of a Revolving Fund in future to support sustainable development in Cambridgeshire.

### Section 106 and Section 278

**8.5.3** Until the introduction of the Community Infrastructure levy both Cambridge City Council and South Cambridgeshire District Council will continue to collect monies for off-site mitigations.

**8.5.4** In April 2014 or the introduction of CIL, the scope of S106 will be reduced back to its initial role to cover local mitigation and affordable housing contributions. The Government's intention is that where development needs to contribute towards the costs of the infrastructure required to support growth, this is through a Community Infrastructure Levy. As a result the scope for funding wider

[7] http://www.cipfa.org.uk/pt/download/CIPFA_and_LGA_Prudential_Framework_report.pdf

infrastructure requirements via Section 106 will be reduced to direct infrastructure requirements and potentially on site provision in instances where Local Authorities consider this a more appropriate delivery mechanism that CIL. The main restriction on S106 will be the limited ability to pool contributions (rule of 5 set out in CIL reg 122).

**8.5.5** It is envisaged that Section 106 agreements will be site-based and will relate to affordable housing contributions, the provision of land for local community facilities and open space provision and both on-site and off-site transport and environmental mitigation measures.

**8.5.6** Agreements for the private-sector funding of works on the strategic road network will continue to be required under section 278 of the Highways Act 1980. These agreements will continue to provide a financial mechanism for ensuring delivery of mitigation works identified and determined as necessary for planning permission to be granted.

### Community Infrastructure Levy (CIL)

**8.5.7** Both Councils can choose to introduce the Community infrastructure Levy. The charge per sqm of development is intended to work alongside S106 to secure community gain from development and address the infrastructure requirements associated with planned provision. The Community Infrastructure Levy is considered to be a valuable source of funding.

### User Charges

**8.5.8** The Audit Commission has recently indicated that some 12% of local government spending is financed through user charges such as car parking charges, fees for hiring Council venues and the like. It is possible that the Councils may be able to raise more revenue through an increased commercial approach to the use of its assets although if this is the case increased charges may be used to provide for the Councils' revenue spending.

### Local Asset Backed Vehicle (LABV)

**8.5.9** The well-known Croydon Urban Regeneration Vehicle (URV) provides a model for asset backed borrowing, with council assets used to match developer resources to raise equity and undertake the development. The profits from these ventures are then shared between the partners. Cambridgeshire County Council has recently undertaking Making Assets Count which could lead on to a LABV approach to joint ventures with the private sector as part of efficiency savings.

**8.5.10** There may be additional opportunities to use Council land and property assets in the future in order to either form joint ventures which will release capital value/income stream or as an asset which can be used as collateral for a loan:

- Joint venture development;
- Lease of asset to produce an income stream and/or to secure a loan; and
- Sale of asset and investment of proceeds to produce an income and/or secure a loan.

### Co-ordinated Comprehensive Approach to Procurement of RSLs

**8.5.11** Cambridgeshire Partnerships is a brand new organisation that brings together five of the leading affordable housing registered providers in the region, including:

- Two of the region's leading Homes and Communities Agency Investment Partners;
- Cambridge's two independent smaller RSLs;
- The region's leading RSL for services to people with disabilities; and
- A proven track record in community development.

**8.5.12** If the costs of affordable housing can be limited so that less subsidy from market housing is required then, all other things being equal, there would be more of a CIL/Section 106 contribution for wider infrastructure requirements. Clearly the Government's introduction of the affordable rent regime (new RSL rents to be set at 80% of market rents) would be a first step in reducing the amount of cross subsidy for affordable housing from market housing. In the remainder of this sub-section we consider the potential for other cost savings.

**8.5.13** The early provision of affordable housing will assist in achieving and then maintaining the planned level of housing completions. Unless there is a consistent programme of affordable housing provision the housing targets will not be achieved. Furthermore, there may be opportunities to limit the scale of cross-subsidy needed for affordable housing. Thus, there are two issues to address – how to accelerate the programme and how to reduce costs so that the cross-subsidy to affordable housing development through Section 106 contributions can be limited so that the amount available from CIL for general infrastructure provision can be maximised.

