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Cambridge Sub Region

Long Term Delivery Plan.

Final Report

August 2007

Cambridgeshire Horizons

Contents

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1. Executive Summary

The Cambridge sub-Region has planned for the housing and employment growth needed to meet increasing housing market pressures and respond to its leading position within the global economy.

This response, agreed through the adopted Structure Plan and in emerging Regional Spatial Strategy represents a marked increase in the requirements for new infrastructure, ensuring that people are living in sustainable communities within an attractive built and natural environment, with a range of housing types and tenures to cater for people on different incomes, accessible by several modes of transport, and well served by education, health, social and leisure facilities.

The scale of infrastructure provision is commensurate to the scale of growth, and is beyond that experienced in the past. It requires a new response. That is the purpose of this Long Term Delivery Plan (LTDP) report, which has been prepared by Deloitte for Cambridgeshire Horizons and its partners. It considers, the infrastructure required to support development on sites over 100 dwellings in size, which include the 5 major schemes including Northstowe and urban extensions to Cambridge. Significant progress has been made on delivery of the sub-regional strategy, and a number of major projects are well advanced.

The LTDP has four principal areas of focus:

- Looking at the infrastructure requirements up to 2021;
- Strengthening the approach to funding infrastructure;
- Considering potential longer term requirements to 2031; and
- Considering a broader implementation framework.

1.1.1 Infrastructure Requirements to 2021

A programme of infrastructure investment needed to support housing growth (on sites over 100 dwellings in size) has been identified based on existing identified projects, background analysis, and benchmark assumptions. This represents a very significant programme of investment, totalling over £3.9bn, required over the 20 year period that began in 2000/1. On top of this, significant investment in affordable housing is required (estimated at circa £1bn)

However, significant progress has already been made. £251m was expended on infrastructure between 2000 and 2006. This can be broken down as follows:

- £95.2m was expended on transport initiatives (including £68.1m through the Local Transport Plan);
- £17m went from county-wide s.106 agreements to support education; and
- £138m was expended on health related projects, with the majority (£129.1m) contributing to major (and ongoing) schemes at Addenbrooke's and Hinchingbrooke Hospitals; and

On top of this, the Housing Corporation invested circa £83m to support affordable housing.

The analysis below identifies spent amounts and additional investment required to continue to support growth to 2021.

Expenditure Breakdown						
	Spent	Committed Funding	Anticipated Funding	Potential Dev Cont	Future Funding Requirement	TOTAL
Transport	95.20	169.10	1,200.00	2,17.64	593.30	2,275.24
Education	17.00	-	2.30	394.98	-	414.28
Community Facilities	-	-	-	63.43	50.00	113.43
Health	138.85	190.50	160.50	39.65	32.50	562.00
Open Space & Recreation	-	-	-	141.85	-	141.85
Utilities	-	-	35.00	355.90	88.00	478.90
	251.05	359.60	1,397.80	1,213.45	763.80	**3,985.70**

The total costs of infrastructure (excluding affordable housing) over the period 2007 to 2021 (excluding that spent) is £3.734 bn. This comprises:

- Very significant investment in transport infrastructure, including highways, public transport and other sustainable transport infrastructure, notably major schemes such as the A14 and A428 Caxton to St Neots, alongside a programme of transport works valued at circa £550m under the Transport Innovation Fund (TIF) bid recently submitted
- Major investment in health facilities is identified to support development at Addenbrooke's and Hinchinbrooke Hospitals funded through the Private Finance Initiative (PFI), plus small scale additional health requirements relating individual developments;
- Additional infrastructure costs of c. £1.15 bn are identified to deliver education, community facilities, open space and recreation and utility costs. The private sector will be required to contribute significantly towards the funding of this infrastructure through developer contributions negotiated on the basis of individual development / sites and subject to the viability of developments in the context of social and physical infrastructure provision;
- Investment in utilities infrastructure, including major site specific works such as the water treatment works associated with Northern Fringe Site.
- Relatively smaller amounts to deliver investment in communities facilities, quality of life initiatives and open space/recreation resources.

The total investment required is a very significant sum. However:

- Of that figure, £359m of funding has already been committed by various public sector agencies (including circa £170m on transport). This excludes Housing Corporation funding for affordable housing earmarked through the Cambridge Housing Challenge and NAHP.
- A further £1.397bn of funding is expected to come forward through the public sector (relating primarily to works to the A14 and A428 Caxton to St. Neots, and health investment summarised below). Additional transport requirements will need to be met through Cambridgeshire County Council's Local Transport Plan (LTP) and developer contributions to open up local access to development sites; Although there are no commitments, it is a reasonable planning assumption that these investments will follow.
- Approximately one third of the cost is currently earmarked to come from the private sector, but this is obviously subject to s.106 agreements and the application of planning guidance and principles. The assumption is that the bulk of on-site-related infrastructure, and some sub-regional infrastructure, will be expected through s.106 agreements negotiated with developers. This is an expectation in line with Government Guidance. Deloitte have not been party to valuation work undertaken on an individual site basis but are aware that a concern exists as to the sufficiency of land values to support identified and required infrastructure; For this reason, the estimate of £1.3bn from developer contributions should be regarded as an assumption rather than a firm estimate.
    - This raises a critical issue in relation to the funding of infrastructure: to maintain development viability it may not be possible to meet certain infrastructure costs through developer contributions and alternative funding sources will need to be explored as part of a wider public / private funding package; and
    - In addition, much of the infrastructure has to be provided 'up-front' before development begins, making it impossible for developers to fund until their developments are well underway. These are issues explored later in the document.
- Based on the preceding assumptions, a possible future funding requirement, as yet unidentified, is estimated at £763m. A significant proportion of this relates to transport infrastructure and the associated bid for Transport Innovation Fund (TIF) funding. Projects relating to TIF are valued at c. £550m and viewed as vital for addressing not only sub-regional transport issues but also those that are site specific towards the sub-region obtaining its housing targets. Were TIF funding successful, a major portion of the current funding 'gap' would be bridged (notwithstanding the issue of s.106 contributions). Conversely, there are currently no alternative options for funding the infrastructure identified under the TIF proposals, demonstrating its importance to achieving the Growth Area goals.

These figures are exclusive of public and private sector funding for affordable housing which could total an additional £1 bn. It is understood that grants have been committed from the Housing

Corporation of £44.2m, with future 5-year NAHP commitments via the Cambridge Housing Challenge.

1.1.2 Strengthening the approach to funding infrastructure

Although significant progress has been made, there are a number of challenges in funding future infrastructure:

- There are concerns for some sites are that land values are not sufficient to deliver all the infrastructure associated with these developments (e.g. Northstowe). Cambridge North East is a major doubt. For this reason, based on current information, the assumption identified above that the private sector will be able to supply £1.2bn should be regarded with caution. This would increase the funding gap.
- There are timing issues,
- There are also significant uncertainties on the precise infrastructure costs needed for some major sites (e.g. Cambs East)
- If TIF is not supported or the bid is unsuccessful, there are currently no alternative options for funding
- Due to funding cycles and uncertainties flowing from the CSR07, there is significant infrastructure that is not yet earmarked for funding.
- Funding for 'soft' infrastructure around quality of life (e.g. culture) will be affected to some extent by the call on resources of the Olympics and the greater need displayed by some other areas. However, the sub-region should be planning to build the case for funding (e.g. Lottery etc) in the period post 2012, and making the economic linkages associated with quality of life infrastructure.

To address the issue of 'up-front' infrastructure requirements this LTDP takes forward the in-principle approval for a Rolling Fund, whereby Government investment in up-front infrastructure is recycled into the Rolling Fund for further investment, using value captured from development through s.106 agreements and other income. Identified projects that may require significant upfront investment include:

- Where significant upfront investment is required to construct access roads into major development sites to enable housing construction to commence. As is the case with the distributor roads at Northstowe, the Addenbrooke's access road to serve the Southern Fringe and access costs for Cambridge East;
- If it is identified that developer contributions are required to support the development of futher education provision and a Higher Education facility to serve the sub-region (awaiting outcome of LSC review); and
- Significant costs relating to the provision of Secondary and Primary Schools on major development sites where trigger points necessitate that design, planning and development must commence prior to housing construction commencing and where there are significant apportionment issues. This is the case at Northstowe and on the Southern Fringe.

Equally, there may be other infrastructure projects where, as a result of apportionment, risk, and/or cash flow issues, the Rolling Fund could play a role. However, its ability in early years to fund will be a function of public sector investment into it, before future development receipts flow into it.

There are lots of different ways in which the Rolling Fund might be structured and operate in practice which need to be considered by Cambridgeshire Horizons and its local partners. These include the potential for it to attract up-front private investment. This LTDP identifies a number of different models for the Fund and sets out the work needed during 2007/8 to make the Rolling Fund a reality.

Local Authorities within the sub-region are generally good at using s.106 agreements. Previous work has indicated that a 'roof tax' (or 'tariff') system is not appropriate given differing land values across the sub-region. Cambridgeshire Horizons should work with all authorities to develop a sub-regional framework for s.106 agreements to spread best practice and put value capture mechanisms into place. A sub-regional Planning Obligations Framework to tackle strategic issues including:

- Disseminating best practice on structuring s.106 agreements, including use of trigger points to plan timing of infrastructure delivery to the way in which major developments are delivered and phased
- Cross-boundary apportionment issues (where costs of infrastructure need to be allocated between ownerships/planning applications)
- A clear framework for 'pooling' of s.106 contributions from different developments to deliver sub-regional infrastructure where the requirement is generated by an aggregation of new developments
- Linked to the above, a clear mechanism and framework for capturing 'extra' value uplift (or 'overage') that occurs after the grant of planning permission as a result of market changes, more detailed/or amended plans for later phases and so on. Such an uplift, which would operate within the policy tests of Circular 05/05 using a 'clawback' mechanism needs to be subject to more detailed work, and must be applied reasonably and proportionately, and only to deliver infrastructure needed to support the development in question.
- There is a risk that such a framework would have a short lifespan given the Government Proposals for a Planning Gain Supplement (PGS), but in advance of any likely PGS scheme being introduced in 2009, several major applications may be determined, and there is a need to embed new tools quickly.

Local Government needs to continue to examine imaginative ways in which its resources and other funding streams can be stretched to deliver infrastructure. There are a range of funding sources and delivery models available to the public sector, which are considered further in Section 6.5. These include PFI, LIFT/LEP and other PPP models – it will be critically important to select the right model taking into account the funding rounds set by Government (e.g. availability of credits) and other factors (including changing operational requirements for those services). With changing models of government (e.g. Lyons), shared services etc, there is also the latent potential in the medium term for government property assets to be rationalised and for these to be part of asset-backed vehicles/PPP models. There is a need to ensure that authorities and agencies properly recognise the funding avenues available and work hard to maximise the funding potential available.

These are explored in more detail in the Delivery Plan though it is difficult to draw overall conclusions as to which funding sources and delivery models represent the most appropriate approach for Cambridgeshire Horizons on a long term basis given the timescales over which the growth agenda is being delivered, and the very project specific delivery issues associated with individual option appraisals to test funding and delivery model applicability.

1.1.3 Potential longer term requirements to 2031

Development will not cease in 2021. Some major sites have a timeline that extends beyond 2021, and the LTDP identifies High, Medium and Low growth scenarios for the sub-region based on past levels of housing development and extrapolated future RSS rates. Although it is not know what growth may or may not be required beyond current RSS, and without prejudice to any future planning decisions, it is sensible to begin considering what impact future growth might have, so that infrastructure providers and funders can begin incorporating these into their plans, particularly where such investment might have significant funding issues or lead-in times.

Modelling of longer term infrastructure requirements to 2031 identifies the following costs for the three growth scenarios:

- High – £1.98 bn
- Medium – £1.64 bn
- Low – £1.25 bn

These costs do not include provision for affordable housing which could total an additional £0.75 bn under a High growth scenario.

Cambridgeshire Horizons will need to engage with utilities and other agencies to give focus to the issue of long term growth, and begin considering the potential implications of future growth on a consistent basis. This will need to take into account:

- Long term utility requirements – there is a clear requirement for the public sector to work with the utility companies and private sector developers to ensure that longer term spatial planning is better coordinated with utility provision.

- Demographic changes (e.g. the ageing population) and the impact this has on service provision
- Technological change (e.g. around health and telecommunications)
- The changing needs of the economy (e.g. around ICT infrastructure)
- Climate change and impacts on use of energy and water and indeed the impacts of the energy White Paper.
- The possible lifecycle investments needed in ageing distribution networks combined with need for additional growth-led capacity

1.1.4 The broader implementation framework

The challenge for the LTDP is not just about funding. The LTDP sets out an approach for delivering on a number of different fronts.

Governance

Recognising that although there has been recent agreement on a governance framework for the short-to-medium term, there are further changes in the wider local government environment flowing from the Lyons Review/Local Government White Paper, the onset of Strategic Commission, the increased role of LAAs and MAAs, Comprehensive Area Assessment, and the findings of the Sub-National Review.

All of these mean that there is a need to begin considering what the future delivery chain, governance and performance management framework will look like in the medium to long term, taking account of wider uncertainties. At the same, the potential for new structures/arrangements associated with local community and neighbourhood management will be embedded within new developments, and will need to function within the wider Strategic Commissioning environment.

Future Spatial Planning

Although the Structure Plan and emerging RSS provide the planning framework for the short-medium term, there will be an ongoing requirement to consider how the process of spatial planning for future growth will be managed, taking account of the Sub-National Review. In particular, there is a clear requirement to better embed implementation issues within the spatial planning process, so that critical infrastructure funding and delivery constraints can be considered alongside other technical and policy drivers. Although Cambridgeshire Horizons is not a strategic planning policy developer, it does have a delivery responsibility which makes it well placed to manage the input of infrastructure and delivery constraint issues into the regional planning process.

Responding to Policy Issues

Stakeholder consultation and workshop discussion during the process of developing the LTDP identified a number of policy issues with associated implementation implications:

- The need for sub-regional partners to take a leading role in embedding a response to climate change, and for Cambridgeshire Horizons to work with partners in implementation of practical responses to climate change within delivery of new proposals.
- The need to develop a shared evidence base on the demographic trends (e,g. around the ageing population, migration etc) underpinning future growth upon which service providers can develop their response.
- Ensuring that specific construction capacity issues, including around labour supply, construction efficiency, and procurement are properly understand in the sub-region, to ensure that what represents a significant scale of growth for a sub-region of this size (in a UK context) is capable of being delivered in a cost and quality conscious way.
- Ensuring that economic development objectives and housing growth are properly aligned in terms of both broader strategy, and practical measures such as construction training, local employment, and accessibility.

2. Introduction

2.1 Long Term Delivery Plan

Deloitte have been commissioned by Cambridgeshire Horizons to support them in preparing a Long Term Delivery Plan for the sustainable growth of the Cambridge sub-region. Linked to the economic success of the sub-region in recent decades and the wider objective to address problems of housing supply and affordability across the country, the Cambridge sub-region has been identified by Government as a focus for new housing development.

Growth on the scale proposed will have significant impacts upon a sub-region that is already heavily constrained by capacity issues. The purpose of this report is to explore resulting infrastructural requirements associated with defined housing requirements in the Cambridgeshire and Peterborough Joint Structure Plan (2001-2016), the East of England Plan (2001-2021)[1] and potential longer term requirements up to 2031. Specifically, in accordance with the brief, the report sets out:

> *"what infrastructure is required, when it is required, costs and mechanisms for funding and implementation, including long-term management. The report should assess options for funding, risks of non-delivery and implications for Government and its agencies, local authorities, Cambridgeshire Horizons, private sector developers and landowners, and other bodies with a role to play in implementing sustainable growth."*

The Long Term Delivery Plan explores the interrelationship between the components identified above under the following sections:

- Section 3 - Methodology;
- Section 4 – Delivering the Current Development Programme – setting out the infrastructure requirements associated with development to 2021
- Section 5 – Implications of longer term growth; and
- Section 6 – Critical long term delivery issues; and
- Section 7 – Conclusion.

2.2 The growth challenge

In February 2003, the then Office of the Deputy Prime Minister (ODPM) launched the Sustainable Communities Plan (Sustainable Communities: Building for the future) setting out a long-term programme of action for delivering sustainable communities in both urban and rural areas. The national plan aims to tackle housing supply issues in the South East, low demand in other parts of the country, and the quality of our public spaces.

It is well highlighted that the provision of new homes has failed to keep pace with the numbers of new households. The Sustainable Communities Plan, supported by more recent publications such as the Barker Review (March 2004), makes it clear that radical action is required to address long term housing needs which link inextricably with economic development and growth.

Figure 2.1: London – Stanstead – Cambridge – Peterborough Growth Area

[1] Otherwise referred to as the Regional Spatial Strategy (or RSS). Note that for the purposes of analysis and delivery planning this report refers to the Government's Proposed Changes to the Draft East of England Plan.

One of these measures has been the creation of four Growth Areas in the South East focused on:

- the Thames Gateway;
- Milton Keynes & South Midlands;
- London-Stansted-Cambridge-Peterborough; and
- Ashford.

Combined with London, the aim is for these areas to sustainably provide 200,000 additional homes above previously planned levels by 2016.

The London Stansted Cambridge Peterborough (LSCP) Growth Area runs from North London to the city of Peterborough. The area is expected to develop around 180,000 new homes between 2001 and 2016.

2.3 The Cambridge Sub-region

The economic success of the Cambridge sub-region, associated with the 'Cambridge Phenomenon', has made it one of the most attractive places to live and work in the UK and brought significant economic and associated population growth. However, growth brings pressures. The need for housing, not only for those working in the growth industries, but also those working in the service sector that supports growth, education and retirement, has become a major concern.

The sub-region is faced with the challenge of identifying and delivering the required infrastructure to support the growth agenda in the long term, which is the focus of this study. However, critically this challenge cannot be approached only from the perspective of implementation as it must be mindful of the need to:

- Deliver sustainable communities, where people want to live and work, now and in the future. According to the Department for Communities and Local Government, a sustainable community meets the diverse needs of existing and future residents, are sensitive to their environment, and contribute towards a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all; and
- Preserve the unique character of the City of Cambridge and its surrounding areas. The character of Cambridge is unlike any other cities internationally, with a reputation built on its historic past and urban form and a competitive advantage based on its academic eminence and reputation as a centre in the global knowledge economy. However, if not managed correctly, growth on the scale proposed to 2021 and beyond has the potential to significantly alter the dynamic of the city and sub-region.

2.3.1 Historic patterns of growth

In the past, a constrained supply of homes combined with high property prices has meant that people on lower incomes, and increasingly on average incomes, have found it hard to buy or rent the type of property that they need. Consequently, many people working in Cambridge have tended to move out of the city, to surrounding market towns and villages, to find affordable homes. Past planning policies sought to constrain the growth of Cambridge to preserve the city and encouraged growth in outer areas, leading to high levels of commuting from areas which could not be easily served by mass-transit systems. The result is traffic congestion, which not only affects the city itself, but also the surrounding area and significantly, motorways and trunk roads of national and international importance.

2.3.2 The context for future growth

Moving forward, further significant growth will take place in the sub-region. Within Cambridgeshire as a whole:

- The Joint Structure Plan makes provision for the delivery of 47,500 new dwellings between 2001 and 2016; and
- Under the proposed changes to The East of England Plan (or Regional Spatial Strategy) development of a minimum total of 73,300 dwellings is required between 2001 and 2021.

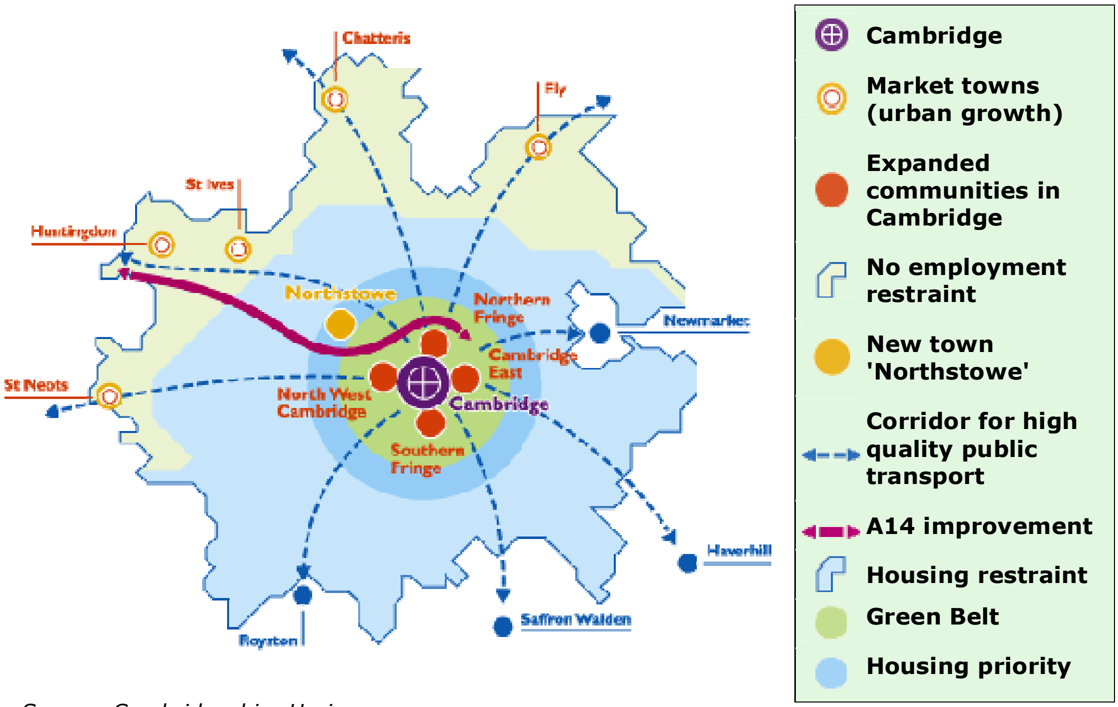
Based upon this quantum of development coming forward, investment in infrastructure will be essential, not only to support new developments, but also to address the requirements of a growing economy and to promote more sustainable and healthier lifestyles.

Beyond 2021 growth in the sub-region will not simply halt, but at the present time there exists no policy guidance as to required rates of growth after this period. One of the purpose of this delivery plan is to consider potential future growth rates, based on modelled scenarios, in order to understand at a strategic level what future infrastructural requirements may derive and associated critical delivery issues.

2.4 Delivering growth in the Cambridge sub-region

Cambridgeshire Horizons is the organisation established to drive forward the sustainable growth agenda in the sub-region, in accordance with approved development and infrastructure plans. Cambridgeshire Horizons is responsible for overseeing a detailed programme that covers the three broad strands of major developments, quality of life and strategic infrastructure. Cambridgeshire Horizons remit extends across the Cambridge sub-regional area which is defined in RPG6. It consists of Cambridge and the ring of market towns surrounding it, as identified in Figure 2.2 below.

Figure 2.2: Programme Map



Source: Cambridgeshire Horizons

2.4.1 Programmed Major Infrastructural Works

An essential pre-requisite for growth on the scale of that proposed for the Cambridge sub-region is the provision of necessary supporting infrastructure. This study will pay close regard to major infrastructural schemes already identified to support major growth, which include:

- A14 Ellington to Fen Ditton improvement – as recommended by the Cambridge to Huntingdon Multi Modal Study (CHUMMS) to reduce present and future transport problems along the A14 Corridor. The response from the public consultation is currently being anlaysed and an announcement on the preferred route will be made in Summer 2007. Scheme costs range from £600 to £700 million with the majority of funding coming from the Highways Agency supplemented by developer contributions where access to major schemes, such as Northstowe, is necessitated.

- Cambridgeshire Guided Busway – the Guided Busway will provide high quality, reliable and frequent local public transport along the A14 corridor. Buses will travel on a guideway along the disused railway line from St Ives to Cambridge. They will continue through Cambridge on normal roads and rejoin the guideway at Cambridge Railway Station to travel through to Addenbrooke's Hospital and Trumpington Park & Ride. The scheme will cost a total of

£116.2m to build with the Government providing £92.5m towards that cost and the remainder being drawn from developer contributions.

- A428 Caxton Common to Hardwick Improvement – a £55million scheme funded by the Highways Agency to upgrade this important strategic east-west link between Cambridge and Milton Keynes. These works are now complete.

However, these are just initial schemes. Significant further sub-regional requirements for infrastructure will derive from the five major developments and additional development identified above that will contribute towards meeting current and any future targets for new housing set by the Structure Plan and Regional Spatial Strategy. Sub-regional projects necessitated by proposed future development are a key element of this study and are identified and considered in Section 4.

2.4.2 Major Development Sites

The five major development sites identified for comprehensive development are:

- Northstowe – Northstowe will accommodate up to 10,000 new homes on the former Oakington Airfield and adjacent land near Longstanton, about 5 miles from the centre of Cambridge. Northstowe will be served by the Cambridgeshire Guided Busway to provide excellent public transport links to St Ives, Huntingdon and Cambridge city centre. Northstowe has been identified in the latest government Housing Green Paper as an 'eco-twon', intended to exploit the potential to create a complete new settlement to achieve zero carbon development and more sustainable living using the best new design and architecture;
- Southern Fringe – the village of Trumpington will be expanded by adding new neighbourhoods to the east and south of the village, up to a permitted site capacity of 4,030 homes. A new road is to be constructed to the south of Trumpington village to provide access to the new neighbourhoods and to serve a major expansion of Addenbrooke's Hospital (2020), which is being expanded as a regional and national centre of clinical excellence and biomedical research. The proposed Cambridgeshire Guided Busway from Huntingdon will serve both Addenbrooke's Hospital and the Trumpington Park and Ride site;
- Cambridge North West – two new residential areas are planned providing up to 3,680 new homes. Land between Madingley Road and Huntingdon Road will be developed by Cambridge University to meet its longer term needs for key worker housing, as well as providing additional faculty and research space to supplement land already being developed in West Cambridge. Land between Huntingdon Road and Histon Road will be developed to provide a new high-quality residential suburb.
- Cambridge East – the Cambridge East site is made up of the three areas of Cambridge Airport, North of Newmarket Road and North of Cherry Hinton which can together accommodate up to 12,000 new homes. The critical issue for opening up the site for development relates to the need to relocate the existing Cambridge Airport owned by Marshall Aerospace.
- Northern Fringe East – plans are for the development of up to 2,900 new homes on land comprising Chesterton Sidings and the existing Sewage Treatment Works that would require relocation.
- Existing major development is taking place at Cambourne, nine miles west of Cambridge. Three major housebuilders began construction on the site in 1998 with plans to develop a new community of over 3,000 homes for up to 10,000 people. The community will be self-contained and include a High Street and supermarket, schools and sports facilities, police and fire stations, a medical centre, open space and a major business park.

2.4.3 Additional development

Development across the sub-region is guided by the requirements of the Joint Structure Plan (up to 2016) and the Regional Spatial Strategy (up to 2021). Significant development will come forward on the five identified major development sites but there will be a requirement to meet additional demands on: sites < 100 and sites > 100, including the sub-regional market towns of Ely, Chatteris, St Ives, Huntingdon and St Neots.

3. Methodology

The methodology followed to prepare the Long Term Delivery Plan is outlined below:

Stage One – Baseline Assessment	
Document Review	Review of key sub-regional and regional policies and strategies (including the Joint Structure Plan and Regional Spatial Strategy). A full list of the documents reviewed can be found at Appendix A.
Project Matrix	Project matrices prepared for individual major development schemes to capture, in a systematic way, likely implementation requirements relating to: • Existing known dependencies • Existing known costs • Identify information gaps, either in terms of known infrastructure requirements or costs • Provide the basis for aggregation and programming as part of the Delivery Plan
Stakeholder Consultations	A consultation exercise was undertaken through face-to-face meetings and telephone interviews with key sub-regional and regional stakeholders. This included representatives from Cambridgeshire Horizons, the County, City and District Councils, the Learning and Skills Council (LSC), Primary Care Trust (PCT), East of England Development Agency (EEDA), East of England Regional Assembly (EERA), the Government Office for the East of England, Greater Cambridge Partnership and representatives from the private utilities sector (Anglian Water Group, EDF Energy and Virgin Media). A full schedule of interviewees can be seen at Appendix B.
Development Profiling	Through consultation with Cambridgeshire County Council's Strategic Planning Research and Monitoring team, development profiles for the five major development sites (up to 2031) and sites < and > 100 units (up to 2021) were modelled to enable the overall quantum of development coming forward in the Cambridge sub-region (in line with JSP and RSS targets) to be understood
Project Programmes	Project Programmes have been created to map development profiles for the major developments. Critically, the Project Programmes identify key social and physical infrastructure requirements relating to each of the major developments, illustrating trigger points and delivery timescales
Modelling long term trajectories	A high level analysis of the potential development profile beyond the current RSS period (up to 2021) was undertaken using three growth scenarios, modelling the potential quantum of development that could come forward between 2021 and 2031. Based on the identified development profile to 2021 and growth scenarios to 2031 it was possible to calculate potential implications on sub-regional population growth and subsequently map associated future infrastructural requirements
Stage Two – Workshop	
Following the collation of information undertaken as part of the Baseline Assessment, a Workshop was arranged to be attended by key sub-regional stakeholders. The Workshop acted not only as an information gathering exercise but as an opportunity to identify and communicate the key issues emerging from the Baseline Assessment and, critically, to explore longer term delivery issues post 2021. The findings from the Workshop strongly inform the analysis which follows.	
Stage Three – Delivery Plan	
What follows represents the drawing together of all the information gathered during Stages One and Two into a coordinated approach to consider long term delivery in the sub-region to 2031. A first draft of the Delivery Plan was produced for review by Cambridgeshire Horizons and its partners in April 2007. Additional information was required and obtained from Cambridgeshire Horizons in July and Agugust 2007, which has subsequently been incorporated into this Final Draft Report.	

4. Delivering the Current Development Programme

4.1 Introduction

This section reviews the current sub-regional development programme covering the period from present to 2021. Drawing upon the detailed development profiling information supplied by Cambridgeshire County Council, critical paths for the delivery of infrastructure are identified at:

- the sub-regional level;
- for the five major development sites; and
- for additional development (including sites > 100 and Market Towns).

Linked to development at each of the above scales, infrastructure requirements are then identified, costed and programmed, categorised under the following headings:

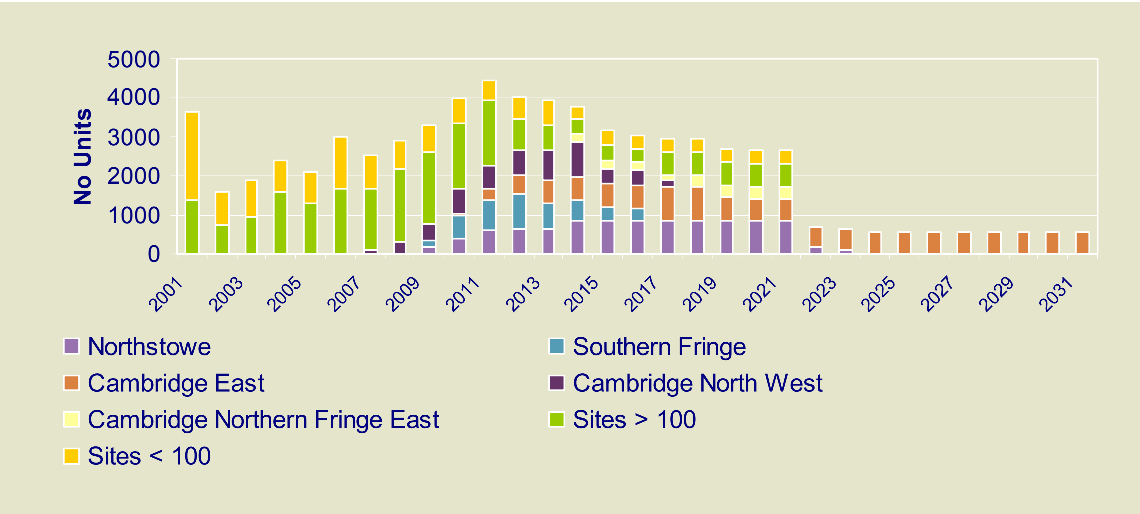
- Transport;
- Education;
- Community Facilities / Quality of Life;
- Health;
- Open Space & Recreation; and
- Utilities (including Waste)

This detail is captured in a series of Project Programmes which capture the overall infrastructure programme and costs related to delivering growth across the sub-region up to 2021.

4.2 Development Profile

Understanding the development profile for major and additional sites across the sub-region provides the basis for determining the requirements for and timing of infrastructure provision. Development profiles were understood through consultation with Cambridgeshire County Council's Strategic Planning, Environment & Community Services team who provided up to date data for the sub-region. Based on this information the graph below identifies:

- Development profiles for the five major development sites throughout their build periods; and
- Development profiles for sites < and > greater 100 units based on historic data up to 2006 and extrapolations up to 2021, sourcing intelligence relating to existing planning applications and potential development sites coming forward in the future.



NOTE: Modelling of the development profiles relates to proposed development within the Cambridge sub-region as opposed to Cambridgeshire as a whole. It is the sub-regional definition that is used for the purposes of this report incorporating Cambridge City and the Districts of South Cambridgeshire, parts of Huntingdonshire, East Cambridgeshire and part of Fenland. The extrapolation of data relating to sites < and > 100 has been calculated on this basis.

4.3 Project Programmes

The Project Programmes capture key information relating to required infrastructure at the sub-regional level, for the major development sites and for additional development (including sites > 100 and market towns). In particular, for each piece of social or physical infrastructure they identify:

- Total costs (£ million);
- The identified funding source (from the public or private sector and where this may be split);
- Where funding gaps currently exist;
- The certainty that funding will be forthcoming;
- Where upfront funding may be required through a potential rolling fund, or from sub-regional sources; and
- The timescale / programme for delivering the identified piece of infrastructure, and critical trigger points. This is based on information supplied to us and, where this is not available, our own assumptions.

The Project Programmes are informed by data provided to us by Cambridgeshire Horizons, The County and District Councils and other key stakeholders, in particular detail where projects are significantly advanced. Where this data has not been available, Deloitte has utilised standard benchmarks for infrastructure and based calculations accordingly on the quantum of development coming forward to determine likely infrastructure costs.

The infrastructure identified for each major development is based on sub-regional estimates. These do not represent the basis for s.106 negotiations on individual sites and should not be used as such. Local determination of planning applications will need to consider specific requirements that may not have been identified at this stage.

4.3.1 Sub-regional Strategic Infrastructure

The Project Programmes capture the main initiatives required to support the overall quantum of growth proposed across the sub-region up to 2021.

From a transport perspective these include the major schemes with funding already identified / committed, which are discussed in Section 2.4.1 (the A14 upgrade, Cambridgeshire Guided Busway and A428 Improvements). Additional transport requirements are currently being prepared as part of the Transport Innovation Fund (TIF) for Cambridge. TIF represents a Department for Transport initiative aimed at delivering long term transport solutions to those parts of the country experiencing the most significant growth and it is linked closely to economic development objectives. Cambridgeshire County Council has received funding to prepare a transport strategy for the sub-region to cover the period 2008-2014 to be used as the basis for sourcing funding for identified major schemes. It is anticipates that the strategy will be completed by September 2008. Key projects likely to be identified as part of the TIF strategy include:

- Segregated busways to promote access to the City via designated routes;
- Improvements to transport infrastructure within the City Centre;
- Extended / new Park & Ride sites and links;
- Environmental / Efficiency improvements, including zero carbon initiatives and Real Time Bus Information; and
- Ely Southern Bypass.

Significant further investment in transport infrastructure is also expected to be required through the Local Transport Plan, rail freight improvements funded by the Strategic Rail Authority and long term plans to upgrade the A428 to St. Neots (funded by the Department of Transport).

Additional significant investment will be required to support sub-regional infrastructure requirements relating to health, quality of life, open space and recreation and utilities:

- Health – Private Finance Initiative (PFI) schemes relating to the Addenbrooke's 2020 programme and Hinchinbrooke's will draw upon over £500 million of public sector funding;

- A regional events venue, as identified in the Arts and Culture Strategy. This has not been costed so a nominal £50m cost has been identified for the purposes of the LTDP. This would need to be reviewed based on more detailed feasibility study work.
- Open Space & Recreation – work by Cambridgeshire Horizons has identified the provision and costs associated with meeting these requirements up to 2021; and
- Utilities – indicative costs for meeting water, wastewater and sewerage, electricity, gas and telecommunication requirements to 2021 have been provided through service providers, and is based on information previously identified for Cambrdigeshire Horizons. Deloitte consulted with utility providers to validate these estimates. Whilst circumstances for individual utility providers will have moved on, and precise business plans changed, none of those consulted were able to share updated costs. Overall, none consulted were of the view that were significant utility challenges associated with the period to 2021, beyond those site specific issues already identified (e.g. Northern Fringe). Further feedback on longer term issues are outlined in Section 5.

4.3.2 Major Development Schemes

Northstowe

The 288 hectare site was acquired by English Partnerships (EP) from Defence Estates in 2006 and development of the site is being pursued through a Joint Venture with Gallagher Estates. The site is identified for development in the Cambridgeshire Structure Plan (2003) and in the draft planning policies of the South Cambridgeshire Local Development Framework. Northstowe was identified by the Government as an 'Eco Town' to take forward more sustainable approaches to new mixed use development.

South Cambridgeshire District Council has submitted its Local Development Framework (LDF) Core Strategy Development Plan Document (DPD) to the Government which contains policies and proposals for the development and use of land in the District for the period to 2016. These plans have been scrutinised by government Inspectors through a process known as the LDF Public Examination and allocations at Northstowe for up to 4,800 homes by 2016 and up to 10,000 homes in total are supported. The Core Strategy was approved on 25th January 2007.

South Cambridgeshire District Council has also drafted an Area Action Plan for Northstowe as part of its LDF. The plan sets the detailed policy framework and vision against which planning applications for Northstowe will be determined, identifies the mix of uses, infrastructure requirements and site boundaries. The Public Examination into this plan started in December 2006 and the outcome of these considerations is due to be published in a binding Inspector's report in May 2007. Indications from a statement released by the Inspectors are that Northstowe should maximise the development potential of the area with a target of 10,000 dwellings, the precise figure to be the result of Master Planning for the town.

An outline application has been submitted to South Cambridgeshire District Council and a full application is expected to follow jointly from EP and Gallagher's in October 2007.

Key infrastructural projects required to support the development include:

- A developer contribution towards interim works to the A14;
- New link roads to enable access to the development from the Dry Drayton and Bar Hill junctions (to be taken on as a developer cost);
- Developer contribution towards the Cambridgeshire Guided Busway;
- A Secondary School likely to be delivered in two phases (of 6FE followed by 10FE);
- Post 16 Educational provision;
- Six Primary Schools;
- A Health Campus, 'Civic Hub' community facility including a Lifelong Learning facility;
- Neighbourhood facilities; and
- Household Waste Recycling Centre.

Southern Fringe

The Cambridge Southern Fringe is identified for development in the Cambridgeshire Structure Plan (2003), the Cambridge City Local Plan (2006) and in the draft South Cambridgeshire Local Development Framework (LDF).

The majority of development proposed for the Southern Fringe site is within the Cambridge City boundary, identified within the 2006 Cambridge Local Plan which has been saved until 2009 as the new Local Development Framework for the City is brought forward.

Further development will take place within South Cambridgeshire on the former Monsanto site, south-west of Trumpington. Overall, the site known as Trumpington Meadows has been put forward for redevelopment to provide 1,200 homes and a 60 hectare country park between Trumpington and Hauxton Mill with 600 of these homes proposed to be within South Cambridgeshire. As identified above, South Cambridgeshire has already had its Core Strategy approved but has also drafted an Area Action Plan for the Southern Fringe which has been submitted to the Secretary of State. An examination to test the soundness of this document is to take place in June 2007.

Outline planning applications have been submitted covering development across the site (with the exception of Glebe Farm) which are to be determined in Autumn 2007.

Key infrastructural projects required to support the development include:

- Addenbrooke's Access Road to be delivered in two Phases;
- Developer contribution towards the Cambridgeshire Guided Busway;
- A Secondary School and two new Primary Schools with the expansion of a number of existing Primary Schools;
- A Community Facility and supporting local facilities; and
- Household Waste Recycling Centre.

Cambridge North West

North West Cambridge is identified for development in the Cambridgeshire Structure Plan (2003), the Cambridge City Local Plan (2006) and in the draft South Cambridgeshire Local Development Framework (LDF).

Given that the site falls across the boundaries of both Cambridge City and South Cambridgeshire, the two authorities are currently working closely together to produce a North West Area Action Plan which includes proposals to alter the green belt in order to facilitate development. Following due process it is anticipated that the AAP will be finally adopted by early 2009 in relation to land between Huntingdon Road and Madingley Road.

An outline planning application for land between Histon Road and Huntingdon Road was submitted by David Wilson Estates at the end of December 2006.

Key infrastructural projects required to support the development include:

- Road infrastructure and bus / cycle priorities;
- A Secondary School and two Primary Schools; and
- Household Waste Recycling Centre and major waste management facility (details to be confirmed).

Cambridge East

Cambridge East is identified for development in the Cambridgeshire Structure Plan (2003), the Cambridge City Local Plan (2006) and in the draft South Cambridgeshire Local Development Framework (LDF).

The site also straddles the boundary of Cambridge City and South Cambridgeshire District and the two authorities are co-operating to produce a Joint Cambridge East Area Action Plan to set the detailed planning framework against which applications will be judged. Following due process it is anticipated that final adoption will take place by the end of 2007.

Key infrastructural projects required to support the development include:

- Expenditure on transport infrastructure relating to Bus Rapid Transport, providing direct access to the City Centre and other locations, access improvements along Perne Road, Cherry Hinton

Access Road, ensuring sufficient highway capacity is available on the A14 corridor, plus additional access costs, including junctions onto Newmarket Road, Airport Way, Coldham's Land and Barnwell Road to allow access to the development;

- One or two Secondary Schools, new Primary Schools and a Lifelong Learning Centre;
- A community /recreation facility; and
- Household Waste Recycling Centre and major waste management facility (details to be confirmed).

Northern Fringe

The Cambridge Northern Fringe is identified for development in the Cambridgeshire Structure Plan (2003), the Cambridge City Local Plan (2006) and in the draft South Cambridgeshire Local Development Framework (LDF) due to be adopted by the end of 2007.

The critical issue for bringing forward development on the site relates to the need to relocate the existing sewage works in order to open up the site. Initial work has suggested that the costs associated with relocating the sewage works to an alternative site in the sub-region could run to £100 million. Further detailed investigative work is required to understand the feasibility of relocation within the context of overall development values.

Key infrastructural projects required to support the development include:

- Chesterton Station;
- Access and improved transport links to Chesterton Sidings; and
- A Primary School and Lifelong Learning Centre and developer contributions to support the expansion of the existing Secondary School.