**8.5.14** First, developers generally claim that the private sector can build affordable housing at a lower cost than RSLs and this has generally become standard practice, especially in recent years when the housing market has become more muted. This is because of lower overheads and greater efficiencies. Cost reductions of 10% or thereabouts are suggested. Under this approach a house builder will complete affordable housing units and RSLs will then buy the housing from the house builder, often in a competitive market. In recent years this has increasingly become standard practice where affordable housing is provided as part of a market housing led project. Moreover, developers prefer to manage both the design of affordable housing to match their own designs and influence sale returns.

**8.5.15** Second, if a developer is building affordable housing then in the early years of the development of a strategic site it can be beneficial for the house builder to provide a good proportion of affordable housing so as to generate cash flow for subsequent phases of development through sales to RSLs. This will have the effect of accelerating the overall rate of housing delivery.

**8.5.16** Third, it is evident that very large RSLs, or consortia of RSLs can obtain loans for affordable housing at lower rates of interest than smaller RSLs. Typically a small or medium sized RSL individually might borrow for development at about 6%- 6.5% pa on loans secured against 100% of the value of the completed dwelling and with (at present) relative security of a guaranteed stream of income for loan repayments due to Housing Benefit. Large RSLs are able to secure more favourable loan terms. The effect of this is to increase the amount of capital that can be borrowed by £15,000 per unit or so. Cambridgeshire Partnerships brings together five of the leading RSLs in the local area.

**8.5.17** A combination of house builder led construction and collective negotiation of loans for RSLs to purchase the completed affordable units could bring down costs by up to 15% or so and assist in maintaining a good level of completions. Despite the uncertainty arising from Government's proposal to cap housing benefit it may be worth investigating the possibility of inviting RSLs across

Cambridgeshire/East of England to bid for selection on a county-wide basis with a reduced requirement for grant or Section 106 subsidy. For this to work it would be necessary to cover a large area. We recommend that early discussions are held with the HCA in order to progress this approach.

**8.5.18** Savings achieved in this way would be in addition to the savings which are likely to be achieved as a consequence of the Government's proposal to increase affordable housing rents to 80% of market rents.

### Other Incentives for Growth – Local Government Resource Review

**8.5.19** The White Paper highlights that the Government has been developing proposals for the following innovative forms of financing local government spending:

- Business Increase Bonus – similar in concept to the New Homes Bonus but based on additional business rates;
- Retention of locally-raised business rates – a more advance version of the above;
- Enterprise Zones; and
- Tax Increment Financing – borrowing against projected increases in business rates; the Government will be consulting on possible approaches.

**8.5.20** It is still too early to assess the potential arising from these White Paper initiatives, but as more detail emerges the Councils should be able to utilise them.

**8.5.21** The Greater Cambridge and Greater Peterborough Local Enterprise Partnership (LEP) have been successful in their bid for an enterprise zone at Alconbury Airfield in Huntingdonshire.

**8.5.22** The Government has announced plans for local retention of business rates by 2013, including a system of tariff and top ups to ensure that all Local authorities retain the same level of funding they received through the 2012/2013 formula grant allocation.

**8.5.23** In short the result is that business rate retention is likely to only be a benefit for new economic growth rather than for local authorities already collected more business rates than formula grant. Over the medium term this could result in an increase of funding for the Councils as the economy recovers.

### Local Authority Commercial Development Activity

**8.5.24** In addition to the land dealings discussed as part of joint venture arrangements, local authorities can also buy and sell assets in order to pay for infrastructure. It is possible that this process may involve profits as well as seeking disposal value.

## 8.6 Service Providers

**8.6.1** Some of the infrastructure providers will have funding to deliver infrastructure:

- Water and sewerage companies have investment budgets which are drawn from charges to customers;
- Gas and electricity companies and telecoms companies also have investment budgets which are drawn from charges to customers;
- The Environment Agency has funds from Defra to provide and maintain flood defences to protecting existing development – but this does not extend to new development which is expected to fund its own flood risk mitigation; and
- Education providers (either through the Local Education Authorities or as independent Academies) are funded on the basis of their pupil roll. However this is often barely adequate for operational costs, with little opportunity for capital development.

**8.6.2** Throughout the study, Peter Brett Associates has identified how infrastructure providers deliver infrastructure and highlighted potential sources of funding. Importantly when establishing a view on whether there is sufficient funding to provide future infrastructure requirements we need to acknowledge that some identified funding sources are not guaranteed as they are only funding bids at this time.