SUB-REGIONAL STRATEGIC INFRASTRUCTURE (TO 2021)	Total Cost £m	Funding identified / source £m		Funding Certainty	
Transport: Existing					
Growth Area Delivery Grant	11.6	11.6		G	Spent
Integrated Transport Block and Major Schemes	68.1	68.1		G	Spent
A14 Upgrade	700.0	700.0	DFT	G	Awaiting outcome of Final Consultation
A428 Caxton Common to Hardwick	55.0	55.0	DfT	G	Spent
Cambridgeshire Guided Busway	116.2	116.2	DFT	G	Total scheme cost £116.2m (£92.5m DfT): Remainder apportioned between Northstowe & Southern Fringe
Papworth Everard Bypass	8.7	8.7		G	Spent / Committed
Segregated Busways within Cambridgeshire	140.0	140.0	TIF	R	Subject to TIF
Cambridge City Centre Public Transport Infrastructure	58.3	58.3	TIF	R	Subject to TIF
Extended / new and links to Park & Ride sites	160.0	160.0	TIF	R	Subject to TIF
Environmental / Efficiency Improvements	60.0	60.0	TIF	R	Subject to TIF
Ely Southern Bypass	33.0	33.0	TIF	R	Subject to TIF
Other Local Road Improvements & Transport	100.0	100.0	LTP	R	Subject to LTP
Rail Investment	20.0	20.0	SRA	R	Long term investment required
A428 Caxton to St. Neots (inc. improvements to Black Cat r-about)	330.0	330.0	DFT	R	Long term scheme
	1781.2				
Education					
County-wide S106 contributions	17			G	Spent
Additional Further Education Funding Requirements:					
Northstowe	2.7	2.7	Developer Contribution	A	Subject to developer negotiations
Southern Fringe	1.3	1.3	Developer Contribution	A	Subject to developer negotiations
Cambridge NW	1.4	1.4	Developer Contribution	A	Subject to developer negotiations
Cambridge East	3.6	3.6	Developer Contribution	A	Subject to developer negotiations
Northern Fringe	0.5	0.5	Developer Contribution	A	Subject to developer negotiations
Additional Development	4.7	4.7	Developer Contribution	A	Subject to developer negotiations
Total Additional Sub-Regional FE Funding Requirement	**14.2**				
	31.2				
Community Facilities					
Regional Events Venue	50	50.0		R	Long term scheme
	50				
Health					
Addenbrooke's Trust Capital programme	214.2	214.2	PCT	A	Subject to PCT funding programme (£69.8 spent 2000-06)
Addenbrooke's PFI funding	196.7	196.7	PCT	A	Subject to PCT funding programme (£30 spent 2000-06)
Addenbrooke's - funding undetermined	23.0	23.0	PCT	A	Subject to PCT funding programme
Hinchingbrooke Trust Capital / PFI funding	69.2	69.2	PCT	A	Subject to PCT funding programme (£29.3 spent 2000-06)
Hinchingbrooke - funding undetermined	9.5	9.5	PCT	A	Subject to PCT funding programme
Other - county-wide	8	8.0	PCT	G	Spent
	520.6				
Open Space & Recreation					
Community Stadium	12.0	12.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Ice Rink	6.0	6.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Rowing Lake	16.0	16.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
50m Pool	10.0	10.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Gymnastics Centre	2.0	2.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Martial Arts	0.5	0.5	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
8 Courts Hall	2.5	2.5	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Indoor Tennis	2.2	2.2	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Indoor Cricket	1.2	1.2	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Equestrian Centre	1.0	1.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Water Sports	0.4	0.4	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
Indoor Bowls	1.0	1.0	Developer contibution / Additional funding source	A	Subject to developer negotiations / Identification of additional funding sources
	54.8				
Utilities (inc Waste)					
Water	120	120.0		A	Subject to utility companies Business Planning
Wastewater & Sewerage	30	30.0		A	Subject to utility companies Business Planning
Electricity	120	120.0		A	Subject to utility companies Business Planning
Gas	2	2.0		A	Subject to utility companies Business Planning
Telecoms	0	0.0		A	Subject to utility companies Business Planning
Waste & Recycling PFI Credits	35	35.0		A	
Waste & Recycling Additional Capital	45.5	45.5		A	
	352.5				
TOTAL	**2790.3**				

NORTHSTOWE	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Development Profile			150	400	600	650	650	850	850	850	850	850	850	850	850	150	100								
Cumulative Build Rate			150	550	1150	1800	2450	3300	4150	5000	5850	6700	7550	8400	9250	9400	9500								

NORTHSTOWE	Total Costs £m	Funding identified / source £m		Funding Certainty		
Transport						
A14 Permanent Works contribution	20.0	20.0	Developer Contribution	A	Subject to developer negotiations	
Link Roads Contribution: Dry Drayton Junction	69.0	69.0	CCC / Developer negotiations ongoing	A	CCC / Developer negotiations ongoing - Likely to be taken on as a development cost (outside S106 agreement)	Providing access to the site from the A14
Bar Hill Junction						Providing access to the site from the A14
Distributor Road C	10.0	10.0	Developer Contribution	A	Subject to developer negotiations	
Distributor Road D	5.0	5.0	Developer Contribution	A	Subject to developer negotiations	
Cambridgeshire Guided Busway	116.2	11.3	Developer Contribution	G	Total scheme cost £116.2m (£92.5m DfT): Remainder apportioned between Northstowe & Southern Fringe	
Cambridgeshire Guided Busway: Service Provision	3.0	3.0	Developer Contribution	A	Subject to developer negotiations	Revenue contribution towards initial running costs (Tapered over 5yr period)
Contribution towards conventional bus services	2.2	2.2	Developer Contribution	A	Subject to developer negotiations	Revenue contribution towards initial running costs (Tapered over 5yr period)
Additional Transport Obligations	5.0	5.0	Developer Contribution	A	Subject to developer negotiations	
Countryside Access via Rights of Way	2.0	2.0	Developer Contribution	A	Subject to developer negotiations	
	127.5					
Education						
Further Education Facility	NA	NA			Additional work to be undertaken by LSC - finding likely to be sub-regional	Phase 1: 6 FE (Trigger 1,000 units) Phase 2: 4FE
Secondary School	40.0	40.0	Developer Contribution	A	Subject to developer negotiations	
Primary School One	6.8	6.8	Developer Contribution	A	Subject to developer negotiations	Trigger 100 units for Schools One and Two
Primary School Two	6.8	6.8	Developer Contribution	A	Subject to developer negotiations	
Primary School Three	6.8	6.8	Developer Contribution	A	Subject to developer negotiations	Trigger 3,200 units
Primary School Four	6.8	6.8	Developer Contribution	A	Subject to developer negotiations	Trigger 4,800 units
Primary School Five	6.8	6.8	Developer Contribution	A	Subject to developer negotiations	Trigger 6,400 units
Primary School Six	6.8	6.8	Developer Contribution	A	Subject to developer negotiations	Trigger 8,000 units
	80.8					
Community Facilities - Civic Hub						Ph2. 1,800 units Ph3. 3,600 units Ph4. 5,400 units Ph5. 7,300 units
Health Campus	6.2	6.2	Developer Contribution	A	Subject to developer negotiations	Overall delivery of Health Campus as key element of Civic Hub to be determined
Library & Lifelong Learning Centre	9.3	9.3	Developer Contribution	A	Subject to developer negotiations	
Community Facilities - Other						
Emergency Services (Joint Facility)	4.2	4.2	Developer Contribution	A	Subject to developer negotiations	Trigger 2,500 units
Additional Community Obligations	2.0	2.0	Developer Contribution	A	Subject to developer negotiations	
	21.7					
Open Space & Recreation						
Open Space, Playing Fields & Eqipped Play Areas	32.0	32.0	Developer Contribution	A	Subject to developer negotiations / May form part of Commuted Sum for Development Trust	
	32.0					
Utilities (inc. Waste)						
Household Waste Recycling Centre	2.0	2.0	Developer Contribution	A	Subject to developer negotiations	Trigger 1,000 units
Addition Waste Obligations	3.0	3.0	Developer Contribution	A	Subject to developer negotiations	
Water	15.0	15.0	Developer Contribution	A	Subject to developer negotiations	
	20.0					
TOTAL	**282.0**					

Indicative Build Pe Indicative Build Period — Build Period / Trigger Point Uncertainties — Ideentified / Assumed Trigger Points — Revenue Expenditure

SOUTHERN FRINGE	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Development Profile																									
Bell site / Addenbrooke's				100	125	125																			
Clay Farm / Show Ground, Glebe Farm			200	350	375	425	400	400	250	200															
Trumpington Meadows (City)		134	276	340																					
Trumpington Meadows (South Cambs)					130	130	100	90																	
Annual Build Rate		0	200	584	776	890	630	530	350	290															
Cumulative Build Rate		0	200	784	1560	2450	3080	3610	3960	4250															

SOUTHERN FRINGE	Total Cost £m	Funding identified / source £m	Funding Certainty	
Transport				
Addenbrooke's Access Road: Phase 1 (Hauxton Road Shelford Road)	6.0	6.0 GAF / Developer	G Works commenced	
Addenbrooke's Access Road: Phase 2 (Shelford Road to Addenbrooke's Hospital)	12.0	12.0 GAF / Developer	A Awaiting funding approval - repaid by developer	
Cambridgeshire Guided Busway	116.2	10.4 Developer Contribution	A Total scheme cost £116.2m (£92.5m DfT): Remainder apportioned between Northstowe & Southern Fringe	
Cambridgeshire Guided Busway: Service Provision	1.5	1.5 Developer Contribution	A Subject to developer negotiations	Revenue contribution towards initial running costs (Tapered over 5yr period)
Contibution towards conventional bus services	1.6	1.6 Developer Contribution	A Subject to developer negotiations	Revenue contribution towards initial running costs (Tapered over 5yr period)
Physical infrastructure links to external walking, cycling, equestrian	1.3	1.3 Developer Contribution	A Subject to developer negotiations	
Countryside Access via Rights of Way	1.3	1.3 Developer Contribution	A Subject to developer negotiations	
	34.1			
Education				
Additional Further Education funding	4.0	4.0 Developer Contribution	A Additional work to be undertaken by LSC - finding likely to be sub-regional	
Secondary School	21.8	19.5 Developer Contribution	A Subject to developer negotiations / CCC - based on 5/8 apportionment given cross cutting provision	Trigger 1,000 - 1,500 units; Build costs could be less - identified funding gap of £5-12.5m - subject to review of Secondary School provision (6FE or 8FE)
Secondary School - expansion of Netherall School	0.5	0.5 Developer Contribution	A Subject to developer negotiations	Linked to development of Bell site
Primary School - expansion of Queen Edith's	0.5	0.5 Developer Contribution	A Subject to developer negotiations	Linked to development of Bell site
Nursery - expansion of Homerton Nursery	0.3	0.3 Developer Contribution	A Subject to developer negotiations	Linked to development of Bell site
Primary School - expansion of Fawcett School (inc. Children's Centre)	2.5	2.5 Developer Contribution	A Subject to developer negotiations	Trigger 300 units / Linked to development of Clay Farm
Children's Centre (linked with Fawcett School)	1.3	1.3 Developer Contribution	A Subject to developer negotiations	Linked with Fawcett School
Primary School - Showground	5.5	5.5 Developer Contribution	A Subject to developer negotiations	Trigger 1,000 units / Linked to development of Showground
Primary School - Trumpington Meadows	5.5	5.5 Developer Contribution	A Subject to developer negotiations	Trigger 100 units (at Trumpington Meadows)
	41.9			
Community Facilities				
Community Facility at CPDC / Clay Farm: Health Centre	3.0	3.0 Developer Contribution	A Subject to developer negotiations	Permanent Health Facility (as part of Community Centre) required by 600 units
Community Facility	4.0	4.0 Developer Contribution	A Subject to developer negotiations	Location of Community Facility to be determined
Additional New Youth Facility	1.0	1.0 Developer Contribution	A Subject to developer negotiations	Location to be determined (Cambridge City Council/CCC/PCT)
Community Facility at Trumpington Meadows	0.6	0.6 Developer Contribution	A Subject to developer negotiations	Associated with development of Primary School
Additional Community Facilities Obligations	1.0	1.0 Developer Contribution	A Subject to developer negotiations	
	9.6			
Health				
Expansion of temporary facility - Trumpington Village Branch Surgery	0.0	0.0 Developer Contribution	A Subject to developer negotiations	Required by 200 units at Trumpington Meadows
Expansion of existing Health Facility at Queen Ediths and/or Cornford House	0.9	0.3 Developer Contribution	A Subject to developer negotiations	Linked to Bell School site
	0.9			
Open Space & Recreation				
Open Space, Playing Fields & Eqipped Play Areas	13.4	13.4 Developer Contribution	A Subject to developer negotiations	Landscape & Open Space strategy - Hobson's Brook green corridor and Trumpington Meadows country park
	13.4			
Utilities (inc. Waste)				
Household Waste Recycling Centre	1.9	1.9 Developer Contribution	A Subject to developer negotiations	Trigger 1,000 units
Additional Waste Obligations	0.1	0.1 Developer Contribution	A Subject to developer negotiations	
	2.0			
TOTAL	**101.8**			

Indicative Build Pe Indicative Build Period — Build Period / Trigger Point Uncertainties — Ideentified / Assumed Trigger Points — Revenue Expenditure

CAMBRIDGE NORTH WEST	Total Cost £m	Funding identified / source £m	Funding Certainty	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Development Profile																												
Huntingdon / Histon Road						100	350	350	350	350	280																	
Huntingdon / Madingley Road							0	50	200	400	600	400	400	0	0	0												
Arbury Camp					300	300	300	200	100																			
Annual Build Rate					300	400	650	600	650	750	880	400	400	200	0	0												
Cumulative Build Rate					300	700	1350	1950	2600	3350	4230	4630	5030	5230	5230	5230												
Transport																												
Road Infrastructure & Bus / Cycle Priorities	10.0	10.0 Developer Contribution	A Subject to developer negotiations																									
Physical infrastructure links to external walking, cycling, equestrian	1.5	1.5 Developer Contribution	A Subject to developer negotiations																									
Countryside access via Rights of Way	2.0	2.0 Developer Contribution	A Subject to developer negotiations																									
	13.5																											
Education																												
Further Education Facility	NA	NA Developer Contribution	Additional work to be undertaken by LSC - finding likely to be sub-regional																									
Secondary School	32.0	32.0 Developer Contribution	A Subject to developer negotiations				Phased development required given build period to 2019?																					
Primary School - Huntingdon / Histon Road	5.5	5.5 Developer Contribution	A Subject to developer negotiations			Trigger 100 units - to serve upfront development																						
Primary School - Huntingdon / Madingley Road	5.5	5.5 Developer Contribution	A Subject to developer negotiations							Delivered after 2,300 units to serve extended build profile to 2019 for Huntingdon / Madingley Road																		
	43.0																											
Community Facilities																												
Community / Recreation Facilities - Various (Including Emergency Services)	5.4	5.4 Developer Contribution	A Subject to developer negotiations																									
	5.4																											
Health																												
Facilities required	5.0	5.0 Not identified	R Cambridgeshire PCT reviewing options														PCT considering delivery options - impacts on delivering phasing											
Health: Total	5.0																											
Open Space & Recreation																												
Open Space, Playing Fields & Eqipped Play Areas	6.5	6.5 Developer Contribution	A Subject to developer negotiations																									
	6.5																											
Utilities (inc. Waste)																												
Household Waste Recycling Centre	2.0	2.0 Developer Contribution	A Subject to developer negotiations					Trigger 1,000 units																				
Additional Waste Obligations	0.4	0.4 Developer Contribution	A Subject to developer negotiations																									
	2.4																											
TOTAL	**75.8**																											

Indicative Build Pe Indicative Build Period — Build Period / Trigger Point Uncertainties — Identified / Assumed Trigger Points — Revenue Expenditure

Deloitte.

CAMBRIDGE EAST	Total Cost £m	Funding identified / source £m		Funding Certainty	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Development Profile																													
North of Newmarket Road								50	200	300	300	300	300	300															
Cambridge Airport															540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
North of Cherry Hinton									100	150	300	300	300	300	300	300													
Annual Build Rate								50	300	450	600	600	600	600	840	840	590	540	540	540	540	540	540	540	540	540	540	540	540
Cumulative Build Rate								50	350	800	1400	2000	2600	3200	4040	4880	5470	6010	6550	7090	7630	8170	8710	9250	9790	10330	10870	11410	11950
Transport																													
Cambridge Busway	60.0	60.0	TIF	R Subject to TIF																									
Perne Road	42.0	25.0	TIF	R Subject to TIF																									
Cherry Hinton Access Road	5.0	5.0	Developer Contribution	A Subject to developer negotiations																									
New interchange on A14 replacing Fen Ditton interchange linked to Airport Way	11.0	11.0	Developer Contribution	A Subject to developer negotiations																									
Cambridge East Access Costs	20.0	20.0	Developer Contribution	A Subject to developer negotiations																									
Physical infrastructure links to external walking, cycling, equestrian	5.0	5.0	Developer Contribution	A Subject to developer negotiations																									
Countryside access via Rights of Way	6.0	6.0	Developer Contribution	A Subject to developer negotiations																									
	149.0																												
Education																													
Further Education facility	NA	NA	Developer Contribution	Additional work to be undertaken by LSC - finding likely to be sub-regional																									
Secondary School	33.0	33.0	Developer Contribution	A Subject to developer negotiations							Trigger 1,000 units																		
Primary School - North of Newmarket Road	5.0	5.0	Developer Contribution	A Subject to developer negotiations					Trigger 100 units (North of Newmarket Road)																				
Primary School - North of Cherry Hinton	3.2	3.2	Developer Contribution	A Subject to developer negotiations						Trigger 100 units (North of Cherry Hinton)																			
Primary School - Cambridge Airport	15.0	15.0	Developer Contribution	A Subject to developer negotiations												Trigger 1,000 units (Cambridge Airport - as for Northstowe)													
Lifeling Learning Centre	2.7	2.7	Developer Contribution	A Subject to developer negotiations	Temporary facility / existing library facilities											Trigger 4,000 units for new / permanent facility													
	58.9																												
Community Facilities																													
Community / Recreation Facilities - Various (Including Emergency Services)	13.8	13.8	Developer Contribution	A Subject to developer negotiations																									
	13.8																												
Health																													
Facilities required	12.0	12.0	Developer Contribution	A Subject to developer negotiations				Health Campus required - PCT determine																					
	12.0																												
Open Space & Recreation																													
Open Space, Playing Fields & Eqipped Play Areas	12.0	12.0	Developer Contribution	A Subject to developer negotiations																									
	12.0																												
Utilities (inc. Waste)																													
Household Waste Recycling Centre	5.0	5.0	Developer Contribution	A Subject to developer negotiations							Trigger 1,000 units																		
Additional Waste Obligations	1.0	1.0	Developer Contribution	A Subject to developer negotiations																									
	6.0																												
TOTAL	**251.7**																												

Indicative Build Period — Build Period / Trigger Point Uncertainties — Identified / Assumed Trigger Points — Revenue Expenditure

NORTHERN FRINGE EAST	Total Cost £m	Funding identified / source £m		Funding Certainty
Development Profile				
Sewage Works				
Chesterton Sidings				
Annual Build Rate				
Cumulative Build Rate				
Transport				
Chesterton Station	25.0	25.0	TIF	R Subject to TIF
Chesterton Sidings: Access road and improved transport links	15.0	15.0	TIF	R Subject to TIF
Physical infrastructure links to external walking, cycling, equestrian	0.8	0.8	Developer Contribution	A Subject to developer negotiations
Countryside access via Rights of Way	1.0	1.0	Developer Contribution	A Subject to developer negotiations
	41.8			
Education				
Further Education facility	NA	NA	Developer Contribution	A Additional work to be undertaken by LSC - finding likely to be sub-regional
Secondary School - expansion of Manor Community College	10.0	10.0	Developer Contribution	A Subject to developer negotiations
Primary School - new build Chesterton	5.0	5.0	Developer Contribution	A Subject to developer negotiations
Lifeling Learning Centre	1.0	1.0	Developer Contribution	A Subject to developer negotiations
	16.0			
Community Facilities				
ommunity / Recreation Facilities - Various (Including Emergency Services)	3.0	3.0	Developer Contribution	A Subject to developer negotiations
	3.0			
Health				
Facilities required	2.2	2.2	Developer Contribution	A Subject to developer negotiations
	2.2			
Open Space & Recreation				
Open Space, Playing Fields & Eqipped Play Areas	3.0	3.0	Developer Contribution	A Subject to developer negotiations
	3.0			
Utilities (inc. Waste)				
Waste Obligations	1.1	1.1	Developer Contribution	A Subject to developer negotiations
Relocation of Sewage Works	88.0	88.0	Absorbed as development cost?	R Awaiting Feasibility Study
	89.1			
TOTAL	**155.1**			

NORTHERN FRINGE EAST	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Sewage Works										0	100	300	300	300	300										
Chesterton Sidings								200	200	200															
Annual Build Rate								**200**	**200**	**200**	**100**	**300**	**300**	**300**	**300**										
Cumulative Build Rate								200	400	600	700	1000	1300	1600	1900										
Secondary School - expansion of Manor Community College													Trigger 1,000 units												
Primary School - new build Chesterton									Trigger 100 units																

Indicative Build Period — Build Period / Trigger Point Uncertainties — Ideentified / Assumed Trigger Points — Revenue Expenditure

4.3.3 Additional Development

In addition to development being brought forward across the five major development schemes, significant additional development will also take place across the sub-region between now and 2001. Analysis of the development profile data informing this study shows that remaining housing development will be focused primarily on:

- Sites > 100 units where in the region of 6,235 new dwellings could be delivered between now and 2021; and
- Market Towns where up to 8,000 new dwellings could be delivered between now and 2021.

Further development will also take place on sites of less than 100 units but in accordance with the brief the headline implications for this growth are not considered as part of the study.

Sites > 100 units

Headline costs prepared by Deloitte identify that the delivery of 6,235 new dwellings across the sub-region on sites < 100 units could require capital expenditure of over £100 million, to be met largely through private sector contributions. The costs can be broken down as follows:

SITES > 100 (2007-2021)	
Total Development Proposed	**6,235**
Transport	12.0
Education	64.0
Community Facilities / Quality of Life	7.0
Health	6.3
Open Space & Recreation	9.0
Utilities (inc. Waste)	3.0
TOTAL (£m)	**101.3**

Market Towns

Significant development has already occurred within the sub-region's market towns, with the further 8,000 units expected to come forward between now and 2021. The remaining development can be broken down as follows:

- Ely (East Cambridgeshire) – a further 1,950 units to be delivered by 2021 (of a total 3,450 units between 2001 and 2021);
- Chatteris (Fenland) – a further 1,050 units to be delivered by 2021 (of a total 1,450 units between 2001 and 2021);
- St Ives (Huntingdonshire) – a further 350 units to be delivered by 2021 (of a total 450 units between 2001 and 2021);
- Huntingdon (Huntingdonshire) – a further 3,150 units to be delivered by 2021 (of a total 3,800 units between 2001 and 2021); and
- St. Neots (Huntingdonshire) – a further 1,500 units to be delivered by 2021 (of a total 2,350 units between 2001 and 2021).

High level cost estimates prepared by Deloitte indicate that to deliver the physical and social infrastructure required to support the delivery of the 8,000 units required across the sub-regional market towns could total approximately £160 million in capital expenditure, to be met primarily by the private sector. These costs can be broken down as follows:

MARKET TOWNS (2007-2021)	
Total Development Proposed	8,000
Transport	50.0
Education	78.5
Community Facilities / Quality of Life	9.2
Health	8.0
Open Space & Recreation	11.2
Utilities (inc. Waste)	4.0
TOTAL (£m)	160.9

It is clear from these estimates that costs relating to development in an individual market town of, say 2,000 units, could be in the region of £40 million. Defining costs precisely is difficult given the high level nature of the information relating to the overall quantum of development proposed within individual market towns at this stage given that:

- The £50 million figure identified for transport relates to an overall cost supplied by Cambridgeshire County Council covering rural transport schemes across all market towns. The Council's transport plans are not yet sufficiently advanced to detail requirements on the basis of individual sites / market towns;
- By definition, the rural location of a market town necessitates educational requirements to be considered on the basis of the quantum and timing of development coming forward on individual sites within market towns. In each case, the location of any new schools required and issues of apportionment will need to be considered based on existing provision within defined catchment areas; and
- There may be local issues relating to utility provision for individual sites / market towns as a result of rural locations. Consequently, where cost estimates for utilities have been made, provision is not included for potential additional costs related to servicing individual sites. These will need to be considered through utility providers on the basis of development coming forward on individual sites / market towns within the context of service providers business planning cycles.