# 9 Infrastructure Delivery

**9.1.1** Infrastructure requirements identified in **Section 4**, **5** and **6** have been combined to create overall summary tables, which illustrate infrastructure requirements and potential funding shortfalls over time. The IDS has examined the indicative phasing of new development across Cambridge and South Cambridgeshire and infrastructure requirements have been positioned within time bands dependant on when they are likely to be required by new development. This creates an indicative infrastructure funding trajectory for the Cambridge, South Cambridgeshire and the cross boundary urban extensions.

## 9.2 Prioritisation

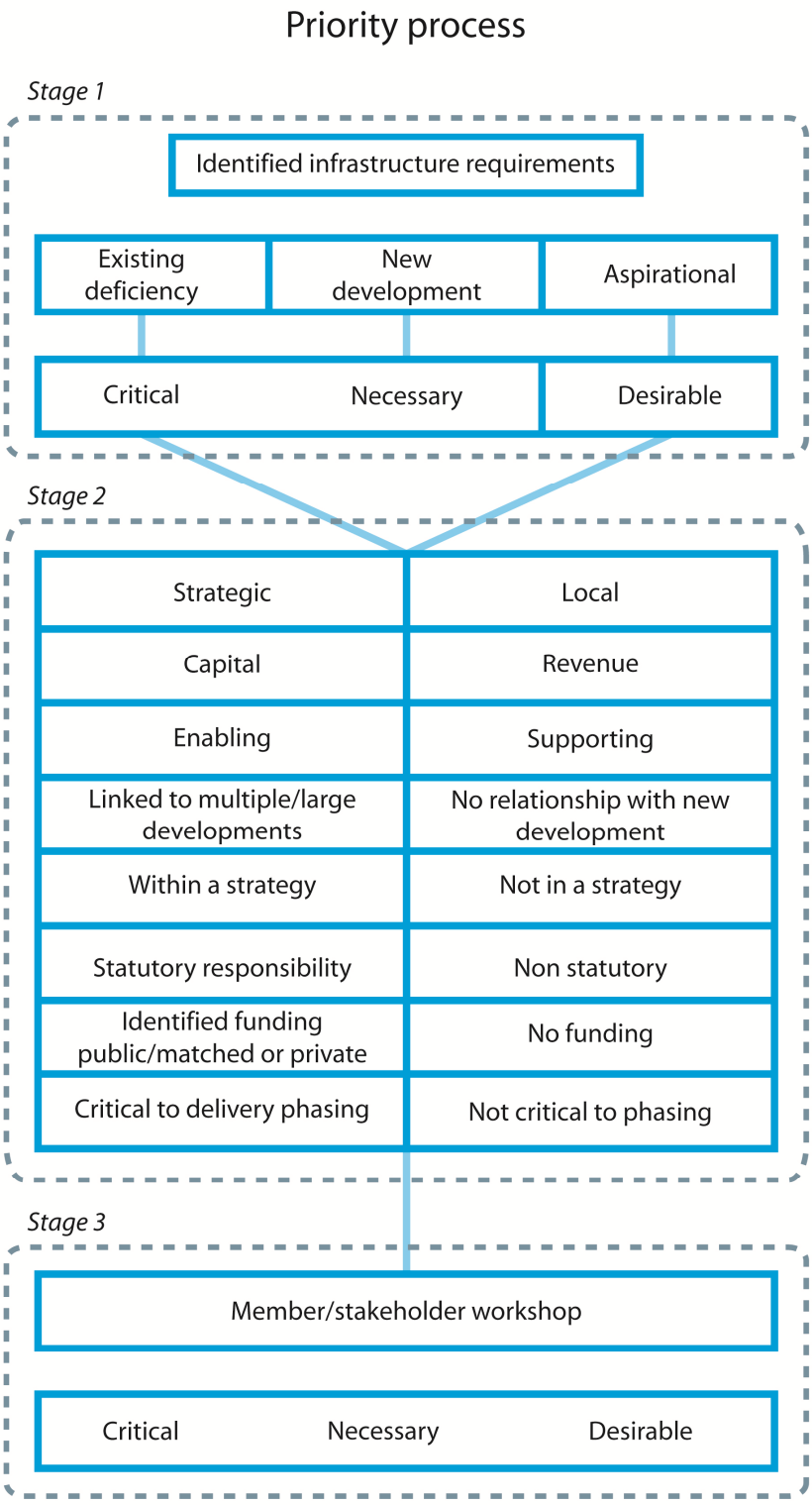
**9.2.1** As collectors of developer contributions and custodians of relevant policy, it is likely that Cambridge City Council and South Cambridgeshire District Council will need to promote a corporate prioritisation process as the demand on CIL and S106 increases. A framework for prioritisation will need to operate and the first steps towards such a framework are to take account of the two defining parameters:

- Prioritisation needs to reflect the intended spatial pattern of growth; and
- Prioritisation needs to reflect the importance of enabling physical infrastructure required to develop.

**9.2.2** In short, infrastructure related to strategic growth locations that are programmed to come forward in the first five or ten years of the plan period are likely to form the initial focus for investment, especially if they are required to enable development e.g. physical infrastructure such as access roads, flood prevention and utilities, without which developments would be inhabitable.

**9.2.3** Clearly, a balance needs to be struck between different types of infrastructure needed to make viable places aligned to government thinking on sustainable development. There may well be tensions between competing objectives, especially enabling infrastructure and support infrastructure such as schools that would be considered necessary to create a sustainable development.

**9.2.4** With these parameters in mind, Peter Brett Associates proposes a three stage process to prioritisation and have applied the first two stages of the approach. The diagram overleaf sets out the three stages and the factors taken into consideration at each stage.




**9.2.5** The first stage was to categorise each infrastructure scheme into three categories based on our initial view and feedback from stakeholders:

- Critical;
- Necessary; and
- Desirable.

**9.2.6** It is considered that all critical and necessary infrastructure is essential to support development, but the differing factor between them is the timing of their delivery. Critical Infrastructure is largely physical and enabling infrastructure, which must be delivered on time to allow proposed development to proceed in line with Cambridge City Council and South Cambridgeshire District Council's 5 year housing land supplies.

**9.2.7** The necessary category contains important infrastructure, which could potentially be provided later than required. The category therefore has the potential to allow infrastructure prioritisation if funding shortfalls occur.

**9.2.8** The desirable infrastructure category has been included, so more aspirational schemes to support sustainable development can be included within the IDS. Sustainable communities are places people want to live and in instances of funding availability desirable infrastructure schemes can help create better places to live, however, the consultant's recommend that critical and necessary infrastructure should be prioritised over desirable infrastructure in terms of funding and delivery.

**9.2.9** The second stage involved fine tuning the initial categorisation in stage one by considering individual infrastructure schemes. This process largely considered a series of factors such as the relationship between future development and the infrastructure scheme, available funding, importance to phasing delivery and political and stakeholder support in identified strategies and plans. This has resulted in a more focused list of critical infrastructure recommended by Peter Brett Associates.

**9.2.10** The final stage to be conducted by the Councils is to confirm the critical infrastructure lists with Councillors. Individual Council spending decisions rest with Cambridge City Council, South Cambridgeshire District Council, Cambridgeshire County Council and other organisation. Directly elected Councillors, will have the final decision on critical infrastructure in the light of current funding constraints.

## 9.3 Overall Requirements – Cambridge

**9.3.1** Overall the cost of infrastructure requirements for Cambridge is approximately £234.3 million. **Table 9.1** sets out the infrastructure requirements for locations within Cambridge.

Table 9.1: Infrastructure Requirements - Cambridge

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| Cambridge (Strategic) | 7,167,000 | 143,200,575 | 34,767,100 | - | 185,134,675 |
| Station Area | 254,287 | - | - | - | 254,287 |
| Area North | 12,307,507 | 3,712,530 | 95,403 | 105,748 | 16,221,188 |
| Area East | 4,516,716 | 3,438,957 | 283,335 | 314,944 | 8,553,952 |
| Area South | 10,876,423 | 2,159,771 | 116,093 | 128,736 | 13,281,023 |
| Area West/Central | 7,010,168 | 3,768,967 | 47,711 | 52,874 | 10,879,720 |
| **Cambridge Total** | **42,132,101** | **156,280,800** | **35,309,642** | **602,302** | **234,324,845** |
| Public Funding/Bids | 20,000 | 6,500,000 | 10,000,000 | - | 16,520,000 |

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| Private Funding | 4,669,345 | 17,646,319 | 9,553,975 | 78,600 | 31,948,239 |
| **SHORTFALL** | **37,442,756** | **132,134,481** | **15,755,667** | **523,702** | **185,856,606** |

**9.3.2** Taking into consideration identified public funding/bids (£16.5 million) and private funding (£31.9 million) an overall shortfall of approximately £185.8 million has been identified for 2010-2031.