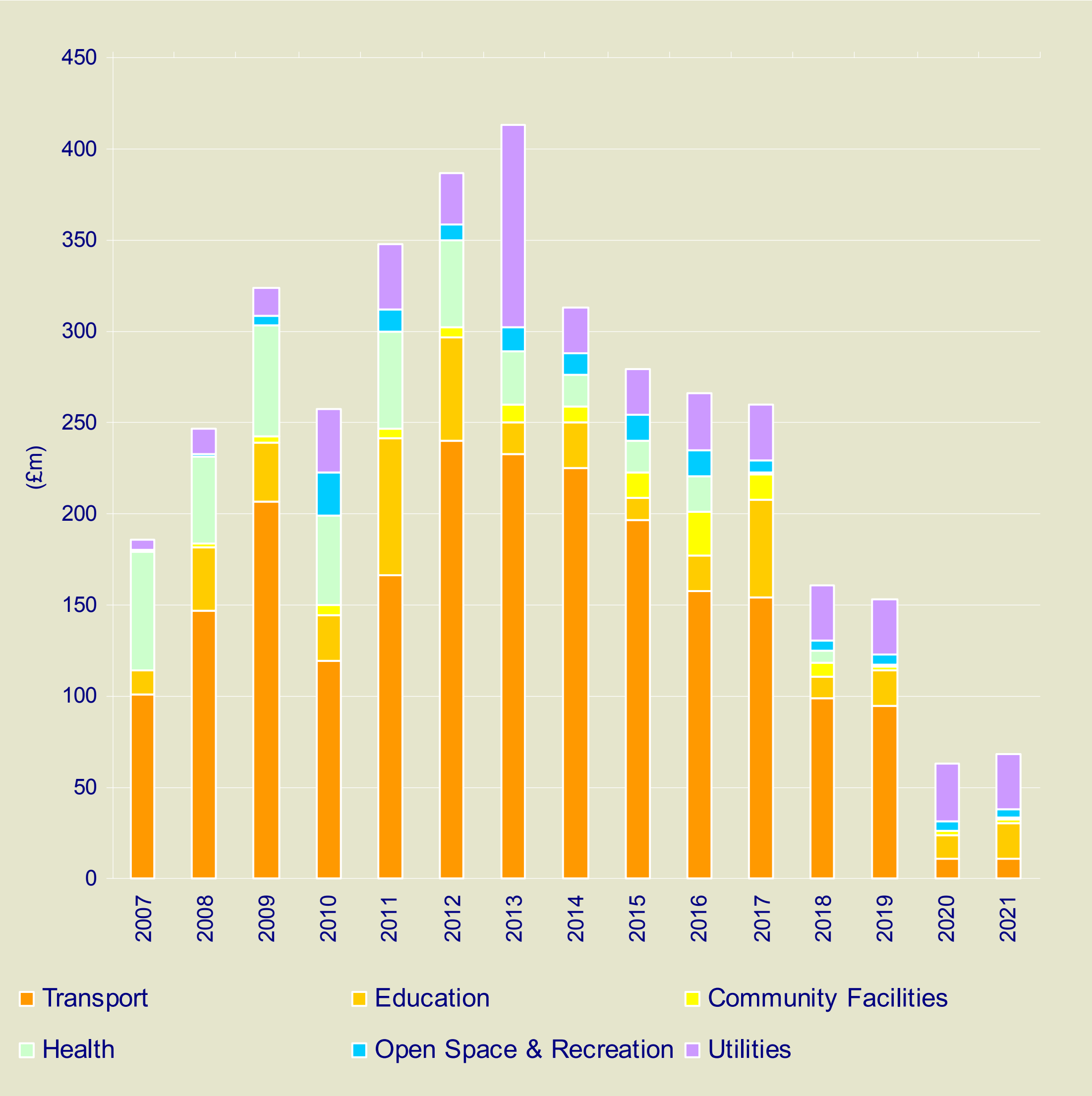
4.4 Total Infrastructure Programme

Drawing together total infrastructure costs relating to sub-regional projects, major development sites and additional development forward allows gross headline costs to be understood for delivering the growth agenda to 2021.

TOTAL INFRASTRUCTURE PROGRAMME									
	Sub-Regional Strategic Infrastructure	Northstowe	Southern Fringe	Cambridge NW	Cambridge East	Northern Fringe East	Additional Development		TOTAL (By Requirement) (£m)
							Sites > 100	Market Towns	
Total Development Proposed	-	9500	3847	4680	11950	2200	6,235	8,000	
Transport	1860.9	116.2	32.6	13.5	149.0	41.8	12.0	50.0	2276.0
Education	31.2	80.8	41.9	43.0	58.9	16.0	64.0	78.5	414.3
Community Facilities / Quality of Life	0.0	15.5	9.6	5.4	13.8	3.0	7.0	9.2	63.4
Health	520.6	6.2	0.4	5.0	12.0	2.2	6.3	8.0	560.6
Open Space & Recreation	54.8	32.0	13.4	6.5	12.0	3.0	9.0	11.2	141.9
Utilities (inc. Waste)	352.5	20.0	2.0	2.4	6.0	89.1	3.0	4.0	478.9
TOTAL (By Site) (£m)	**2820.0**	**270.7**	**99.8**	**75.8**	**251.7**	**155.1**	**101.3**	**160.9**	**3935.1**

NOTE: Utility infrastructure costs draw upon figures provided to Cambridgeshire Horizons. It is not possible to test these figures without undertaking technical analysis. These figures have not been updated or tested as part of this study and should therefore be treated with a degree of caution.

The costs that inform this summary are broken down and budgeted by year in detail at Appendix C. The graph below provides an illustration of costs grouped by requirement and when they arise. It identifies the significant costs relating to transport infrastructure and the fact that they drop off significantly after 2014 reflects the fact that the A14 will have been completed and much of the additional transportation infrastructure is programmed for the potential TIF period, which also completes at this point. It also reflects the initial period whereby one would expect to see the demand for transportation infrastructure required to release the development potential of sites. It is not possible to ascertain at this stage what future funding programmes may come forward under future Governments.



4.4.1 Affordable Housing

The analysis contained above does not include provision for affordable housing, given that requirements across the sub-region and for each site are still being determined. It is understood that a Sub-Regional Housing Market Assessment is being prepared and the South Cambridgeshire District Council Inspector's Report regarding allocations with regard to individual sites is expected to be published by May 2007.

For the purposes of estimating funding requirements Deloitte have used the following assumptions:

- The development profile indicates that between 2007 and 2021 a total of just under 40,000 homes could be delivered across the sub-region on the major development sites and on sites > 100 units (including market towns);

- Sub-regional affordable housing requirements will be up to circa 40% of total provision, equating to c. 16,000 affordable units;
- Recent work by the Housing Corporation as part of the National Affordable Housing Programme (NAHP) has benchmarked the costs of social rented and low cost housing. For the East of England of, an average total build cost per unit of £80,000 has been identified. Of this total amount, the typical grant per unit from the Housing Corporation is approximately 50% (or £40,000), with the balance made up from Section 106 contributions, RSL financing and other sources.

On this basis, the total affordable housing contributions required to deliver 40,000 affordable units could amount to:

- From the Housing Corporation/Communities England/New Homes Agency (in whatever format its successor takes) - £640 million
- From developer contributions (assuming £20,000 contribution per unit) - £320 million

In addition to the total infrastructure costs of £3.76 billion identified above, affordable housing contributions from both the Housing Corporation and private sector developer contributions could equate to an additional £1 billion cost.

The Cambridge Housing Challenge, discussed later in this document, is part of the approach to bringing the investment forward on the three strategic sites currently at more advanced stages. Its combination of a strategic partner and longer term funding commitments through NAHP should enable a firmer platform for affordable housing provision. However, this does not cover other sites.

5. Implications of Longer Term Growth

5.1 Introduction

The overall quantum of development and associated infrastructure requirements to be delivered across the sub-region up to 2021 are defined above. Beyond 2021 no policy basis exists for the future provision of housing although it can be assumed that delivery will not cease in this year.

To look beyond 2021 a high level modelling exercise, using three growth scenarios, has been undertaken in order to identify the potential quantum of development that could continue to come forward between 2021 and 2031. It has then been possible, based on the identified development profile to 2021 and the growth scenarios to 2031, to calculate the potential implications on sub-regional population growth in order that future infrastructural requirements can be understood. Whilst it is important to look ahead towards growth beyond the current policy period, especially given the pressure for growth (as set out in the Recent Housing Green Paper), it should be highlighted that the considerations of this Long Term Delivery focus upon the requirements to meet the allocated growth agenda up to 2021.

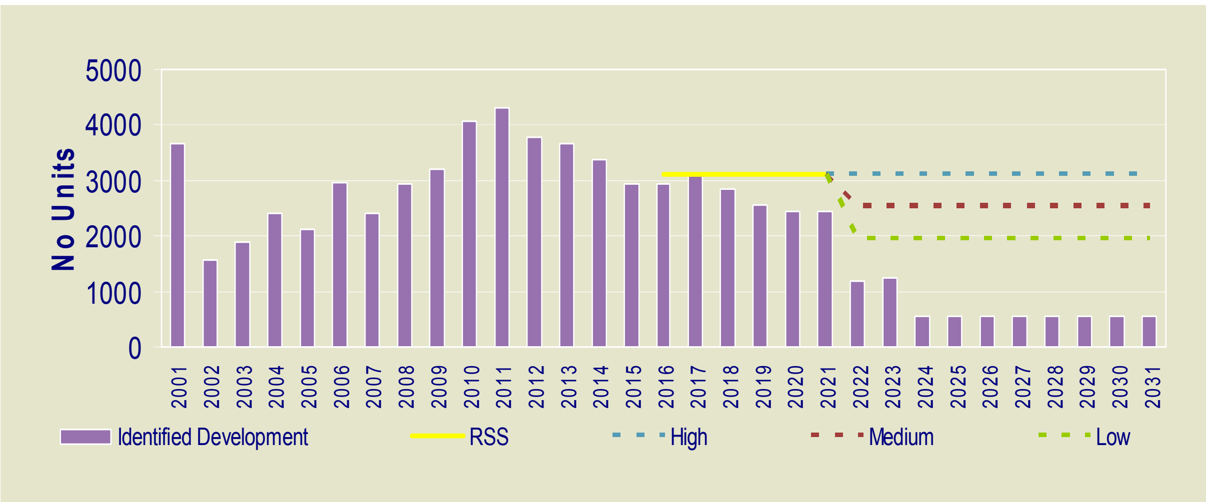
Beyond this period, the three growth scenarios considered for the period 2021 to 2031 are:

- High – assuming that development continues at the current proposed annual rate (assumed to be 3,115 across the sub-region);
- Medium – assuming that development continues at a rate midpoint between current RSS levels and past rates (in the absence of major developments occurring); and
- Low – assuming that build rates continue at past rates (in the absence of major development occurring).

5.2 Future development quantum

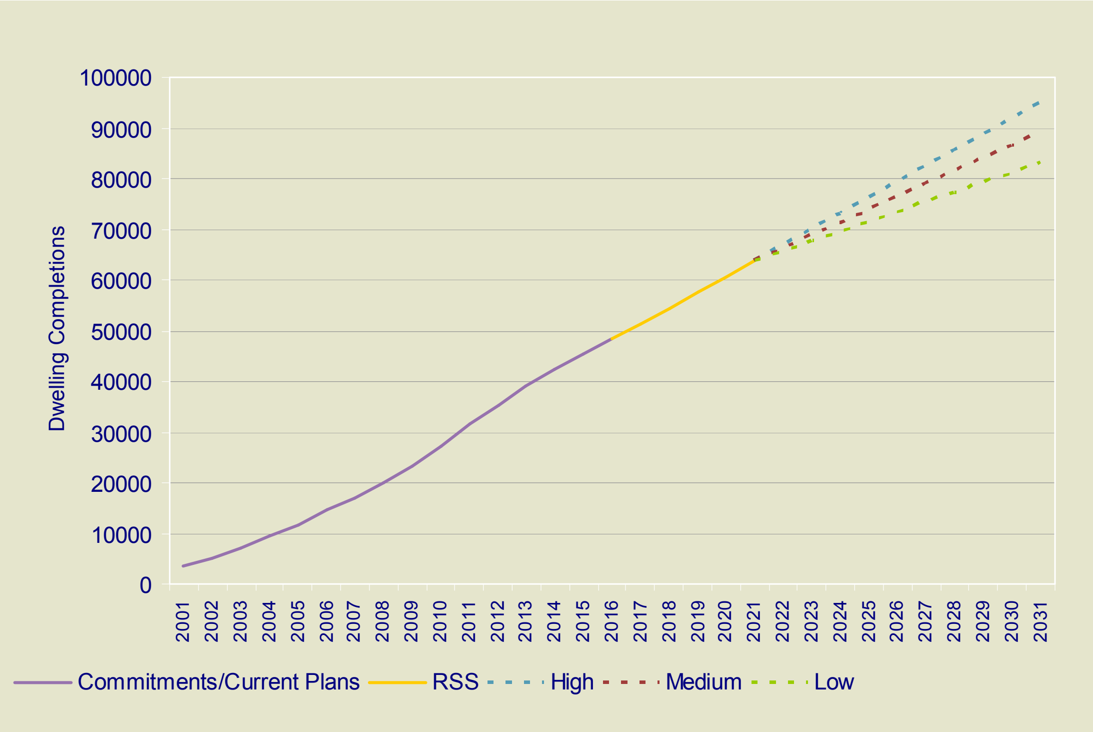
The results of this modelling exercise are identified in the graph below which highlights:

- The overall quantum of development that will be delivered within the sub-region on identified major development sites and sites < and > 100 up to 2021 (purple bars);
- RSS requirements between 2016 and 2021 (yellow line) – the 'gap' on the graph between the identified development profile for 2016 to 2021 and RSS requirements reflects the proposed change made by the Government which have increased the annual average requirement for dwelling completions in Cambridge City from 735 to 950;and
- Potential future housing requirements under the High (blue dashed lined), Medium (maroon dashed line) and Low (green dashed line) growth scenarios.



5.3 Future population growth

Based on the identified development profile to 2021 and the High, Medium and Low growth scenarios to 2031, the implications for additional sub-regional population growth have been calculated using ONS projections for household size (extrapolated beyond 2026). The findings of this analysis are identified below.



FUTURE POPULATION GROWTH (2001-2021)						
	Baseline Population 2001	2001-2016	2016-2021	2021-2031	2001-2031	% Population increase
High	417,800	106,135	31,712	63,485	201,332	48
Medium	417,800	106,135	31,712	51,083	188,930	45
Low	417,800	106,135	31,712	38,537	176,384	42

The analysis identifies that:

- Under a High growth scenario, the population of the Cambridge sub-region could increase by 201,332 between 2001 and 2031 – a 48% increase on the 2001 baseline population;
- Under a Medium growth scenario, the population could increase by 188,930 between 2001 and 2031 – a 45% increase; and
- Even for the Low growth scenario, the population could increase by 176,384 between 2001 and 2031 – a 42% increase.

5.4 Longer term infrastructure requirements

Modelling of the longer term infrastructure requirements to support sub-regional growth identifies that:

- Under a High growth scenario, which assumes continued growth between 2021 and 2031 at current proposed RSS rates of 3,115 units per annum, the total costs of delivering supporting infrastructure could be just short of £2bn in today's prices;
- Under a Medium growth scenario, the total costs of delivering supporting infrastructure could exceed £1.6 billion; and
- Even for the Low growth scenario, total costs could still be around £1.25 billion.

	HIGH	MEDIUM	LOW
	(@ 3,115 units pa)	(@ 2,530 units pa)	(@ 1,938 units pa)
Potential Development Quantum	**31,150**	**25,300**	**19,380**
Transport	1115.0	920.0	690.0
Education	350.0	300.0	240.0
Community Facilities / Quality of Life	36.0	30.0	22.0
Health	31.0	25.0	19.0
Open Space & Recreation	50.0	40.0	31.0
Utilities (inc. Waste)	400.0	320.0	250.0
TOTAL	**1982.0**	**1635.0**	**1252.0**

The assumptions driving the identified costs are considered below: Details of all benchmarked data and assumptions can be provided by Deloitte.

- Transport costs are based on the extrapolation of identified transport requirements / costs up to 2021 and reflective of the numbers of units coming forward under the three growth scenarios. These costs are mindful of the fact that further major transport infrastructure projects would be required to support any additional growth. There are no plans or commitments, but a number of possible infrastructure requirements might exist, including::
    - Long term plans to upgrade the trunk road network; and
    - improvements to the rail network, such as the possible East West Rail Link, to respond to factors identified by Network Rail, such as:
        - the doubling of demand between Cambridge and London since 1996, which is likely to increase further given employment growth in both London and Cambridge
        - the Cambridge guided bus project which is likely to bring increased numbers of passengers from outlying areas to interchange at Cambridge station; and
        - growing demand between the regional centres of Norwich, Cambridge and Ipswich.
    - Other, more innovative engineering solutions within the sub-region to increase capacity on road, rail, and bus corridors, including ways to address Cambridge's historic urban fabric, whilst recognising its role as a transport hub.
- Education requirements have been calculated using benchmarked data for which identifies requirements and build costs for Secondary and Primary Schools based on dwelling completions and population increases. Further Education costs are based on estimates defined by the LSC. For the period from now until 2021 there is uncertainty as to whether a Higher Education facility will be required and this is currently under review by the LSC, For the purposes of growth beyond 2021 education requirements incorporate additional costs associated with an FE facilities as it is likely that such a facility would be required whether growth occurred in accordance with the High, Medium or Low growth scenario.
- Costs relating to Community Facilities / Quality of Life have been calculated using benchmarked data which cost requirements based on the number of units delivered.
- Health costs have been determined using benchmark data based on the need for primary care facilities (those are facilities that play a central role in the local community, such as family doctors (GPs), pharmacists, dentists and midwives). Costs do not include the potential long term need for major new hospital facilities – the pattern of health care may have changed significantly from currently (just as it has over the past 25 years) but clearly if additional capacity was required this would be a major additional cost.
- Open Space and Recreation requirements are calculated using benchmarked data for the provision of local community facilities. Further provision is also made to include sub-regional

facilities over and above those already identified by work undertaken by Cambridgeshire Horizons.

- To understand future infrastructure requirments, Deloitte undertook consultations with key utility providers.
    - In terms of water supply and waste management, consultees explained that long term planning at the regional level was underway and that the key issues emerging from this work related to:
    - Water supply was not considered to be a major concern due to the nature by which it is supplied; being able to be sourced and moved around from areas around the country;
    - Dealing with waste water can be more problematic as it must be dealt with on a more local basis. To understand how it can be addressed requires knowledge of spatial pattern of development in order to understand where capacity exists and how it can be made within in existing water courses. This requires close liason with the Environment Agency and it is essential that spatial planning correlates with the emerging Water cycle strategy. Utility companies are actively engaging in the production of the WCS;
    - The key issues therefore for providers is to understand of where and when development will be coming forward. Housing targets are believed to be realistic in terms of supply and waste water treatment as long as spatial and water cycle planning are developed together effectively;
    - In terms financing water supply and waste water infrastructure, this was not considered to be problematic in the long term. Local infrastructure relating to individual development sites is paid for by the developers themselves with downline infrastructure funded through bill payers, agreed through OFWAT. Work to understand the costs of future provision is underway but again, clarity is needed as to where and when development will occur. Consultees were unable to share cost information with us at this stage; and
    - There are wider policy issues that need to be considered within the wider frameworkof water supply and waste water management. These relate, for example, to water efficiency in new home design and strategic surface water management. It is considered that the sub-region should be aspiring to make water a positive influence in development rather that a “problem” to be managed. A good example is considered to be the Marston Vale Surface Water Strategy, which has encouraged landholders, developers and planners to devise a lasting solution, generating a diverse array of benefits including increased amenity and conservation value for the management of flood risk and surface water drainage in the Vale.
- Given the constraints surrounding private sector utility service provider’s ability to plan for long term change and share costs, requirements have been calculated based on the extrapolation of infrastructure costs identified to support growth to 2021.
- Consultations were undertaken with media providers to understand the implications of providing such infrastructure to new developments. Any local infrastructure provision would require developer support but no problems were foreseen in overall infrastructure provision.
- Further consultations were attempted with energy providers but feedback was -not available from consultees. It is understood from separate for a that the key challenge is unlikely to be associated with energy supply to housing. Rather there can be constraints in supply to economic activities, where take-up can be uncertain. The model used by the East Kent Development Company to de-risk energy supply infrastructure might be a solution in this regard.

5.4.1 Affordable Housing

These figures do not include provision for delivering affordable housing. Using the same assumptions for calculating affordable housing requirements / costs as detailed above, delivering required levels of affordable housing could represent the following additional costs:

AFFORDABLE HOUSING PROVISION				
Growth Scenario	Affordable Units Required (@ 40%)	Cost (£m)		
		Housing Corp.	Private Sector	**Total**
High	12460	500	250	**750**
Medium	10120	405	203	**608**
Low	7753	310	155	**465**

Assuming therefore, that growth were to continue beyond 2021 in line with the High growth scenario, total supporting infrastructure costs could total £2 billion plus an additional £0.75 billion in relation to contributions from the public and private sector to support affordable housing.

5.5 Key issues for long term growth

The above analysis considers the technicalities of delivering long term growth and records the high level cost implications for doing so. However, this must be considered within the context of long term sustainability in order to understand if the sub-region can accommodate proposed growth and if so, how can this be best achieved. A framework for taking these forward is set out in Section 8.

6. Funding Future Growth

6.1 Introduction

Although there are a wide range of challenges for the sub-region in bringing forward the infrastructure needed to support the development targets set by the Structure Plan/RSS (and any growth beyond), undoubtedly the single biggest barrier to overcome is that of securing sufficient financial resources. The work set out in Section 4 defined an estimated total cost of £3.75 bn. Whilst there are mechanisms in place to fund much of this, there are also significant issues to address.

This section of the LTDP sets a framework for considering these issues under the following headings:

- Context
- Rolling Fund
- Planning Obligations
- Local Government Funding

6.2 Current Funding Position

The infrastructure costs of £3.985 billion (excluding affordable housing requirements) represents a significant challenge for the sub-region. Some of these costs do represent investment that would in any case be needed to accommodate (at least in part) latent demand, and to renew and improve the quality of infrastructure. Across the globe, Government's are facing similar challenges bridging this infrastructure gap. However, a very significant proportion of the £3.985 billion represents the infrastructure needed to support and release new development planned across the sub-region.

Expenditure Breakdown						
	Spent	Committed Funding	Anticipated Funding	Potential Dev Cont	Future Funding Requiremen t	TOTAL
Transport	95.20	169.10	1,200.00	2,17.64	593.30	2,275.24
Education	17.00	-	2.30	394.98	-	414.28
Community Facilities	-	-	-	63.43	50.00	113.43
Health	138.85	190.50	160.50	39.65	32.50	562.00
Open Space & Recreation	-	-	-	141.85	-	141.85
Utilities	-	-	35.00	355.90	88.00	478.90
	251.05	359.60	1,397.80	1,213.45	763.80	**3,985.70**

There has already been substantial progress made in meeting these infrastructure costs:

- There has, since 2000, already been investment of over £250m in infrastructure identified in the LTDP.
- A further, £359m of funding has already been committed by various public sector agencies (including circa £170m on transport).
- A further £1.397bn of funding is expected to come forward through the public sector (relating primarily to works to the A14 and A428 Caxton to St. Neots, and health investment summarised below). Additional transport requirements will need to be met through Cambridgeshire County Council's Local Transport Plan (LTP) and developer contributions to open up local access to development sites; Although there are no commitments, it is a reasonable planning assumption that these investments will follow.

Accordingly, a significant proportion of infrastructure costs (circa one third of the requirement from 2006 onwards) will be met through planning obligations under s.106 of the Planning Act (and, when in place, any future PGS mechanism) and the sub-region has an excellent track record of using the planning system to capture land value in this way. It is identified that up to £1.213 bn of infrastructure funding may be drawn through developer contributions. However, there are two issues:

- Deloitte have not been party to initial valuation work which we are aware has been undertaken on some of the major development sites. This suggests that, at the time of valuation (prior to granting of planning permission), the estimated land value uplift is not sufficient to meet the full costs of infrastructure required. At the same time, particularly on large developments, the costs and values of development will change over time, and as such, it is likely that some land value uplift will not be captured. The potential developer contributions identified in this report are subject to the application of planning guidance and principles and have not been tested against the potential development viability for individual sites. Sensitivity analysis has been undertaken below to test the effect upon the future funding requirements should there be a variance in developer contributions, and is shown below.

Expenditure Breakdown: Sensitivity Analysis		
	Potential Dev Contribution (£m)	**Future Funding Requirement (£m)**
Current Assumption	1,397.8	763.8
10% reduction in Developer Contributions	1,258.02	903.6
25% reduction in Developer Contributions	1,048.35	1,113.3

- in some cases, the up-front costs of infrastructure need to be met before there is any realisable value from development that it serves, creating cash flow challenges.