**9.3.3** This includes funding shortfall in all time periods. The funding shortfall for 2010-2015 is £37.4 million, but increases to £132.1 million in 2016-2020. The shortfall then decreases to £15.7 million by 2021-2025 and further still to £0.5 million in 2025-2031.

**9.3.4** Infrastructure planning is constantly evolving and the further into the future you look the more difficult it is to identify requirements, costs and funding mechanisms. Crucial to the delivery of the planning strategies is delivery within the first 5 years. The Planning Inspectorate has made it clear that infrastructure delivery plans need to take a pragmatic view towards delivery.

**9.3.5** Peter Brett Associates has worked with stakeholders to identify views on what infrastructure is the highest priority. Ultimately a view on what constitutes critical infrastructure is one to be taken by the Council. See **Appendix 5** for Critical Infrastructure Schedules.

Table 9.2: Critical Infrastructure - Cambridge

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| Cambridge (Strategic) | 3,550,000 | 5,432,000 | 15,692,000 | - | 24,674,000 |
| Station Area | - | - | - | - | 0 |
| Area North | 11,200,000 | 3,000,000 | - | - | 14,200,000 |
| Area East | 300,000 | 2,000,000 | - | - | 2,300,000 |
| Area South | 9,400,000 | 2,000,000 | - | - | 11,400,000 |
| Area West/Central | 6,000,000 | 3,000,000 | - | - | 9,000,000 |
| **Cambridge Total** | **30,450,000** | **15,432,000** | **15,692,000** | **-** | **61,574,000** |
| Public Funding/Bids | - | 6,500,000 | 10,000,000 | - | 16,500,000 |
| Private Funding | 300,000 | 6,820,920 | 5,634,066 | - | 12,754,986 |
| **SHORTFALL** | **30,150,000** | **2,111,080** | **57,934** | **-** | **32,319,014** |

**9.3.6** Overall the critical Infrastructure funding shortfall is approximately £61.5 million, with specific shortfalls in the all the time periods. Importantly the shortfall for the first 5 years is approximately £30.1 million. Infrastructure critical for delivery of planning strategies generally relates to physical infrastructure such as transport, flood prevention and utilities, including gas, electricity and water/sewerage due to their fundamental enabling nature.

## 9.4 Overall Requirements – South Cambridgeshire

**9.4.1** Overall the cost of infrastructure requirements for South Cambridgeshire is approximately £484.7 million. **Table 9.3** sets out the infrastructure requirements for locations within South Cambridgeshire.

Table 9.3: Infrastructure Requirements - South Cambridgeshire

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| South Cambridgeshire (Strategic) | 33,812,064 | 33,059,700 | 6,500,000 | 63,600,000 | 136,971,764 |
| Bassingbourn Area | 43,597 | 15,529 | - | - | 59,126 |
| Comberton Area | 4,334,947 | 1,537,639 | - | - | 5,872,586 |

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| Cottenham Area | 282,735 | 66,603 | - | - | 349,338 |
| Fulbourn Area | 2,110,327 | 560,858 | 136,032 | - | 2,807,217 |
| Gamlingay Area | 4,211,680 | 40,606 | - | - | 4,252,286 |
| Histon / Impington Area | 3,569,627 | 135,097 | - | - | 3,704,724 |
| Linton Area | 34,398 | 2,006,630 | - | - | 2,041,028 |
| Melbourn Area | 998,874 | 10,004,100 | - | 140,122 | 11,143,096 |
| Sawston Area | 246,079 | 4,547,236 | - | - | 4,793,315 |
| Swavesey Area | 1,757,529 | 3,752,185 | - | - | 5,509,714 |
| Northstowe | 686,302 | 141,801,496 | 118,796,325 | 45,941,648 | 307,225,771 |
| **South Cambridgeshire Total** | **52,088,159** | **197,527,679** | **125,432,357** | **109,681,770** | **484,729,965** |
| Public Funding/Bids | 12,000,000 | 21,250,000 | 6,500,000 | - | 39,750,000 |
| Private Funding | 10,377,505 | 12,228,964 | 4,886,058 | 5,239,844 | 32,732,371 |
| **SHORTFALL** | **29,710,654** | **164,048,715** | **114,046,299** | **104,441,926** | **412,247,594** |

**9.4.2** **Table 9.3** identifies the total cost of infrastructure at approximately £484.7 million. Identified funding includes public funding/bids (£39.7 million) and private funding (£32.7 million) resulting in an overall funding shortfall of approximately £412.2 million over the 2010-2031 period.

**9.4.3** Peter Brett Associates has worked with stakeholders to identify views on what infrastructure is the highest priority across South Cambridgeshire. A view on what constitutes critical infrastructure is one to be taken by the Council, but **Table 9.4** sets out what the consultants consider to be critical.

Table 9.4: Critical Infrastructure –South Cambridgeshire

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| South Cambridgeshire (Strategic) | 35,750,000 | 6,500,000 | 6,500,000 | - | 48,750,000 |
| Bassingbourn Area | - | - | - | - | - |
| Comberton Area | - | - | - | - | - |
| Cottenham Area | - | - | - | - | - |
| Fulbourn Area | - | - | - | - | - |
| Gamlingay Area | 4,000,000 | - | - | - | 4,000,000 |
| Histon / Impington Area | 3,000,000 | - | - | - | 3,000,000 |
| Linton Area | - | 2,000,000 | - | - | 2,000,000 |
| Melbourn Area | - | 9,500,000 | - | - | 9,500,000 |
| Sawston Area | - | 4,500,000 | - | - | 4,500,000 |
| Swavesey Area | - | 3,000,000 | - | - | 3,000,000 |
| Northstowe | - | 9,634,000 | - | - | 9,634,000 |
| **South Cambridgeshire Total** | **42,750,000** | **35,134,000** | **6,500,000** | **-** | **84,384,000** |
| Public Funding/Bids | 12,000,000 | 23,450,000 | 6,500,000 | - | 41,950,000 |
| Private Funding | 8,909,507 | 9,550,000 | - | - | 18,459,507 |
| **SHORTFALL** | **21,840,493** | **2,134,000** | **0** | **-** | **23,974,493** |

**9.4.4** **Table 9.4** shows that the cost of critical infrastructure across South Cambridgeshire is £84.3 million and currently there is an identified shortfall of £21.8 million within the first five year period.

## 9.5 Overall Requirements – Cross Boundary

**9.5.1** **Table 9.5** below sets out the overall requirements for Cross Boundary development at the Orchard Park, Cambridge East, Southern Fringe and North West Cambridge,.

Table 9.5: Infrastructure Requirements - Cross Boundary

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| Orchard Park/Arbury | 2,173,845 | 250,790 | - | - | 2,424,635 |
| Cambridge East | 356,315 | 8,424,692 | 31,636,384 | - | 40,417,391 |
| Southern Fringe | 24,369,109 | 46,858,126 | - | - | 71,227,235 |
| North West Cambridge | 13,009,771 | 22,866,436 | 48,207,578 | 500,000 | 84,583,785 |
| **Cross Boundary Total** | **39,909,040** | **78,400,044** | **79,843,962** | **500,000** | **198,653,046** |
| Public Funding/Bids | 3,530,000 | £3,900,000 | | | 7,430,000 |
| Private Funding | 25,482,085 | 49,745,204 | 6,489,354 | | 81,716,643 |
| **SHORTFALL** | **10,896,955** | **24,754,840** | **73,354,608** | **500,000** | **109,506,403** |

**9.5.2** **Table 9.5** illustrates an overall shortfall of £109.5 million and funding shortfall in all time periods. The funding shortfall for 2010-2015 is £10.8 million, but increases to £24.7 million in 2016-2020. The shortfall then increases further to £73.3 million in 2021-2025 and then decreases to £0.5 million in 2025-2031. Critical infrastructure is set out in **Table 9.6:**

Table 9.6: Critical Infrastructure – Cross boundary

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Total |
|---|---|---|---|---|---|
| Orchard Park/Arbury | - | - | - | - | - |
| Cambridge East | - | - | - | - | - |
| Southern Fringe | 1,230,000 | 4,500,000 | - | - | 5,730,000 |
| North West Cambridge | - | 3,500,000 | - | - | 3,500,000 |
| **Cross Boundary Total** | **1,230,000** | **8,000,000** | **-** | **-** | **9,230,000** |
| Public Funding/Bids | - | 3,900,000 | - | - | 3,900,000 |
| Private Funding | - | 4,100,000 | - | - | 4,100,000 |
| **OVERALL SHORTFALL** | **1,230,000** | **0** | **-** | **-** | **1,230,000** |

**9.5.3** **Table 9.6** illustrates that overall critical infrastructure to support cross boundary development costs 9.23 million and there is a funding shortfall of 1.23 million in the first 5 years.