So, it is clear that there may be a real challenge in securing the private sector investment a) in the quantities required; and b) at the time infrastructure costs need to be met. Public sector investment is needed to respond to this, but there is recognition that smarter ways of investment are required. In response to this, one of the approaches that has been developed to address this is the concept of the Rolling Fund. The rolling fund is a mechanism by which the sub-region could use initial public money to pump prime or forward-fund major infrastructure schemes, in situations where the anticipated public / private funding for the scheme will not be available in full at the time when the infrastructure is needed to support planned development. The cost of the capital investment is subsequently recovered (either in full or partially) from public and private sector funding streams (e.g. s.106 agreement) as they come forward and development values are realised.

Finally, there are clearly a range of funding mechanisms for the public sector to deliver infrastructure. But there is expected to be growing financial constraints arising from the Comprehensive Spending Review 07, and the year-on-year increases seen in previous years will not continue. There will therefore be a growing pressure for local authorities and other agencies to consider other funding mechanisms and efficiency gains, as well as better use of mechanisms for PPP. These issues are considered in Section 7.

In light of this context, this section of the LTDP considers these issues and sets out a strategic approach for the sub-region. Clearly, implementation will be a matter for individual authorities and agencies, but there appears to be merit in taking a sub-regional approach given the way in which much of the necessary infrastructure has a strong sub-regional dimension.

6.3 Rolling Fund

6.3.1 What is a rolling fund?

The primary purpose of the rolling fund would be to facilitate the timely provision of sub-regionally significant infrastructure that supports the delivery of planned growth. Although in-principle support has been secured for the concept, the precise terms of reference and mechanism for the operation of a rolling fund has yet to be agreed with Government so there are still a number of different ways in which it might operate, and choices that can be made by the relevant partners. The LTDP seeks to provide a framework for relevant choices to be made.

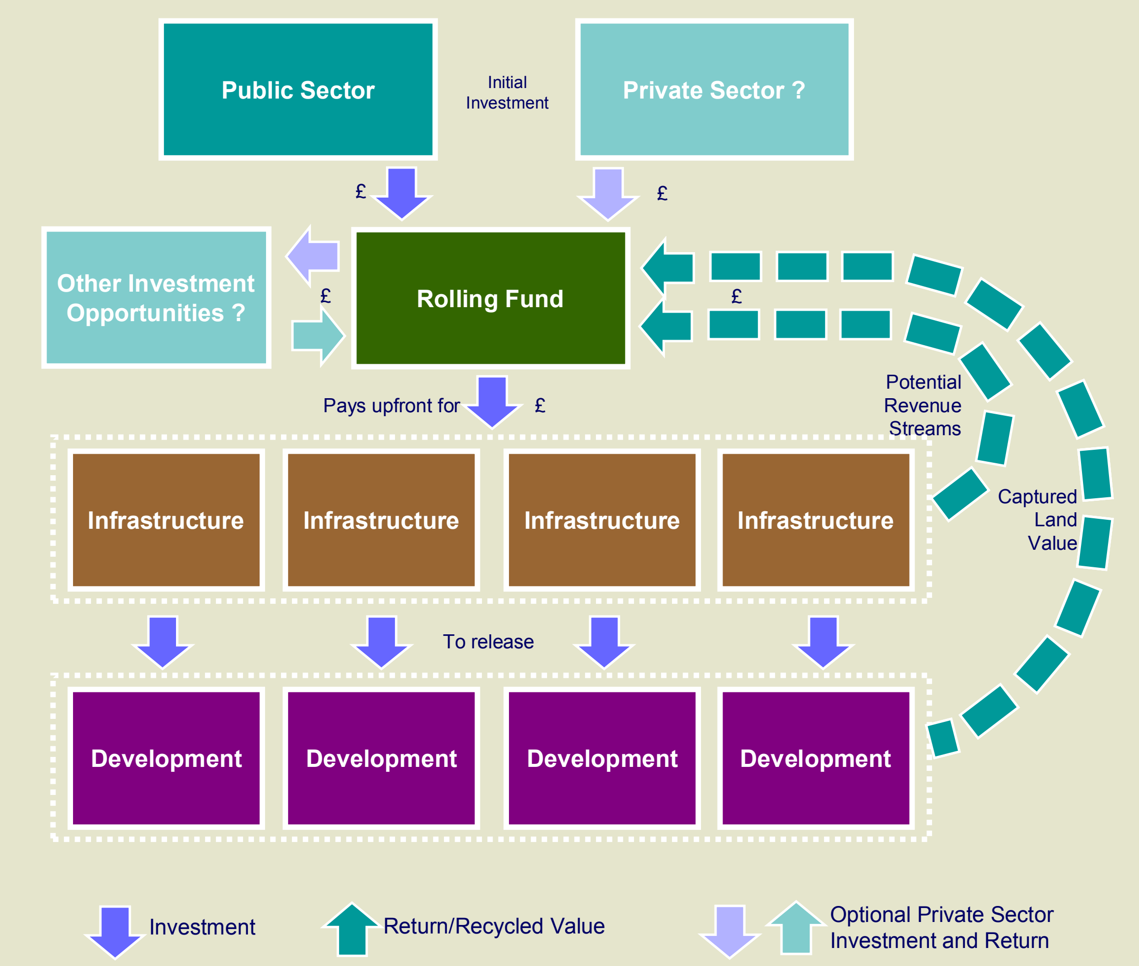
The basic concept for the Rolling Fund is for public sector investment into upfront infrastructure to be delivered via a Rolling Fund, which is also the repository for value that is generated by:

- developments that are released/enabled/served by the infrastructure; and/possibly,
- revenue streams from the infrastructure.

There is also a theoretical potential for the Rolling Fund to be a Public:Private model which might also have additional investment opportunities, generating other sources of return. However, this is by no means guaranteed, and would have a range of impacts on its operation and priorities that might make it unsuitable. Private sector investment in the rolling fund itself should therefore not be automatically assumed and will require significant further investigation..

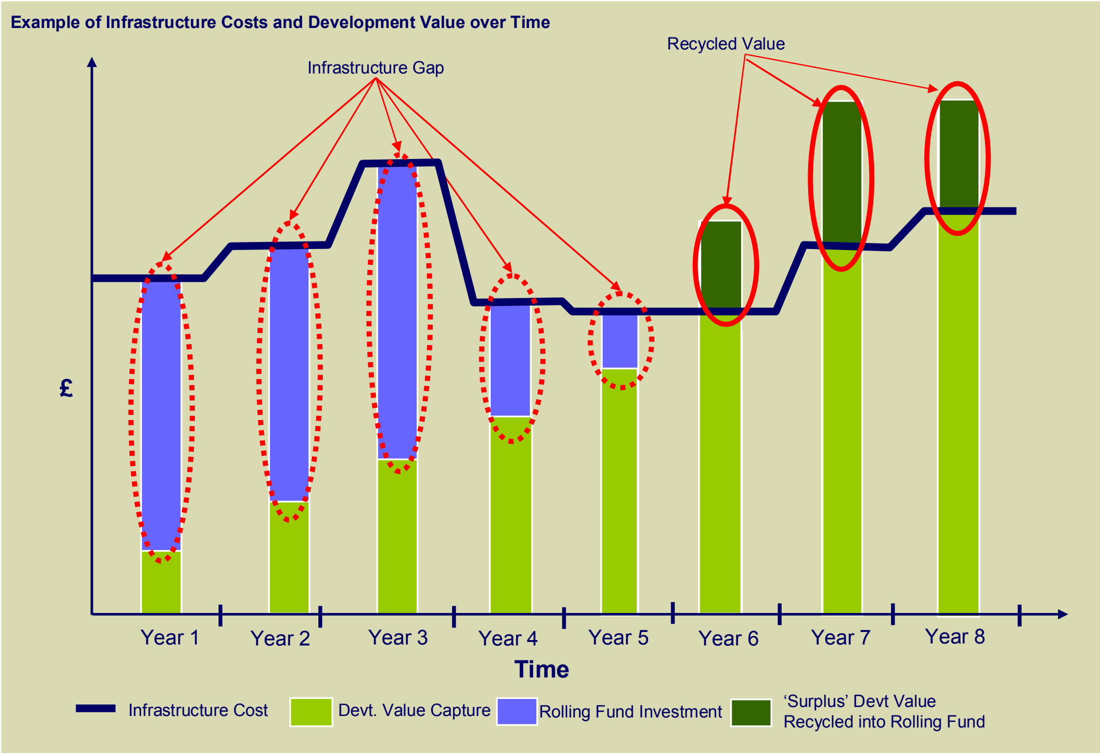
The basic concept is shown on the diagram below.

Rolling Fund Concept



Ultimately, the benefits of the Rolling Fund are into the medium to long term, flowing from the principal timing challenge, whereby the costs of much infrastructure is upfront and the value released on development does not emerge until later in the day, even if there is certainty on how much value can be generated. Thus, in initial years, when the costs of infrastructure exceed by some margin the potential uplift in land value that could reasonably be captured, requiring an underwriting of cost by the public sector, whilst in later years, when more development value is generated, the 'surplus' in any one year feeds back into the rolling fund for future investment.

A very much simplified example of how this might look over a period on a development is shown below.



In other words, the Rolling Fund acts as a 'gap' funding mechanism during the early years when total infrastructure costs are greater than the value extracted through s.106 from individual schemes, but as development gathers pace and value capture increases, the 'surplus' is 'top-sliced' and recycled back into the Rolling Fund for it to deliver further infrastructure investment, potentially to bring forward other developments. Within the sub-region, the LTDP work has identified the following projects in which a Rolling Fund could play a key delivery role:

- Where significant upfront investment is required to construct access roads into major development sites to enable housing construction to commence. As is the case with the distributor roads at Northstowe, the Addenbrooke's access road to serve the Southern Fringe and access costs for Cambridge East;
- If it is identified that developer contributions are required to support the development of a Higher Education facility to serve the sub-region (awaiting outcome of LSC review); and
- Significant costs relating to the provision of Secondary and Primary Schools on major development sites where trigger points necessitate that design, planning and development must commence prior to housing construction commencing. This is the case at Northstowe and on the Southern Fringe.

Cambridgeshire Horizons has already considered how a Rolling Fund might be taken forward in principle for the Southern Fringe and Northstowe:

- On the Southern Fringe, £6 million has already been committed through the GAF 2 bidding process to fund the construction of the first phase of the Addenbrooke's Access Road which is due to be completed by March 2008. Phase 2 will take 18 months to complete with costs split over two financial years. If funding were to be guaranteed now then construction could begin in Autumn 2007with completion n 2009. The cost of the second phase including the purchase of essential properties is currently estimated as being £16M and spend over the contract period would be relatively even with some £8M being spent in 2007/08 and the remaining £8M in 2008/09. Letting the construction of the road as a single package will save cost overall.
- For Northstowe, the Fund could be used to meet the cost of providing the distributor roads C and D. The current costs of the roads and associated busway works are estimated to be £15M i.e. with Road C costing £5M in 2009/10 and 2010/11 and Road D costing £4M in 2009/10 and £1M in 2010/11.

The financial flows for these projects is considered below:

Year	Expenditure (£m)	Income (re-coupment of S.106 monies) (£m)
2007-08	8	-
2008-09	8	-
2009-10	9	-
2010-11	6	-
2011-12	-	8
2012-13	-	8
2013-14	-	8
2014-15	-	7
TOTAL	**31**	**31**

Source: Cambridgeshire Horizons

The financial flows demonstrated how, in principle how the Rolling Fund could work. It is interesting to note that the income being recouped from years 2011-12 onwards could be rolled on to fund identified projects coming forward after this date such as the need to construct a new interchange on the A14, replacing the existing interchange at Fen Ditton linked to Airport Way, to enable access to the Cambridge East site. Identified costs for these works are £11 million but they could be significantly higher.

Whilst the basic principle is straightforward, there are a number of operational and policy issues that need to be considered, and this should be a real focus of Cambridgeshire Horizons work over coming months. These issues are:

- Role and Function
- Control and Governance
- Potential for the Private Sector
- Accounting and Legal Issues
- Key Risks

6.3.2 Role and Function

Although the basic purpose of the fund (to fund infrastructure) is established. There are a series of potential roles to consider:

- The extent of its ability to invest in or underwrite/de-risk any type or size of infrastructure, which may or may be linked to any development, including those 'big ticket' items that are either
    - demonstrably sub-regional in scope and purpose; or
    - benefit/or are required by more than one site; or
    - specifically incapable of being funded by one particular development
- Its ability to provide a 'ring master' role coordinating the funding of infrastructure that serves multiple sites that are coming forward with different timescales.
- The Rolling Fund could operate as an investment fund for speculative ventures such as land assembly for the purposes of both or either maximising return (and hence ability to make future investment) or to deliver specific infrastructure projects. This might entail the Fund holding assets for or on behalf of its financial backers, that might include the local authorities and other agencies.
- The Rolling Fund could act as a 'Holding Fund' that then invests into either PPP or other delivery vehicles, or it could be a delivery vehicle able to procure and deliver itself?
- The Rolling Fund could have the potential to serve as an investment vehicle for other projects and programmes including TIF (if successful) and to receive income under other programmes

- The Rolling Fund could operate on a genuinely sub-regional basis with a pooling of resources and investment decisions so that cross-boundary funding flows can occur (i.e. s.106 income from a development in one authority could be used to deliver infrastructure in another as part of a sub-regional strategy).
- The Rolling Fund risks could invest in a way that risks are offset by guaranteed future revenue streams and be more attractive for delivery e.g. capital investment in roads coupled with user charging.

Clearly, not all of these may be appropriate and it is, ultimately, a matter of judgement for the relevant stakeholders as to what roles the Fund should take on. Roles could also evolve over time, potentially as circumstances change.

Initial funding, and future public sector funding input will need to be confirmed and is subject to conditions. It could emerge through a variety of sources, including mainstream Central Government funding:

- Growth Area Funding
- Community Infrastructure Fund
- the Transport Innovation Fund (if awarded) and the potential to recycle any potential revenues created through a road charging scheme
- Housing Corporation funding, which will impact on the programme for delivering affordable and social housing. Through the Cambridge Challenge, funding rounds will extend to a 5 year period though there is as yet no confirmation on funding levels

Electoral and Spending Review cycles mean that long term programming for Central Government funding is rarely possible.

6.3.3 Control & Governance

Critical to the success of any Rolling Fund will be how it is controlled and governed. As a fund that will be operating across a number of fairly complex schemes, there will be a wide range of challenging operational issues to resolve in order to maintain its effectiveness. These include:

- Adopting the appropriate governance arrangements in order to satisfy public sector financial requirements, including the need for transparency and demonstrating value for money;
- Determining who will act as the accountable body and what governance issues this will impose.
- Identifying how resources would be drawn down for infrastructure into and then from the Rolling Fund, including how it would be controlled and what types of delegation would be needed;
- Identifying how much freedom and flexibility the Fund will have competing priorities, particularly if they involve balancing investment between different authorities and projects? This will be an issue that increases in importance once the initial elements of infrastructure have been delivered, and it becomes increasingly important to shape the mechanism for defining future priorities for investment, e.g.:
    - Should it be based on a financial appraisal of future schemes based on ability to generate future recycling?; or
    - The ability to produce outcomes and outputs in line with objectives of the sub-region with no consideration of recycling benefits.
- Even if the Fund were to be wholly public sector funded and controlled, would appointment of a private sector partner/external resource be required to manage and operate the fund

These are not matters about which it is possible to be precise at the current time, but are intrinsically linked to other operational matters and the policy environment in which it will operate.

6.3.4 Potential for the Private Sector

A significant question to be considered is to what extent the Rolling Fund should complement public sector investment with private sector input.

Over recent years, there has been significant interest from the private sector financial institutions in infrastructure as an asset class. Indeed, over the last year a number of new infrastructure funds have been established by both banks and private equity participants. Examples include recent funds of ING (€1bn), RREEF Infrastructure (€3bn), Goldman Sachs ($6bn). These have an acceptance of lower returns than traditional private equity houses enable them to outbid classic investors

The reason for this growth can be linked to the fact that:

- pension fund investors have significant amounts of capital (always growing) to invest
- budgetary pressures are forcing governments across the World to explore alternatives to public sector provision
- there has been a broadening of relevant assets in which Infrastructure Funds will consider investing
- Institutional investors are keen to invest in opportunities that can deliver relatively predictable, income orientated returns.

The introduction of the private sector would impact on the way in which the fund would operate and on the ways in which infrastructure would be delivered. These are matters that require further exploration. The benefits are that it would:

- Increase the level of resources into the fund;
- Bring private sector financing expertise into the Rolling Fund and the way in which infrastructure is delivered
- Strengthen commercial approach to investment decisions, potentially increasing return

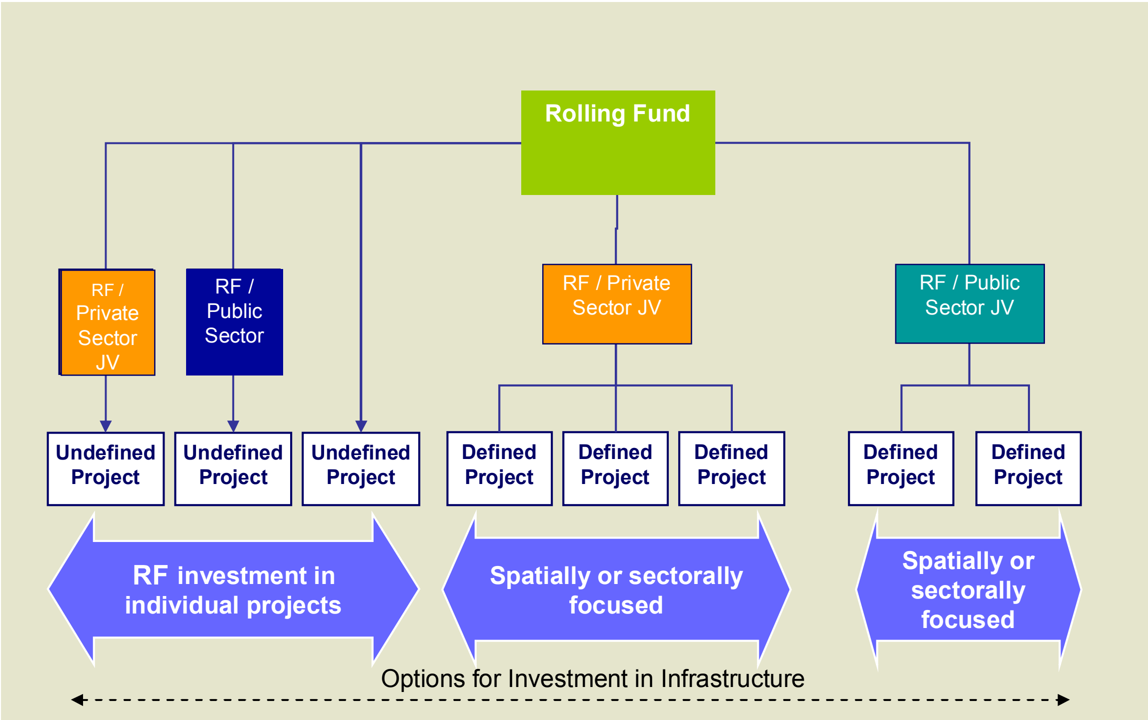
However, there are potential challenges:

- There is a need to have a commercial model that is viable, and a stream of infrastructure projects with demonstrable returns, in order to secure interest
- Control and Governance issues might change significantly
- The scale of individual assets and infrastructure projects to be delivered through the fund in the sub-region may not be of a scale sufficient to attract private sector interest;
- Would the Rolling Fund be constrained by the skills/interest of the private sector partner in the event of public sector seeking a broader role for the Fund?
- Procuring a private sector partner to the Rolling Fund would increase the time it takes to establish (unless a phased approach is adopted);
- The introduction of the private sector investment might mean the fund's objectives shift to a more commercial stance, 'cherry picking' lower risk infrastructure to increase return, while the public sector may want to deliver on a need basis.

The potential role of the Private Sector in the Rolling Fund has the following implications:

Public Sector Model	**Public:Private Sector Model**
• Managed by public sector • Open book and open to NAO audit therefore completely transparent • Value for money approach on all investments (includes outputs and outcomes v profit motive) • Public sector takes the risk so is granted all the rewards on fund investment • Infrastructure delivered on a need basis • Recycling back into the public sector • Most of the infrastructure may be delivered as will deliver what is required rather than what is profitable	• Managed by public and private sector within a JV • Depending on level of investment, would need a contractually agreed approach to audit • Based on profit motive and value for money and outputs although these may not coincide in some instances • Surplus share element required between public and private sector on land value uplift based on relative investments in fund • Delivery of infrastructure based on an agreed approach to balance the objectives of both public and private sector • Some surplus distributed back to the private sector investors and therefore not recycled

The alternative to the private sector investing in the Rolling Fund direct is for the Fund to invest in PPPs for delivering specific infrastructure, with private sector funding flowing into specific infrastructure projects or groups of projects. This reflects the ultimate flexibility for the Rolling Fund to invest in individual projects, and into public:public JVs or public:private JVs for either individual or bundled infrastructure projects. This is illustrated below:



6.3.5 Legal and Technical Issues

There are other areas that will need to be considered once the structure and operation of the rolling fund have been agreed, with the role of the private sector being of particular significance:

- How will it be accounted for in the balance sheet – will long term debtors be shown for infrastructure funds repayable.
- As an advanced funding mechanism will it require proof and reconciliation of expenditure as soon as incurred?
- Taxation and VAT efficiency.

6.3.6 Risks associated with the rolling fund

There are also clearly risks associated with the Rolling Fund that will need to be managed.

- How will cost-overruns on infrastructure be managed and who bears the risk of where it is paid for by the Rolling Fund? This will depend on the way in which the Rolling Fund engages to invest in and deliver infrastructure;
- The potential for s.106 income, grant, and other revenue income into the Rolling Fund to be insufficient to meet long term objectives
- The potential for there to be a misalignment of objectives/priorities between the Rolling Fund and other sub-regional stakeholders within and/or outside the Fund resulting in there being insufficient clarity on investment priorities to deliver Growth.
- The potential for Ring fencing mechanism to protect the fund from the wider impacts of public sector budgeting – to ensure the fund is not used to offset cost increases in other unrelated areas
- Assurances will be required that the fund will be protected from any changes in development financing by the government – to provide future confidence

6.3.7 Potential Models

With no decision having been made by the Government on the structure and operation of the rolling fund, there are many options to be considered as to how best to deliver the right model. There are, clearly, a number of choices to be made, based on the policy and political judgements of key stakeholders, and it is not for the LTDP to define these. However, we consider that there are essentially three initial models to form the basis for discussion, and analysis. This will in turn lead to development of a model more precisely aligned to needs. It is not possible to make a firm recommendation at this stage as the most appropriate model will depend upon a wide range of policy and operational factors that require further exploration.

	Basic Rolling Fund Model	Added Value Rolling Fund	Public Private Fund
Parties			
Public Sector	✓	✓	✓
Private Sector			✓
Source of Funds (Short Term)			
Public Sector Grant	✓	✓	✓
Private Sector Investment			✓
Source of Funds (Medium to Long Term)			
Public Sector Grant	✓	✓	✓
s.106 land value	✓	✓	✓
Revenue from infrastructure (e.g. user charging)		✓	✓
Other Return on Investment			✓
Function			
Funds Infrastructure	✓	✓	✓
Invests in other growth projects		✓	✓
Invests speculatively to maximise return and future investing power		✓	✓
Ongoing stake (possible ownership) in Infrastructure		✓	✓
Wider Delivery Role as required (e.g. TIF)		✓	✓
Approach to Control and priorities			
Need	✓	✓	✓
Opportunity		✓	✓
Direct control by local authority partners	**High**	**High-Medium**	**Medium**

There will be other areas to be considered, including technical accounting, tax, and legal issues, and also on the extent to which it needs to relate to any wider RIF, TIF and other work, but ultimately these should respond to having clarity on the objectives and above decisions on what is right for the sub-region.

6.3.8 Next Steps

The in-principle agreement for establishment of a Rolling Fund is a major first step that should not be underestimated. However, there is significant work to be done to turn it into reality. The next steps are:

Actions	Who?	Timescale
• Establish Working Group with responsibility for taking forward Rolling Fund, including: ○ Cambridgeshire Horizons ○ Officer Representatives from all local authorities ○ At least one Finance Officer from one of the local authorities ○ EEDA ○ GOEE ○ Appropriate financial and legal support (if not available internally) • Working Group to take responsibility for developing Rolling Fund and undertake specific technical work	Cambridgeshire Horizons (CH) and key Partners	Before June 2007
Market Testing and Feasibility Study for selected model, including financial model, development of relevant terms of reference, and identification of programme going forward, including identifying need for relevant Local Authority and Government approvals	CH	July – October 2007

Ultimate timescales for establishment of the fund will depend on the shape and model adopted, including potential procurement timescales.

6.4 Capturing Land Value

6.4.1 Context

The success of any Rolling Fund and wider delivery of infrastructure associated with new development will depend on the effective use of Planning Obligations - the traditional method for capturing development values for supporting infrastructure provision set out under Section 106 of the Town & Country Planning Act 1990 - which have been used to good effect across the sub-region in the past.

However, concerns exist about the current system and its ability to support the increase in housing supply on the scale that is required on a national scale. In her 2004 Review of Housing Supply, Kate Barker identified a fundamental requirement to improve housing supply but linked to this were serious shortcomings in the planning obligation system and challenges for infrastructure provision.

Cambridgeshire Horizons has explored the potential for introducing a standard charge, or tariff, to be applied to developments based on individual units. A similar approach has been adopted by Milton Keynes. However, it was considered that a single tariff could not be justified given that housing markets in the sub-region are not homogenous and the variations in land value/cost geographically.

The Government is currently considering the introduction of a Planning Gain Supplement (PGS), to capture a proportion of the land value increases or ‘uplift’ created by the granting of planning permission. The Government believes that if it is to bring forward more land for development, it will increase the potential for unearned gains from selling land for development. Consequently, the Government considers that there is a strong case for the use of a levy to allow the wider community to share more broadly in the development gains its actions will create.

Notwithstanding the mechanism used, current analysis suggests that on many sites the scale of infrastructure required is greater than the uplift in land value. However, experience suggests that costs and values can change markedly over time, and any initial valuation will necessarily be cautious about the extent of value uplift that might result from an increasing housing market. In other words, it is possible that the value uplift can be much greater than initially estimated – can any of this ‘extra’ rise be captured if it materialises?

In advance of PGS (in whatever form it emerges) the challenge for the LTDP and partners within the sub-Region is to maximise the use of existing Section 106 agreements in the potential run up to a subsequent PGS led system. Given the timescales for PGS (2009), s.106 obligations will remain the mechanism for capturing value for the majority of major development sites.

6.4.2 Section 106 Agreements

As at August 2007, the debate about the introduction of PGS is ongoing, though even if the Government were to successfully take forward its proposals (which must be considered as doubtful) it looks unlikely that PGS would come into force before 2009. This raises the issue of how planning obligations in the intervening period should be addressed, given that development has commenced and negotiations relating to infrastructure provision on key sites are advancing and one could expect many planning permissions on the largest schemes to be granted before PGS comes into effect.

There is, already, a well developed approach to use of planning obligations in the sub-region, and a number of local authorities have published SPD on use of s.106 agreements, which include a range of different approaches for different types of infrastructure.

However, there are a number of issues to be addressed:

- The need to improve practical use of s.106 agreements by local authority planners and spread best practice across the sub-region, with problems including
    - the failure to establish requirements with sufficient clarity at an early enough stage to enable developers to plan their developments accordingly;
    - the failure to adequately understand or anticipate phasing and approach to development so that ‘trigger points’ for infrastructure set in a s.106 agreement were not appropriate.
- The difficulties of establishing apportionment of cost of local infrastructure between two or more planning applications/ownerships within a comprehensive development, particularly spanning across local authority boundaries. This includes, for example, how the costs of contribution for a school should be estimated if it is situated (taking up development land) within one application and will also serve another; and determining the contribution of individual applications towards items such as roads serving a number of applications within a major site.
- The difficulties of establishing apportionment and approach to pooling of contributions to pay for sub-regional infrastructure, again, particularly spanning across local authority boundaries.
- The difficulty, particularly on large scale developments, of estimating the value within a development (at the time of the negotiation/granting of permission) as a means of establishing the amount it can contribute through s.106 towards infrastructure costs. Such valuations are inherently uncertain, relying as they often do, on single-year residual valuation methodologies with necessarily cautious assumptions around value, given the potential uncertainties of cost and value over time. In reality, such valuations may significantly underestimate the amount of value that is generated and, hence, that could contribute towards the cost of infrastructure needed to support it.

Each of these issues is considered below.

6.4.3 Improving Use of S.106 Agreements

There is already significant guidance on use of s.106 agreements. However, this tends to be fairly generic and process driven and does not address some of the practical issues that need to be considered. The two principle challenges are:

- The difficulties in establishing clarity on requirements for development when it is often difficult to engage with stakeholders as to their requirements until late in the process (resulting in late ‘additions’ to the requirements); and
- The need for those negotiating a s.106 agreement to have sufficient information and understanding on the timing needs of development and infrastructure in practical terms, including considering the reality that over time, developments may not proceed at the pace, or in the same phasing pattern that they were originally intended to, making ‘trigger points’/’development thresholds’ out of date

There is no straight forward answer to this, other than for:

- In terms of clarity on requirements, for the preparation and publication of clear frameworks by all local authorities for use of planning obligations and likely infrastructure requirements in advance of planning negotiations, limiting the introduction of 'late' additions when negotiations or the planning application process are well advanced. For reasons addressed later in this section, a Sub-Regional approach may be beneficial in establishing consistency.
- In terms of understanding practical approach to developments, there is scope for the spreading of best practice on negotiating s.106 agreements (including examples with positive and negative outcomes), practical examples of how developments work in practice. It may also be the case that it can help to bring on board external advisors or have in place a central point expertise on s.106 (potentially within the County Council, given past experience in negotiating s.106 agreements across the sub-region or Cambrigeshire Horizons) to ensure best practice is adopted across the sub-region, and to act as a conduit between local authorities.

6.4.4 Addressing Apportionment Issues and Sub-Regional Infrastructure

The problem of apportionment of s.106 infrastructure costs across individual sites within major development schemes is ultimately a combination of localised issues on specific sites, flowing from different land ownerships, planning application boundaries, and so on. This is sometimes compounded by ongoing uncertainty as to the level and type of infrastructure required. Ultimately, however, the problem flows from being in a position where planning applications are emerging at different times in advance of there being some form of comprehensive view taken across an overall site.

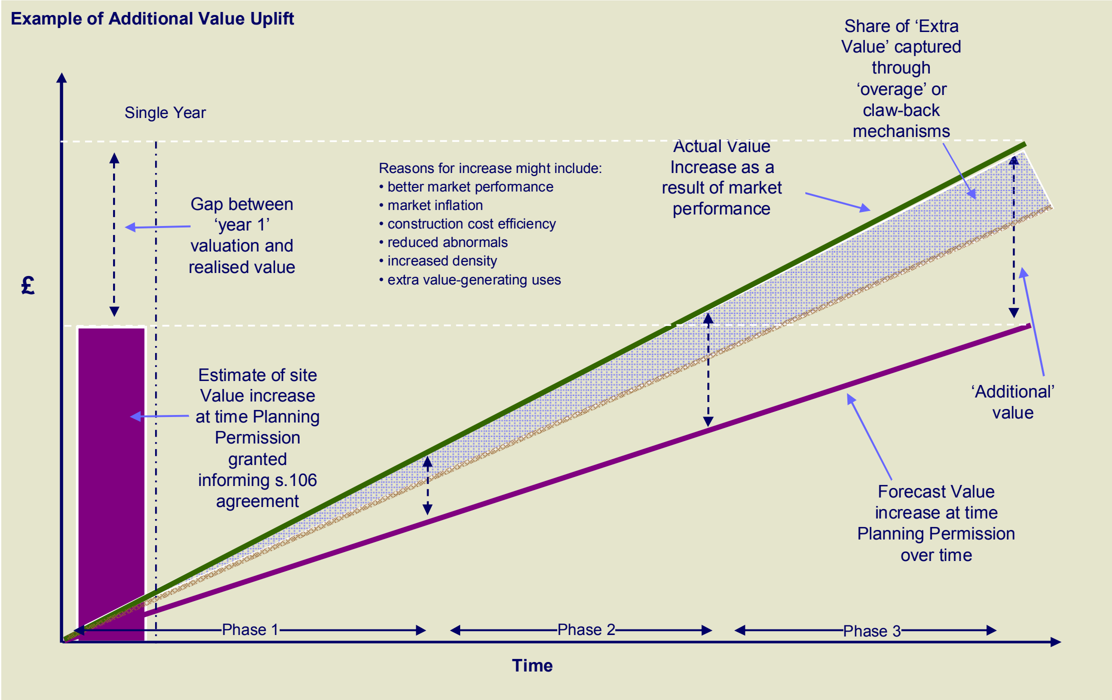
A more acute challenge is how to establish a reasonable basis for s.106 contributions to sub-regional infrastructure requirements that are collectively required (either in whole or in part) by growth across the sub-region. Circular 05/05 establishes the principle of using pooled contributions:

> *In some cases, individual developments will have some impact but not sufficient to justify the need for a discrete piece of infrastructure. In these instances, local planning authorities may wish to consider whether it is appropriate to seek contributions to specific future provision (in line with the requirements for demonstrating need as set out above). In these cases, spare capacity in existing infrastructure provision should not be credited to earlier developers.*
>
> *In cases where an item of infrastructure necessitated by the cumulative impact of a series of developments is provided by a local authority or other body before all the developments have come forward, the later developers may still be required to contribute the relevant proportion of the costs. This practice can still meet the requirements of the Secretary of State's policy tests if the need for the infrastructure and the proportionate contributions to be sought is set out in advance.*

The challenge for the sub-region is to put in place the clear framework needed. The infrastructure requirements set out in this LTDP are a starting point for this, but more detailed work is needed around understanding overall contributions and how these might relate to potential value uplift mechanisms (see below). Such a framework will need to be maintained as infrastructure needs evolve.

6.4.5 Value Uplift and Top-Slicing

It is well established in development agreements between land owners and developers (including by the public sector), that it is very difficult to accurately gauge the ultimate value of a development at the time a contract is signed or planning permission granted. Relatively modest variations in property market or construction cost inflations, or changes to density or development mix in later phases of a development will have dramatic impacts on value that would be impossible to forecast at the beginning. This is shown on the example graph below:



There are two principle approaches being adopted in development agreements:

- Overage, where any 'extra' increase in value at the end of the development is shared with the landowner. In practice, there is a growing concern that overage is not always as effective as it could be, for a number of reasons.
- Clawback, similar to 'overage' but with valuations at a series of stages during the development process, so uplifts in value are captured and shared as certainty increases.

There is understood to be some experience of using development agreement mechanisms within s.106 agreements, but it would be wrong to say there is widespread adoption of this route. One reason for this is that, under the longstanding tests of Circular 1/97 (now enshrined in Circular 05/05), planning obligations should be used only to deliver infrastructure that is necessary in order for a development to be able to proceed. Because overage or clawback comes after permission has been granted (presumably on the basis that necessary infrastructure could be delivered), it is often thought that since permission has been granted, there is no longer any case for additional infrastructure or planning obligation contribution.

However, the circumstances in the Cambridge Sub-Region are different. It is well established that there is a funding gap overall for the infrastructure needed to support development, both on many individual sites, but also sub-regionally, that cannot, in the long term be bridged by public sector investment alone. This includes affordable housing, major transportation schemes, and sub-region wide social infrastructure such as education and health. Moreover, it is anticipated through the Rolling Fund that any investment in infrastructure would be repaid through s.106 value. Circular 05/05 describes such a situation:

> *"In some instances, perhaps arising from different regional or site-specific circumstances, it may not be feasible for the proposed development to meet all the requirements … and still be economically viable. In such cases… it is for the local authority and other public sector agencies to decide what is to be the balance of contributions made by developers and by the public sector infrastructure providers in its area supported, for example, by local or central taxation. If, for example, a local authority wishes to encourage development, it may wish to provide the necessary infrastructure itself, in order to enable development to be acceptable in planning terms and therefore proceed, thereby contributing to the sustainability of the local area. In such cases, decisions on the level of contributions should be based on negotiation with developers over the level of contribution that can be demonstrated as reasonable to be made whilst still allowing development to take place."*

Elsewhere, in paragraph B23, it states:

> *In cases where an item of infrastructure necessitated by the cumulative impact of a series of developments is provided by a local authority or other body before all the developments*

have come forward, the later developers may still be required to contribute the relevant proportion of the costs. This practice can still meet the requirements of the Secretary of State's policy tests if the need for the infrastructure and the proportionate contributions to be sought is set out in advance.

In those circumstances, it would be appropriate for a reasonable share of any subsequent uplift in value to contribute towards the cost of infrastructure, given the long term planning strategy within which the major development sits. However, it is clear that:

- The approach should be set within a clear and transparent framework, so that its provisions can inform the land deals that are done by developers with landowners
- There need to be mechanisms (including open book arrangements and risk allocation mechanisms) to incentivise land value increase behaviour by developers (given many developers secure much of there profit through margin on the cost of construction, rather than land value uplift per se)
- It should not be seen or used as a general development tax
- Any value captured should not be unrelated to the costs of infrastructure needed by the development in question
- The approach must not be disproportionate
- The approach should not be so harsh as to act as a disincentive to value uplift – in other words, the bulk of additional uplift should go to the developer.
- Any approach needs to be tested against vires tests and with Government as being within the ambit of relevant guidance

The approach to a s.106 Value Uplift mechanism should be included within the sub-regional planning obligations framework. An approach might work on a similar principle to overage or clawback mechanisms, for example, for each phase of development on a site. However, this needs to be tested against the way in which land deals are being structured in the region and a view on how practical it will be to apply this level of resource to valuation of each phase of development within the planning regime.

Grant of Permission	<<<<<<<<	Based on an independent valuation. This acts as the reference valuation underpinning the s.106 against which future valuations are measured, based on each phase of development.
RM Approval for Phase 1	<<<[50%]<	Value land and s.106 defines that additional contributions of, for example, [50%] of gain over initial s.106 valuation
Commencement of Development	<<<[50%]<	Value land at highest and best use and s.106 defines that additional contributions of, for example, [50%] of gain over initial s.106 valuation, less previous overage. Gross Development Value (GDV) valued.
Completed Development	<<<[30%]<	s.106 defines that additional contributions of, for example, [30%] of sale proceeds over Gross Development Value (GDV).
RM Approval for Phase 2	<<<[50%]<	Value land and s.106 defines that additional contributions of, for example, [50%] of gain over initial s.106 valuation
etc	<<<[etc]<	etc

6.4.6 Sub-Regional Planning Obligations Framework

Whilst the negotiation of s.106 agreements will remain, quite rightly, a matter for individual local planning authorities, responsive to circumstances within there own Districts, there are a number of issues that require to be addressed across the sub-region. This is for reasons relating to the dissemination of best practice, but also in shaping the approach to contributions to sub-regional and cross-site infrastructure. This framework should establish a framework that categorises infrastructure in s.106 as follows:

Infrastructure Type	Approach	Potential mechanisms
a) Generic local infrastructure/ requirements	Approach set locally by each LPA unless cross-boundary	Contribution is set through a formula/tariff
b) Site-specific infrastructure for an application where the	Approach set locally by each LPA unless cross-boundary	Amount would be determined based on the cost and specification of that infrastructure
c) Infrastructure that spans applications (ownerships) within one major scheme where there is a need for apportionment and to address any land-take issues	Approach set locally by each LPA unless cross-boundary	Amount contributed by each site based on transparent estimate of cost, value of land, and relative need for infrastructure associated with each site/ownership in the context of a comprehensive development approach.
d) Sub-regional infrastructure where the requirement flows not from an individual development but from an aggregation of impacts of many schemes	Approach set sub-regionally	Pooled contributions in line with s.106, including potential use of s.106 Value Uplift mechanism.

This framework will need to be regularly updated as new infrastructure becomes clearer, and it is not the purpose of the Framework to 'micro-manage' the requirements for every single development. However, it should shape the approach to be adopted for cross-boundary and genuinely sub-regional requirements.

6.4.7 Other methods of Capturing Land Value

An alternative to use of s.106 would be an approach that is understood to being considered by EP in terms of their potential infrastructure investment, where the infrastructure can be reasonably tied to a small number of individual development projects. This is to use a contractual arrangement outside the s.106 legislation with the respective developers. Alternatively, it might be possible to put in place a Joint Venture arrangement. This should be considered within the context of the Rolling Fund.

6.4.8 Planning Gain Supplement

The Government's proposals state that PGS would be collected and administered centrally but implementation would be based on the following principles:

- As an essentially local measure, with the local element being allocated to authorities to address community priorities
- PGS revenues will be dedicated to financing additional investment in the local and strategic infrastructure necessary to support growth, in accordance with regional / sub-regional and local infrastructure plans
- PGS revenues will ensure growth is supported by infrastructure revenues in a timely and predictable way

As and when PGS emerges (assuming it does so in the form proposed), the sub-region will need to consider what impact PGS would have on the delivery of infrastructure within the sub-region in the future, bearing in mind that significant major developments may already benefit from planning permission and hence the approach to value capture for infrastructure will already be established.

However, looking forward, PGS would require:

- The need to coordinate at the sub-regional level the distribution of funding to support an identified delivery programme
- Defining how Local Authorities and Cambridgeshire Horizons should work together to produce a coordinated infrastructure plan that prioritises need and allocate available PGS funding in a timely manner

- Identifying the practical approach and mechanisms by which centrally held PGS revenues would be most effectively distributed across the sub-region
- Measuring the impact that a coordinated and programmed approach could have on the delivery of infrastructure and the effect that this could have on the rate of development and economic growth across the region as a whole
- There is also a critical need to understand the relationship between PGS and a rolling fund.

If PGS is not adopted, it is more likely that either the existing regime will need to be taken forward with or without adoption of a 'tariff 'approach. This has previously been considered less likely to be suitable within the sub-region given variable land values, but if this is adopted as the proven model, Cambridgeshire Horizons will need to consider how to make this work.

6.4.9 Next Steps

Actions	Who?	Timescale
Preparation of Sub-Regional s.106 Framework, encompassing best practice, approach to apportionment issues (including mapping of critical sub-regional and cross-boundary infrastructure requirements)	CH and Local Authorities	October 2007
Feasibility work on s.106 or contractual value uplift mechanisms.	CH, including liaison with Government	October 2007
Subject to feasibility work, incorporate guidance on s.106 value uplift into Sub-Regional Framework	CH	End of 2007
Monitor PGS and Consider Potential Implications	CH	Ongoing

7. Public Sector Funding Issues

7.1 Introduction

The public sector is investing heavily in the sub-region but the reality is that growth can only be supported where public sector funds are able to lever in additional private sector resources as a vehicle for making development in growth areas more financially and commercially sustainable. For this reason, it is important that the Sub-Region continues to consider how public sector funds can be most effectively drawn down to support private sector investment and deliver infrastructure and services in the long term.

7.2 Mainstream Commercial Funding

It can be assumed that mainstream commercial funding will be a principal source of finance for the delivery of private housing across the sub-region. The costs of core utilities infrastructure to support development will be made by utilities companies who will be confident about gaining a return on their funds within their business planning cycles so long as the development profile minimises the time between the installation of infrastructure capacity and the take up of paying end users. The exception to this principle exists on the Northern Fringe site, where further work is required to understand the costs and feasibility associated with relocating the sewage works, to understand if the private sector alone could bear this cost.

7.3 Funding and Delivery Models for social infrastructure

The funding available from the public sector, often in partnership with the private sector, is subject to continual change. Whilst this Long Term Delivery Plan seeks to identify funding sources and models for infrastructure in many cases, it is not possible to be prescriptive or set out future public funding flows with any certainty.

7.3.1 Comprehensive Spending Review

This LTDP has been prepared at a time when the Comprehensive Spending Review 2007 (CSR'07) is underway. The CSR '07, conducted by the Treasury, will represent a long-term and fundamental review of government expenditure. It will cover departmental allocations from 2008-2011; The findings of CSR'07 will not be published until at least October 2007 and accordingly this may have significant effects on future public spending, in terms of both quantum and the models of its delivery. Whilst there have been pre-CSR announcements, these do not provide a full picture.

What is clear is that CSR 07 will impose significant funding challenges for over the next funding period:

- The CSR'07 is based on three broad principles: embedding value for money; focussing on key cross-government priorities and responding to the needs of users;
- The (then) Chancellor announced a "zero-based" review of how taxpayers' money is spent which means that departments must justify the effectiveness of existing spending as well as bidding for future spending.
- It was estimated that public spending will grow more slowly than the economy;

The 2007 Budget announced that over the Comprehensive Spending Review (CSR) '07 spending period:

- A baseline savings ambition of 3% pa across central and local government (savings will be net and cash-releasing), and
- Total public spending will grow by an average of 2% pa in real terms.
- The initial findings of the CSR'07 work published in July 2006 identified scope to deliver savings of at least 2.5% per year over the CSR period, together with nominal reductions in departments' administration budgets and plans for asset disposals worth a total of £30 billion by 2010-11.

Whilst savings of 3% may appear modest, in reality many parts of government spending (including within local government) are largely fixed and difficult to reduce (notably some revenue services and those with fixed costs fulfilling statutory functions). This means the 3% savings cannogt be evenly applied, and have to be disproportionately found from within areas of spend that are more flexible. This means the CSR '07 is likely to have significant impacts on funding areas where there is a discretionary dimension, including the discretionary expansion of services and those that are not statutorily required. This has significant implications for the community, quality of life and 'added-value' services provided by local authorities and other public sector agencies.

7.3.2 Delivery Models

There are a number of options to be considered in supporting infrastructure delivery by the public sector. The UK has some of the most complex and varied institutional architecture in Europe, reflecting its political legacy, the devolution settlement, its historical central-local government dynamic, and the different needs of different parts of the country. It has also been at the forefront of developing new models of public private partnership.

UK track record in PPP flows from the fact that the UK has in recent years sought to address its significant historic backlog of under-investment in public infrastructure, whilst also responding to the unprecedented demands on new infrastructure solutions across a number of sectors in response to policy changes, such as those faced in the Cambridge Sub-Region. This spans major transportation, defence, housing, education and waste sectors, as well as housing and regeneration. As a result, government net investment has increased from £19.5 billion in 2004-5 to £32.2 billion in 2007-8.