## 9.6 Overall Requirements – Both Local Authorities

**9.6.1** **Table 9.7** below set out additional infrastructure costs for both local authorities. The schemes include strategic transport improvements such as improvements to the A14.

Table 9.7: Infrastructure Requirements – Both Local Authorities

| | 2010-2015 | 2015-2020 | 2020-2025 | 2025-2031 | Unknown | Total |
|---|---|---|---|---|---|---|
| Both Local Authorities | 11,465,000 | 1,192,005,000 | 2,725,000 | 2,725,000 | 85,000,000 | 1,293,920,000 |
| Public Funding/Bids | 4,050,000 | 55,750,000 | 1,250,000 | 1,250,000 | 30,000,000 | 92,300,000 |
| Private Funding | 4,091,070 | 20,755,461 | - | - | 55,000,000 | 79,846,531 |
| **Overall Shortfall** | **3,323,930** | **1,115,499,539** | **1,475,000** | **1,475,000** | **0** | **1,121,773,469** |

**9.6.2** **Table 9.7** shows a funding shortfall of £1.12 billion, largely due to the alternative A14 scheme. It should be noted that the unknown column represents the BDUK Superfast Broadband project which will be implemented over the whole Of Cambridgeshire by 2031. In terms of critical infrastructure for both Local Authorities, all schemes except the BDUK broadband project are considered critical.

## 9.7 Addressing the Funding Shortfall?

### Secure Increased Levels of Public Funding

**9.7.1** At present limited secured public funding has been identified. It is important that now that infrastructure requirements have been identified public funding avenues are rigorously pursued. Public funding streams will be available over the 2010-2031 period and new rounds of funding and new sources of public funding will become available for assist infrastructure delivery.

**9.7.2** The study has considered a wide variety of funding sources in **Section 8**. Cambridge City Council and South Cambridgeshire District Council will have to consider the use of these sources, including prudential borrowing, user chargers and the new homes bonus to potentially address the funding shortfall.

### Secure and Increased Levels of Private Funding

**9.7.3** Developer contributions could potentially contribute a significant amount of funding towards infrastructure delivery. Even though in the current economic climate, contributions from this source are likely to be reduced, the long term potential is considerable. The slowdown should be seen as an opportunity for the Councils to formulate a comprehensive approach to securing developer contributions via the Community Infrastructure Levy.

### Spatial Priorities and Delayed Infrastructure Phasing

**9.7.4** Financial resources will rarely meet all the identified needs for infrastructure and there will inevitably be a requirement to phase and prioritise projects across an area. As a result, it is recommended that a qualitative framework and a decision-making body will need to be defined to prioritise between settlements, sub areas and individual projects required to support development.

**9.7.5** As collectors of developer contributions and custodians of relevant policy, it is likely that Cambridge City Council and South Cambridgeshire District Council will need to promote a corporate prioritisation process as the demand on CIL and S106 increases. A framework for prioritisation will need to operate taking account of three main elements:

**9.7.6** Prioritisation will need to reflect the intended spatial pattern of growth and be presented so that the infrastructure requirements for each settlement and particular development areas. In this context, infrastructure related to strategic growth locations that are programmed to come forward in the first five or ten years of the plan period are likely to form the initial focus for investment.

**9.7.7** Prioritisation between types of infrastructure (where funding is not ring fenced to certain types of investment) - clearly, a balance needs to be struck between different types of infrastructure needed to make viable places aligned to government thinking on sustainable development. There may well be tensions between competing objectives

**9.7.8** Prioritising infrastructure within the phasing trajectory, so that infrastructure is provided slightly later than desired is considered a potential solution towards trajectory funding issues.

Community infrastructure in particular could potentially be delayed to assist in the smooth delivery of development and associated strategic infrastructure. It is considered that critical and necessary infrastructure should be prioritised over desirable infrastructure in terms of funding and delivery.

**9.7.9** It is considered that this process must involve local authority officers, infrastructure stakeholders and, ultimately, Councillors.