Governments across the globe rely on arrangements with the private sector to help them deliver infrastructure needs and tackle market failure, but the UK has been at the vanguard in developing innovative 'delivery models' which are intended to enable the public sector to achieve their objectives. The model which has received most attention in recent years is the PFI.

In recent years the UK government has made use of the PFI scheme to deliver some aspects of infrastructure – most notably, schools, hospitals and transport infrastructure. More recently, hybrid models such as the LEP and LIFT have been used with some success.

However, the PFI has been controversial and is subject to considerable ongoing discussion and debate - several recent schemes have failed to reach financial close, and the future of other schemes is in question. One of the drivers of PFI, in terms of the off-balance sheet accounting treatment, may also be open to debate given future adoption of International Financial Reporting Standards. Meanwhile, the LEP and LIFT models are of growing popularity and speculation is growing that they might be applied in other areas e.g. housing, or even about whether they might offer an alternative to the PFI. In other areas, e.g. waste, defence and IT, there remains relative controversy and confusion about the right delivery model. Much depends on how much certainty there can be as to the specification and requirements of the project at the stage when a private sector partner is procured.

So, while the PFI/LEP/LIFT models can work well in many circumstances they are not always appropriate in financial terms, and this has resulted in development of a series of alternative models for securing private sector investment. There are also other models of funding, including Prudential Borrowing, and use of assets to deliver capital investment. There will often be overlaps, and some of these are delivery models (e.g. PFI) with associated funding (e.g. PFI credits). These are outlined in the schedule below:

Model	Characteristics
PFI	A well-established procurement model with a long-term contract between the public sector client and a private sector Special Purpose Vehicle (SPV) to deliver infrastructure and services in exchange for an annual, performance-related payment, enabling the public sector to spread the cost of the investment over a 25-30 year period. Already being used to deliver the Addenbrooke's 2020 Vision, the initiative is used only for the delivery of large projects (>£20m) in conditions of relative certainty. PFI projects have been supported by Government PFI credits.
LEP-LIFT Model	Where there is desire for a more flexible a joint venture company is set up which is majority-owned by a private sector partner. The private sector partner is selected through a competitive process which includes a fixed price for the first phase of work. Subsequent phases are commissioned by the public sector partner, but carried out by the strategic partner using the first phase of work as a benchmark to the appropriateness of future costs.

Model	Characteristics
The Integrator	This seeks to deliver the LEP/LIFT model but without losing competitive pressure. The distinctive element of the Integrator model is the inclusion of a private sector partner who takes on the role of Principal and responsibility for overall delivery from the public sector agency. The Integrator is rewarded according to overall project outcomes and undertakes to procure the necessary delivery functions.
Competitive Partnership	In this model, the public sector appoints multiple LEP-LIFTs through a competitive process with contracts which allow for the possibility of reallocating projects between them at a later date as overall performance becomes clear. This is used to maintain competitive tension and can be used for larger scale, longer term projects.
Alliancing	This is a delivery model in which the initial focus is on defining the appropriate basis on which the parties will work – rather than a formal arrangement for the production of a specific output. Alliancing has been used where uncertainty is high at the initial stage. The approach taken is usually to define the initial phase of the work in terms of the required outcomes, bring together relevant partners to develop an output specification, and then, once this is clearly developed, run a competition to find an appropriate delivery partner.
Incremental partnership	Under the incremental partnership approach the public sector enters into a framework agreement within which different elements of the work can be 'called off' as required. The public sector retains the right to use alternative partners where that is suitable, and significant risks can be transferred too.

Not all of these models are necessarily applicable by rote to future investment for the Sub-Region, or in terms of delivering all infrastructure investment, and any model always needs to be tailored to the specific circumstances of the project, and reflect funding and bidding rounds that exist. Across the spectrum of public sector infrastructure, there is extensive hybridisation in the market place to reflect local and project-specific circumstances.

Moreover, beyond the financial implications of different models of delivery, many public sector bodies will also need to take account of other factors, including capacity and skills, culture, and (often) the personalities involved. However, some overall principles and lessons can be identified and applied.

In assessing the potential structure and framing of funding and delivery models, critical success factors are

- Understanding long term funding prospects for the sub-region;
- Having a clear set of objectives that the selected financing model demonstrably will achieve;
- Defining the issues on which the public sector wishes to continue to control or to influence;
- Letting the structure be determined by the critical factors of finance and capability – not a pre-determined structure or theoretical model defining boundaries first;
- Being clear where the absolute boundaries of public policy and accountability rest in terms of structure and delivery responsibilities (including the State Aid parameters);
- Taking time to bottom out the roles, responsibilities and expectations of all Identifying and planning for the exit route for the public sector; and
- Monitoring, management and evaluation arrangements including the skill set of the public sector personnel likely to be engaged in the model if a joint venture is envisaged.

Actions	Who?	Timescale
CH should work with its partners to ensure that Growth Area plans and infrastructure needs are properly reflected within sector funding strategies and the appraisal of funding and delivery models.	CH, Agencies, LA partners	Ongoing

7.3.3 Local Government Funding Options

In addition to the various PPP models, there are a number of financial mechanisms open to local authorities through their existing powers and assets in terms of delivering the infrastructure needed for growth. These include:

Model/Funding Source	Characteristics
Capital raised from land value uplift on public sector assets	Effectively where value is captured from public sector land assets and recycled into the sub-region.
Local Government Capital programme	Investment under the capital programme based on funds flowing from its funding allocation from Government and local revenue, may range from acquisition of land and buildings and works; new construction; vehicles, plant, equipment and machinery; financial assistances; and acquisition of share and loan capital.
Capital realised from local authority real estate	There is a growing recognition that more can be achieved by squeezing value from surplus local authority and other public sector assets, including through corporate property review processes against operational needs. This is linked to the emerging Local Asset Based Vehicle model (LABV)(
Prudential Borrowing	This facility enables local authorities to borrow within certain limits on the back of projected increases in revenue from council tax base arising from increase in houses. Of influence will be a view as to whether Growth will increase costs to local authorities or generate additional income, which would impact on ability to borrow.
Other mechanisms, such as sponsorship and drawing on the resources of the third and voluntary sector	Particularly for organisations such as those in leisure and the arts, business sponsorship and support from Charitable Trusts provides significant capital and revenue funding to deliver activities that meet social and cultural objectives. Many arts and heritage organisations are increasingly adept at pursuing these avenues, in tandem with other major competitive bidding sources (e.g. Lottery) although these are subject to limits due to competing priorities such as the Olympics. The growing use of the third sector within the Strategic Commissioning environment is a growing trend, and is part of the new CAA framework considered in Section 8.

The application of these will depend on the circumstances of individual local authorities and the funding priorities. It is not for this LTDP to define precisely how local authorities should apply these. However, it is clear that for the Growth Area plans to be taken forward, the local authorities will need to adopt innovative approaches.

7.4 Funding by Sector

The analysis and spreadsheets outlined in Section 4 identify specific funding streams (either spent, committed or anticipated) for infrastructure types. In many cases, these are based on specific projects where funding sources have been allocated and there is either a commitment or strong expectation that public sector resources will be available. In many cases, these relate to some of the projects coming forward within the first third half of the LTDP period. For many projects however, funding streams are uncertain. This does not mean that public funding is not available. Rather, it is that the projects are not yet in a position to enter relevant funding rounds or funding flows are uncertain. This is partly a function of the relatively short term nature of many funding programmes and rounds.

This section considers some of the potential funding routes (and associated funding pressures) for different infrastructure sectors (based upon the classifications used throughout this document).. It should be emphasised that this summary is necessarily high level, given the wide range of different schemes, funding streams and timescales. In particular, the applicability of different funding models (e.g. PFI) is something that should be considered in relation to the specific circumstances of each scheme. It is not possible to identify in this document, at a sub-regional level, the circumstances where PFI (in particular) may be appropriate – such judgements should be made on option appraisals in line with HMT guidance. However, it is clear that the need to support the Growth Area plans will be major components of any Business Cases required to support applications for funding, PFI credits etc.

There are also a number of significant uncertainties associated with the CSR process. The analysis here does not provide a funding plan for every piece of infrastructure – the current identified routes where they exist are set out in the Project Programmes.

Transport

The publication of Transport 2010 by DfT is argued to have marked the beginning of a more strategic approach to transport funding, focusing on improving redictability of both policy and funding to deliver real improvements in the transport system. This is in response to the importance of having a reliable, modern and sustainable transport systems. DfT has reorganised in order to respond better to the Eddington Policy recommendations.

Local Authorities now have powers to introduce road user charging and/or levy a charge on the provision of workplace parking. These powers give Local Authorities a new demand management tool to assist in the delivery of the local transport strategy, which includes the introduction of local charging schemes that may be able to generate a sizeable revenue stream for improving the local transport facilities.

Analysis of PFI / PPPs by CIPFA as at 31 March 2006 indicated that the 2nd highest proportion of funded projects (11%) related to transport and street lighting.

TIF is the significant funding opportunity for transportation infrastructure moving forward in terms of tackling either congestion (TIF-C) in the sub-region. The recent bid submitted for circa £500m of infrastructure is absolutely critical to tackling the transportation challenges associated with growth. A failure to secure the necessary funding would have a major detrimental impact on the ability of the sub-region to provide a sustainable transport solution moving forward.

Transport Summary	
Lead Agencies	Local Authorities Highways Agency DfT Network Rail
Key Funding and Delivery Issues	Upfront funding for infrastructure required to support individual developments and at a sub-regional level Major investment in highways and public transport.required New responsibilities under the Traffic Management Act 2004 Emerging potential for road user charging and other demand management/infrastructure solutions under TIF programme
Potential Future Funding Sources	Transport Innovation Fund (TIF) Cambridge County Council LTP Cambridge County Council locally determined capital Highways Agency Funding DfT Major Schemes Developer Contributions Road User Charging Revenue Network Rail / Private Sector

Transport Summary	
Potential Delivery Models	There are a wide range of potential models for transport funding, including direct grant. PFI and other PPP models are being used (including on street lighting etc), and may have a role to play as part of wider TIF packages where future road user charging is involved (e.g. use of PPP to deliver up-front infrastructure improvements in advance of revenue from road user charging receipts)

Education

Education is the largest spend area in Local Government (42%). The funding streams that are currently available for delivering investment in education flow from:

- Local authority capital investment
- DfES funding;
- Building Schools for the Future (BSF) for secondary schools
- S.106 developer contributions for new provision
- Learning and Skills Council

All LAs are allocated capital funding over each spending review period to support their investment in school buildings. Where an LA identifies the need to make changes to local school provision, as part of BSF, the funding will be provided through the BSF programme. Funding flows might include the contribution by the Local Education Authority (or schools or other stakeholders such as dioceses) of receipts from land made available through school reorganisation, or s.106 contributions. For voluntary aided schools, government funding will normally be at 100% of the approved capital costs. LSC funding is available for post-16 education provision.

A Targeted Capital Fund was announced by the then DfES for applications for exceptional funding – worth £500million a year by 2007-08. Current plans are also focussed on the creation of 200 Academy Schools by 2010, each funded with an initial £2M contribution from private sector sponsors.

The recent Sub-National Review published by HMT has proposed that funding for school sixth forms, sixth form colleges and the contribution of FE colleges to the 14-19 phase will transfer from the Learning and Skills Council (LSC) to local authorities' ring-fenced education budgets;

The funding needs associated with Higher Education are considered to be outwith the ambit of this LTDP.

Education Summary	
Lead Agencies	Cambridgeshire County Council Learning and Skills Council
Key Funding and Delivery Issues	Significant investment in new schools associated with both individual developments and overall funding growth Ongoing review of education provision in light of growth and existing facilities. Investment needed in existing school and FE infrastructure Shift of 14-19 FE education to Local Authority will necessitate additional resources.

Education Summary	
Potential Future Funding Sources	BSF has been identified as funding route for secondary schools and special schools. Fenland is the first district for secondary and special schools and the Fenland Junction PRU will be the first to benefit from BSF Cambridge City and Huntingdonshire are programmed for Waves 10-12, starting approximately 2012 to 2014 East Cambridgeshire and South Cambridgeshire are programmed for Waves 13-15, starting approximately 2015 to 2017 DfES funding Private Sector sponsorship Developer Contributions Third sector (including faith organisations)
Potential Delivery Models	BSF is the funding, but a Local Education Partnership (LEP) is a delivery model (outlined above) that allows local authorities (LAs) to procure all the requirements of their local BSF projects through a single long-term partnership with a private sector partner and PfS in a joint venture company. Other investment could come forward through faith-based schools, Academy school routes, independent bodies/trusts or through the LEA.

Community Facilities / Quality of Life

Nationally, it is estimated that there is a backlog of investment in local authority sport and leisure facilities of circa £4.5 billion, with local authorities also struggling to maintain their libraries provision. PFI /PPPs are currently playing a part an important role in modernising community culture and sports facilities.

DCMS secured an additional funding of £130 million as part of SR2004 for new leisure and culture PFI projects, but the future under CSR07 is uncertain. The draw of the 2012 Olypmics on funding for culture and sport has also been significant, particularly for projects coming forward over the coming years. The funding approach moving forward beyond 2012 may improve, but it means there are real constraints in the interim period, particularly for competitive grant regimes, such as HLF.

The absence of a dedicated national capital investment fund and a limited amount of PFI credits means that local authorities are increasingly required to work more efficiently and effectively in partnership with other public, private and voluntary sector agencies, to lever investment into their assets and services, and to continuously improve their services.

It is also the case that some community facilities and quality of life facilities operate within a mixed market - there are a range of public, private and public-private suppliers. It is therefore important that public sector funding provision is directed to those sectors where there is a genuine ‘market failue’.

In terms of other community facilities, such as emergency services, there are also a number of funding and delivery pressures, such as the growing importance for the police of counter terrorism and countering serious organised crime, and the greater focus on collaborative back office activities across forces.

Community Facilities / Quality of Life	
Lead Agencies	Cambridge County Councils District Councils Emergency Services Other agencies (for shared/community hubs)
Key Funding and Delivery Issues	Need for new facilities to cater for growth in new developments Enhancement of existing facilities within existing settlements Capture of development value for funding Funding pressures associated with future financial savings Potential for shared facilities
Potential Future Funding Sources	Developer Contributions Third Sector (Trusts and Foundations) DCMS Lottery Sponsorship Prudential Borrowing
Potential /Delivery Models	Range of different PPP models, including both PFI and joint ventures. Trust structures Local authority-led Public Sector JVs

Health

The funding issues associated with health care are widely known. The wider pressures associated with changing demographics, developments in clinical practice, new drugs, and growing aspirations and need are all impacting on the provision of health care, reflected in the infrastructure identified for the sub-region.

Moving forward, critical challenges for healthcare include:

- Creating delivery systems: integrated health & social care, contract networks of services, joint ventures and new organisational types
- Restructuring hospital services, including moving greater provision into primary care and community settings, integrating health and social care services
- Protecting essential local services within a challenge financial framework
- Operating within the commissioning environment and direct providers (e.g. NHS trusts)
- Operating within the LAA and CAA environmnent with local authorities

Funding for health care is complex. In terms of central government funding, the Department of Health allocates funding to primary care trusts (PCTs) on the basis of the relative needs of their populations. A formula determines each PCTs' target share of available resources, to enable them to commission similar levels of health services for populations in similar need. PCT revenue allocations are made after each Spending Review. The Department has allocated £64 billion in

2006-07 and £70 billion in 2007-08, giving PCTs control of over 80 per cent of the NHS revenue budget.

Health Summary	
Lead Agencies	PCTs Hospital Trusts
Key Funding and Delivery Issues	New facilities to accommodate growth Managing enhancement/changing services to reflect growing and evolving needs Funding pressures associated with demographic change, developments in medical treatment and demand for drugs, staffing. The LAA and Strategic Commissioning environment
Potential Future Funding Sources	PCT PFI Private sector (e.g. GP practices) Third sector Restructuring of property assets
Potential Delivery Models	LIFT PFI Commissioning

Open Space / Recreation

The Cambridgeshire Horizons Green Space and Sports Facilities Strategies identify the critical funding and delivery issues across the sub-region. In essence, the need for facilities is driven by a combination both increased demand flowing from growth, alongside targets for increased participation in sport and recreation.

Many of the funding pressures are shared with those in the Community Facilities and Quality of Life sector, notably, funding pressures through CSR07 which are likely to impact disproportionately in local authorities on discretionary services.

The voluntary and club sector is growing with many authorities passing, particularly outdoor, leisure facilities across to community operation under Service Level Agreement. The future market may be difficult to predict, with ever changing trends in sport and fitness activity. There may be a shift by local authorities to commissioning services rather than being the main supplier.

Open Space / Recreation Summary	
Lead Agencies	Cambridgeshire & Peterborough Sports Partnership Sport England EEDA Cambridgeshire County Council District Council

Open Space / Recreation Summary	
Key Funding and Delivery Issues	Requirement for new and expanded facilities Funding pressures within local government arising from CSR Mixed market including public, private and third sector provision
Potential Future Funding Sources	Developer Contributions Prudential Borrowing PPP Joint Venture Asset Disposal Sport England County Council Lottery Future DCMS initiatives University
Potential Funding/Delivery Models	Range of different PPP models, including both PFI and joint ventures. Trust structures Local authority-led Public Sector JVs

Utilities

The issues associated with utilities are wide ranging, and span:

- Waste
- Water
- Energy
- Telecommunications and Media

In the waste sector, the challenges associated with increased environmental standards, the 'green agenda', waste planning (landfill sites, recycling and disposal etc) and the ongoing challenge for many local authorities to secure the right private sector suppliers to this market. Nevertheless, the PFI model continues to be significant approach in the waste sector.

For the other utilities, the issues flow from the structural issues associated with the privatisation of utility industries. A report for English Partnerships on the issue in 2002 found that instead of a more open and transparent programme of upgrade and provision, the process of delivering infrastructure upgrades and investment had become commercially sensitive and generally rationed to meet stringent corporate investment criteria, moving towards an approach that has less direct focus on impact/needs of commercial and development custormers or wider growth goals. This has including the strict regulatory regime focused on cost reduction for consumers and efficient use of investment resources. The impact of this has been that, nationally, a number of development projects have had to bear a disproportionate share of the costs of infrastructure. Clearly, circumstances have continued to change, but it reinforces the need for close working between providers and planning authorities.

For water, site specific issues exist within the sub-region (e.g. Northern Frange), and there are overall challenges of waste treatment and how to deliver long term funding and planning issues in the event of major infrastructure requirements (e.g. reservoirs were one required). The need to deliver these major infrastructure investments can sometimes result in financial challenges. There is relatively limited experience of joint working between local authorities, developers, and water utilities providers to properly scope these and identify new funding mechansism. This could be a function of the Rolling Fund.

Whilst future funding and delivery of energy is generally regarded as not being a major challenge moving forward for housing growth, in the future, emerging solutions such as on-site energy generation (e.g. combined heat and power, renewables etc) may give rise to higher risk for providers of infrastructure that the costs of installation may not be covered by revenues from take-up to the same extent.

Utilities Summary	
Lead Agencies	Cambridge County Council National Grid All major utility providers
Key Funding and Delivery Issues	Growing environinmental standards, increasing the specification for service delivery Lead in terms for certain infrastructure types and cash flow issues, including uncertainty of take-up
Potential Future Funding Sources	Developer Contributions Private Sector/Utilities Providers PFI credits (waste)
Potential Funding/Delivery Models	Rolling Fund PFI/PPP models Developer-delivered

Affordable Housing

The difficulties of securing funding and delivery of sufficient affordable housing is widely acknowledged, and this has underpinned the move by the Housing Corporation to push forward with the Cambridge Housing Challenge.

The CHC is a pilot programme trialling a different way of managing large strategic sites which have national and regional significance. The CHC pilot invoves the pre-selection of a strategic development partner (now identified as Cambridgeshire Partnerships Ltd – a consortium of housing associations) to deliver affordable housing on three of the strategic sites in Cambridge - Northstowe, Southern Fringe and North West Cambridge in advance of specific site details. Cambridgeshire Partnerships selection in advance of the 2008-10 bid round, and with the promise of a five-year grant funding commitment, is an innovation. The new approach should maximise the impact of Government funding programmes by securing an affordable housing development partner from site inception to completion, improving the efficiency of housing investment, and enhancing the delivery of affordable homes in a Government priority area.

Clearly, this is a delivery route, and funding will continue to be required through a combination of developer contributions, RSL funding, and NAHP. The Corporation has undertaken previous work focused on reducing the contribution it has to make through NAHP per unit, but reducing build costs, and increasing RSL funding.

There will be an ongoing challenge associated with balancing the need to secure developer contributions for affordable housing with competing demands for other infrastructure, giving potentially finite development values.

New affordable housing on developments outside the three strategic sites so far identified will proceed under current arrangements.

Affordable Housing Summary	
Lead Agencies	District Councils (Strategic Housing Role) Housing Corporation Cambridgeshire Partnerships Ltd
Key Funding and Delivery Issues	Development and land values and competing infrastructure requirements Availability of NAHP funding Resources to deliver affordable housing on other sites >100 units Increasing efficiency
Potential Future Funding Sources	Developer Contributions National Affordable Housing Programme RSL resources/borrowing
Potential Funding/Delivery Models	Cambridge Housing Challenge RSL development Joint Venture with private developers

7.4.1 Key Issues Arising

It would not be appropriate for this LTDP to have in place detailed proposals for funding every item of infrastructure as this is a detailed exercise that must take account of the circumstances of every infrastructure. However, there are areas where ongoing research, preparation, and dissemination of best practice will support delivery:

- Further, more detailed scoping of potential funding sources for different sectors, including exploring prospects for public sector investment/link to Rolling Fund;
- Disseminating best practice on different delivery and financing models for infrastructure, including both commoditised models such as PFI as well as new funds, particularly between local authorities;
- Integrating any reviews of operational land and property requirements with the need to capture value to deliver wider infrastructure; and
- Ensuring sectoral business planning/strategy/business case work is fit for purpose in supporting future bids for funding under competitive regimes.

7.4.2 Next Steps

Actions	Who?	Timescale
Sector-specific funding and delivery strategies in areas where there are longer term funding issues to overcome to feed into spending priorities of Government flowing from CSR07	CH, Agencies, LA partners	2007/8
Best Practice Workshops on Funding Models for different forms of infrastructure	CH	2007/8

8. The Broader Delivery Context

8.1 Introduction

Although funding infrastructure is a critical issue, there are other factors to consider over the period of the LTDP. These include how the Governance framework for the delivery of the Growth Strategy, the integration of infrastructure and implementation issues into future spatial planning processes, and how critical policy issues such as climate change will be addressed.

8.2 Governance

Cambridgeshire Horizons is a company limited by guarantee, established to ensure that the growth required across the sub-region, in terms of housing and associated social, community and physical infrastructure is achieved. Company membership includes all key sub-regional and regional Partners and Cambridgeshire Horizons is recognised by the Government as the Local Delivery Vehicle (LDV) for growth in the Cambridge sub-region. The company itself does not have statutory powers but operates by coordinating the action of its Partners. The role of the company is to establish structures and ways of working which enable delivery of objectives in the most efficient and effective manner. Recent work has established that there is a need to strengthen the sub-regional dimension and coordination to deliver growth.

8.2.1 Adapting to the growth agenda

Responding to this agenda, Cambridgeshire Horizons has adopted new structures that will promote joint working amongst Partners covering the five major growth sites to ensure efficient delivery:

- A Joint Strategic Growth Implementation Committee – to act as a Standing Committee of the Cambridgeshire Horizons Board with the role of taking ownership of and driving forward the implementation of the major developments at Northstowe and the Cambridge fringe sites;
- The Joint Strategic Growth Implementation Committee will be supported by a Senior Officer Board – the Board will oversee the management of the joint working arrangements;
- Reporting to the Senior Officer Board will be two Delivery Boards, the Northstowe Delivery Board and the Fringe Sites Delivery Board. These Boards will replace the existing Project Boards and will exercise the day-to-day responsibility for driving forward the implementation of the developments;
- For the exercise of statutory development control functions, the three local authorities i.e. Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council will delegate powers to two joint development control sub-committees, the Northstowe Development Control Sub-Committee and the Fringe Sites Development Control Sub-Committee; and
- To support these structures, Cambridgeshire Horizons is putting in place new programme management arrangements based around an approved programme, risks and issues logs and clear lines of reporting to officer delivery boards. As part of the Local Delivery Vehicle review, resources have been secured from DCLG to implement this approach and provide enhanced project management support to Cambrdigeshire Horizons and its partners.

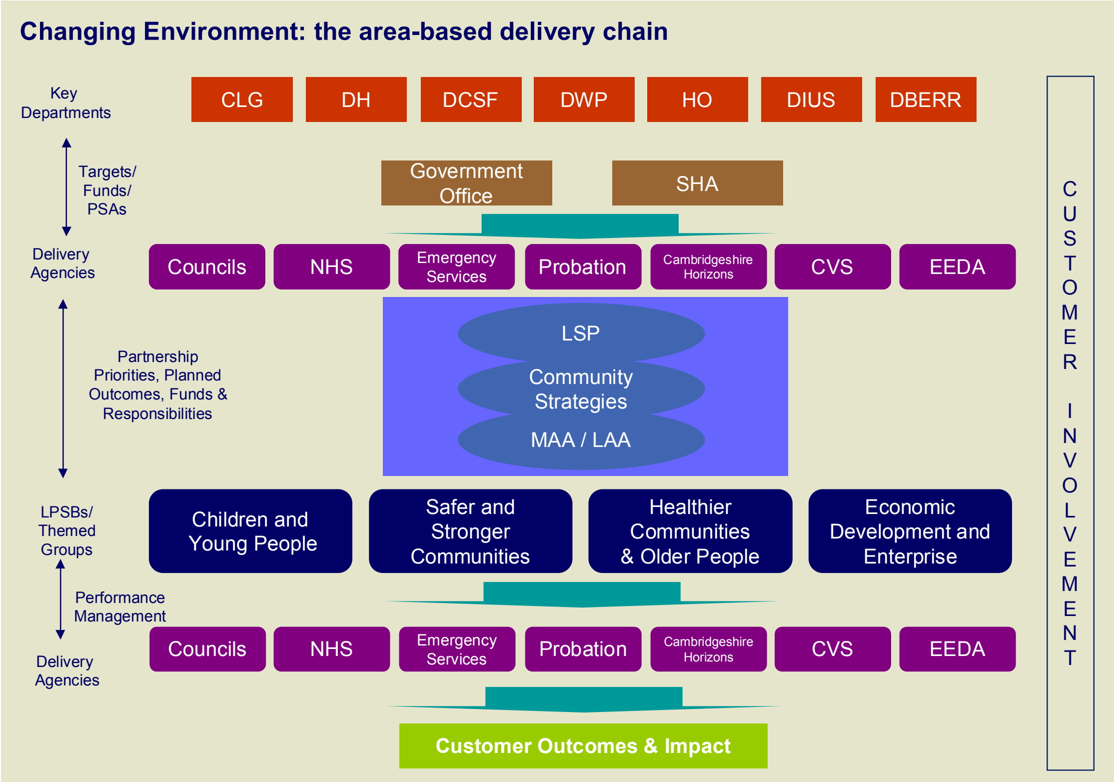
8.2.2 Future Growth and the Area-based Delivery Chain

Whilst the above mechanisms provide a useful platform for addressing the current challenges, the development taking place across the sub-region will continue to 2021 and beyond. Whilst there is no immediate need for any further review or reorganisation (the focus being on making the above arrangements work), there are a number of issues to consider and review:

- In moving forward issues such as efficiency, skills and risk management need to be high on the agenda. The £2m pa budget of Cambridgeshire Horizons to support service delivery provides a strong basis for this, but there obviously needs to be a strong framework for this resource to be applied to good effect given the funding and implementation issues highlighted in this report;

- There was debate at the LTDP Workshop of 8th March 2007 about Local Government boundaries – it was recognised that at present the LA administrative boundaries were not ideal given development patterns. Issues such as the future of the 2 tier system, current unusual boundary arrangements and the future views of the Boundary Commission may see significant change which could represent an opportunity to forge greater operational efficiency. This needs to be considered in light of the findings of the Lyons Review;
- The Place Shaping Agenda and emerging role of local authorities as Strategic Commissioners, operating within a strong Local Area Agreement and Multi-area agreement framework, assessed within the Comprehensive Area Assessment (replacing the Comprehensive Performance Assessment regime) from 2009. The focus of the new CAA will be on:
    - Performance of the LAA, rather than just the individual local authorities;
    - Demonstrating a focus on "Place"
    - Customer focus and user involvement
    - The need for continuous improvement
    - PI performance assessment
    - Delivery of value for money
    - Outcomes delivered, area based risks and forward planning.
- The future potential change in institutional architecture associated with regional planning and economic development and an Integrated Regional Strategy. The governance and accountability and strategy processes associated with this move are still to be worked through, but the way in which the sub-region relates to it will need to be carefully considered.
- The role of parish councils – the role of parish councils and useful models of neighbourhood planning emerging from East Cambridge. However, given the potential need for management of local community resources there is a need to ensure that existing models have the right skills and capacity to form an effective pro-active part of the governance structure focussing particularly on local infrastructure management;
- There is a need to be cognisant on the future of Cambridgeshire Horizons – in terms of evolving post 2016 in terms of the delivery of major projects through to, potentially, a wider socio-economic agenda, and broader infrastructure gap. Existing new arrangements have been formulated on the basis of coordinating delivery across identified major development sites to allow for growth to 2016. It is important to recognise that after this date there will continue to be significant sub-regional growth challenges that need to be managed alongside a potential long term Rolling Fund. Discussion is needed as to what happens next and on what basis any changes should be made; and
- Public accountability – a critical issue for good governance. Whilst accountability is important, there is a need to shape it to reflect different levels of decision making and the distinction between accountability and responsibility for delivery, and those who are consulted and informed. In relations with the private sector an ability to make swift and devolved decisions is often recognised as a pre-requisite to innovation and genuine public private partnerships. As such agreement is needed on how the golden thread of public accountability permeates all levels of governance without being over restrictive on an ability to devolve certain aspects of decision making.

In interpreting these factors, there is a need to work to the emerging delivery chain for local authorities and Cambridgeshire Horizons within the sub-region, as shown below:



Actions	Who?	Timescale
CH and its partners should begin the process of considering future implications of the new area-based delivery chain, including potential MAAs, performance management, and governance and accountability regimes,	CH, Agencies, LA partners	2008/9
CH should consider its scope and breadth and how it boundaries of responsibility relate to other delivery agencies at either a local or regional/sub-regional level.	CH	2008/9

8.3 Spatial strategy and long term planning

In addition to site-specific infrastructure requirements relating to major sites, there are a number of identified strategic or sub-regional projects that are critical to the development programme proposed up until 2021. Examples of secured projects include the A14 upgrade, the Cambridgeshire Guided Busway and Addenbrooke's 2020 Vision.

Strategic infrastructure issues take a long time to crystallise and long-term planning is absolutely essential to ensure that they can be delivered in tandem with new development. At the LTDP Workshop, attendees were asked to consider how future growth scenarios might impact upon strategic infrastructure requirements across the sub-region, and what measures or arrangements need to be in place to establish the implications in more detail, and identify how the sub-region can begin to plan for longer term growth if it occurs.

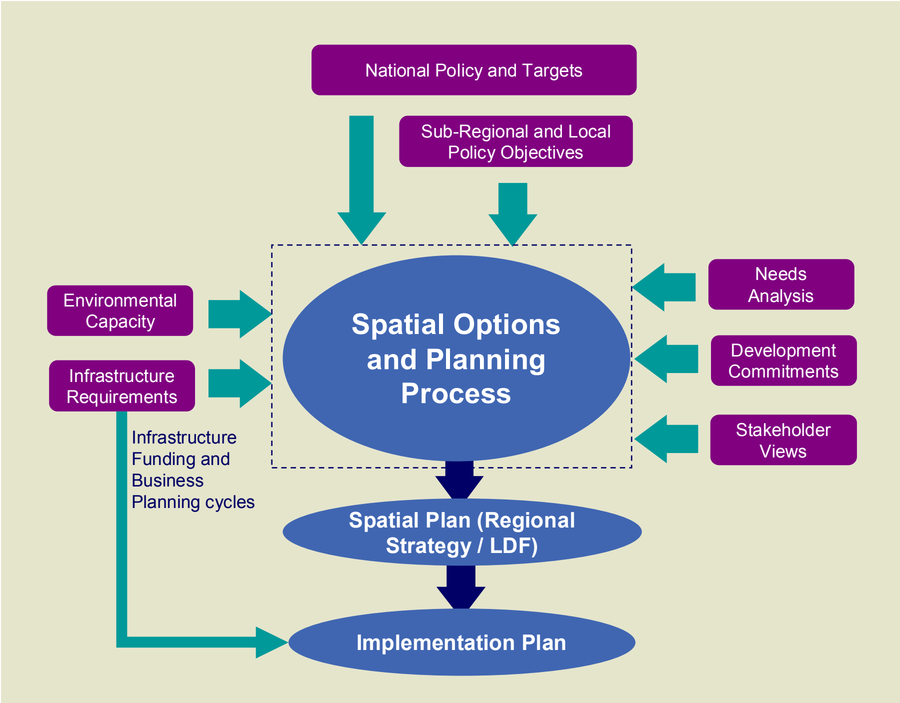
It is important to recognise that Cambridgeshire Horizons is not a policy making or strategic planning body. Responsibility for future decisions on spatial strategy rest with the local authorities and regional planning bodies. However, as the body with direct responsibility for coordinating the delivery of the sub-region's growth plans, CH does have a specific insight and the critical linkages with infrastructure providers to ensure long term infrastructure issues are properly embedded within spatial planning processes.

8.3.1 Future Spatial Planning Challenges

In moving forward in both spatial planning and infrastructure delivery, there are a number of factors to consider:

- The future form of development, including the balance between brownfield and Greenfield sites beyond 2021, depending on the scale of development required, taking account of environmental capacity constraints.
- Correspondingly, an understanding of future development patterns. There are potentially very significant differences in infrastructure planning associated with different spatial strategies (for example, between one focused on a small number of major development sites, to one with a dispersed development pattern across market towns, or through the creation of a new town within the sub-region.
- Based on future development patterns associated with overall growth beyond 2021 and behavioural/demand and supply change in different infrastructure sectors, there are different range of future strategic infrastructure requirements.
- It will be important to consider the following research areas:
    - How should trade-offs between demand management and additional supply be delivered in the context of wider policy
    - For transport, what might be the longer term impacts of modal shift in sub-regional transport.
    - Utility services – how might increased service requirements be mitigated by behavioural and technological change associated with the need to conserve resources.
    - The future of healthcare and education provision – associated with changing patterns of provision and delivery models
    - Waste services – including the long term implications of relocating the sewage works to open up the Northern Fringe site
    - Leisure and culture – the requirements will substantial household growth place on this softer infrastructure. Might changes in technology and lifestyle mean different demands or will current patterns of demand continue into the long term meaning household growth necessitates additional provision. How can they be developed and funded in such a way as to maintain Cambridge's heritage and other constraints?
- What are the barriers to being able to make long term planning (in terms of, for example, political, financial or business planning cycles and priorities) and how can these be overcome?

Although there has been some debate internally among stakeholders in response to these issues, there is a need to develop a process for considering these and other spatial planning issues in a way that properly embeds issues of infrastructure delivery properly within the spatial planning process. As the body with most significant capability and knowledge, Cambridge Horizons should have a major role in ensuring this occurs, recognising that it is not responsible for spatial strategy. A conceptual framework for the range of factors and linkages is shown below.



Actions	Who?	Timescale
CH and its partners should map out the spatial planning process for taking forward the future growth agenda, including how infrastructure planning and implementation issues will be properly embedded within it.	CH	2008
CH should undertake a series of technical infrastructure needs assessments, particularly focused on testing different scales and spatial patterns of growth, to inform future strategic planning for the period beyond the current Structure Plan.	CH, Regional Planning Body	2008/9

8.4 Future Policy Issues for Growth

Cambridgeshire Horizons is not a policy-making body – it is focused on overseeing the delivery of the Growth Area strategy set out within the Structure Plan and any future planning strategy. However, it is clear that as a sub-regional body with oversight of specific challenges associated with development of the sub-region, it needs to be aware of specific policy issues and how its operations are effect.

A number of key policy issues have been identified:

- Climate Change
- Demographic Change and the Ageing Population
- Construction Capacity
- The link to Economic Development

8.4.1 Climate change

From a public policy perspective, the Stern Review defined the terms of the climate change debate. Climate change is real, is happening already and is a fundamental threat to our future but with the correct actions, beginning now, the worst effects can be avoided. The impacts of climate change are now a fundamental consideration when considering levels of growth such as that proposed within the Cambridge sub-region.

The requirement for a step change in the supply of housing in the sub-region is inextricably linked to predicted wider economic and demographic growth, supported by necessary infrastructure provision. In response to the climate change agenda, the challenge for the sub-region is to ensure that growth is delivered in a manner that is sustainable in the long term.

The fundamental synergy of climate change and the Growth Area agenda is reflected in the identification of Northstowe as an 'Eco Town' by the Government. However, there is further work to do to translate this ambition into the tangible actions required from all those responsible for implementation.

The key implementation issues in delivering sustainable growth across the sub-region can be considered under the following areas.

Housing Delivery

- Understanding the implementation tasks associated with a policy response to climate change that is, where appropriate, adaptive (responding to impacts) but also mitigative (trying to prevent climate change)
- The impact of proposed Government legislation including incremental legislation being proposed to deliver carbon zero homes by 2016 (Building A Greener Future: Towards Zero Carbon Development), changes to Part L Building Regulations and the implications of the Code for Sustainable Homes: A Step Change in Sustainable Home Building Practice.
- Identifying where parts of the sub-region may be particularly susceptible to the potential impacts of climate change (e.g. flooding, water shortages) and shaping how future delivery should take these into account.
- The reaction of the planning system to incorporate clear sustainable design and construction policies to provide clarity for developers early in the process
    - The impact of Planning Policy Statement: Planning and Climate Change;; and
    - What needs to be done now to ensure that development across the sub-region adopts best practice
- The response of the development industry to changing legislation and planning policies – managing the trade-offs between possible increased build costs and the ability to secure developer contributions to support wider infrastructure;
- Although there is significant new development, the primary source of energy consumption will continue to be existing households, their homes, and travel. There will be a requirement, falling outside the current remit of Cambridgeshire Horizons, for promoting energy efficiency in existing communities.

Infrastructure Requirements

- Identifying the potential ways in which climate change will drive long term behavioural change (from a demand and supply side) and how, for example, minimising resource usage will impact on utility infrastructure requirements. This should, in particular focus on water issues (e.g. water storage during winter, demand management in summer)
- Understanding what will be the impact of the changing nature of utility provision and how it is delivered e.g. Combined Heat and Power systems and District Heating
- Understanding how the revenue implications of responses to climate change should be accommodated, such as, For example, Sustainable Urban Drainage Systems (SUDS) and their long term revenue funding
- The requirement for modal shifts in sub-regional transport infrastructure – linked to the findings of the Eddington Report, which considered long-term links between transport and the UK's economic productivity, growth and stability, within the context of a commitment to sustainable development. The sub-region must take a long term view towards its transport strategy, promoting alternative methods of travel to protect the unique identity of the city core whilst tackling sub-regional capacity constraints. This is part of the wider TIF programme. The importance of the TIF programme to delivery of the region's sub-regional infrastructure and achieving modal shift is critical.

Way Forward

The policy issues for climate change fall outside the specific delivery plan scope, but there is a clear requirement to ensure that the implementation challenges associated with the climate change policy agenda are properly reflected.

The championing of the policy response to climate change is the role of the local authorities, working within the Government's policy framework. However, there is a clear demand among stakeholders for implementation plan for this policy response, using Northstowe's Eco Town status as the pilot. This should cover

- The role of Cambridgeshire Horizons, in terms of its ability to:
  - Formulate ways in which, practically, increased environmental standards can be achieved.
  - Use its implementation guidance to influence planning for sustainable design in terms of development lay outs, local jobs and facilities to reduce the need to travel etc; and
  - Use patterns of development and other tools (e.g. s.Green Travel Plans associated with new developments etc) to promote behavioural change.
  - Promote exemplar development – whether that be for all homes on developments sites or, accepting that climate change requires an incremental approach, for smaller schemes within major developments to promote the case for sustainable homes.

Actions	Who?	Timescale
CH and its partners to review existing guidance, and, if necessary, prepare a new Implementation Plan for responding to Climate Change within new developments and infrastructure.	CH, County and District Councils	2008

8.4.2 Demographic Change and the Ageing population

By 2011, the first wave of the Baby Boom generation will reach retirement age, which will mark a new era for the government. One measure neatly summarises this challenge: in the coming years, the ratio of working-age people (15-65 years) to children (0-14 years) and elderly (65+), the "dependency ratio", will rise in the UK. Several factors are causing dependency ratios to surge in developed countries such as low fertility rates, and a reduced workforce participation rate among the elderly

An ageing population raises issues for Central Government at the macro-economic level in terms of the impact of a smaller percentage of workers to cover the tax burden. This has in recent years been countered by the significant in-migration flows from younger workers, often from EU accession states, who have occupied posts within key economic sectors. At the sub-regional level, demographic change has impacts for service providers across education, health, and other sectors, in terms of future demand for services and other factors such as access, language etc.

Actions	Who?	Timescale
At the sub-regional level, in Cambridgeshire, detailed analysis is required to understand what the impacts of an ageing population could be beyond 2021 and also, the broader demographic mix of population, so that service providers across education, health and other sectors are working to a shared evidence base. This will need to consider: • The requirement to ensure suitable provision for residential homes for the elderly (and funding for wider welfare issues), to feed into developer negotiations regarding housing mix; and • An onus on the PCT to plan accordingly for the provision of health care services. • School and education provision • Issues around accessibility and mobility to services	County Council, CH, and partner agencies	2008

8.4.3 Construction Capacity

With any significant increase in level of development activity, there will be increased pressures on the construction industry to deliver. And the growth that is taking place in the sub-region is just one part of a much wider Sustainable Communities Plan which is seeking to increase the level of supply of new housing. There are also factors for more general construction to deliver infrastructure and other development needed to support housing growth.

The Barker Review highlighted a number of observations about efficiency and practices within the house building industry which are pertinent. More generally, there have been a number of reviews of Construction Capacity across the UK. The recent study for OGC by Deloitte is referenced below:

The Construction industry is very complex, with a number of different factors determining capacity at any one time, these include:

- Industry Structure & Conduct;
- Labour and Skills
- Materials Markets;
- Plant Markets;
- Financial Markets;
- Innovation, Investment, Efficiency & Productivity;
- Planning;
- Procurement;
- Legislation & Regulation

Based on current economic conditions, labour markets, materials, and pre-construction issues (planning, procurement, legislation) are the key determinants of capacity at a macro level, and this impacts on issues such as prices for work, including the pricing of infrastructure. The recent work undertaken for OGC specifically set out to test the capacity of the Construction Industry to deliver over the coming years. It suggests that, based on research and Model forecasts, the UK construction industry is not expected to face significant capacity constraints to 2015. However, spatial concentrations of activity (such as in the sub-region) may lead to very specific local effects, such as logistical/transport issues or labour supply (or indeed, accommodation for workers), and there may well be specific local issues that need to be managed within the sub-region. Moreover, recent report (January 2006) for DTI has suggested there are specific issues associated with the house building industry (e.g. around specific skills and labour shortages – such as in brick laying – and in the implications of applying modern methods of construction).

A thorough exploration of these issues is outwith the ambit of the LTDP, but might be worthy of consideration.

Actions	Who?	Timescale
CH should consult with stakeholders including private sector developers to explore whether a more detailed review of construction capacity issues in the sub-region is required.	CH, LSC, local authorities, private developers	2007+

Industry Structure

In general, it is assumed that the presence of many competitors in the construction industry leads to lower prices in the industry and that a lack of competition can lead to capacity issues and higher prices. In turn reduced competition (due to the lack of incentives), or too much competition (driving down margins) can reduce investment or innovation, which can further restrict capacity and responsiveness through lower flexibility.

New foreign entrants into the UK market demonstrate that capacity is, to an extent, flexible with little evidence of barriers to entry, but there has been a notable trend of failure by those international organisations choosing to enter and set-up, rather than expanding through the takeover of incumbent firms.

At the other end of the size spectrum there are significant numbers of smaller operators and self-employed construction workers. Whilst the number of firms and level of competition within this element of the industry is stronger, there are prospective problems obtaining smaller teams to work together on the sort of projects that cannot be handled entirely by the major players. Large construction companies act as co-ordinators or intermediaries between the client and numerous smaller contractors.

Moreover, relatively low margins in the industry point towards a competitive, rather than an oligopolistic, market. As such, whilst there may be a relatively small number of major UK organisations, the way the industry operates in practice means that levels of competition do not adversely affect prices.

However, the capacity of firms within the industry to bid and prohibitively high bid costs can work to reduce competition and increase prices at tender stage. This is effectively a barrier to entry against medium sized industry operators.

In terms of housebuilding specifically, the industry has undergone consolidation and this is projected to continue. However, the UK house building industry is still very fragmented with Persimmon, Barratt, TaylorWimpey, the top 3 players, accounting for just 28% of the overall market.

Labour and skills

General labour and skills shortages in the construction sector have been alleviated to some extent since the expansion of the EU and the associated influx of workers. However, industry consultations suggest that in general, the absolute number of workers is not a core concern. As well as some skills gaps in certain trades, there are significant skills shortages in specific professional disciplines, particularly:

- Leadership;
- Project management; and
- Specific aspects of design (e.g. M&E design).

Wage inflation in construction, used as a proxy indicator for skills shortages, has been 6.5 per cent per annum since 1985 – much higher than economy-wide wage inflation of 4.4 per cent over the equivalent period.

However, the influx of accession state EU workers has had a balancing impact more recently. Over the 5 years to 2006, the average increase in wages for skilled workers has been 4.4 per cent per annum, identical to average wage inflation for the economy as a whole.

Moreover, wage inflation for unskilled workers in the construction industry has been just 3.9 per cent – 0.5 per cent lower than this economy-wide average. This re-enforces the point that the key capacity constraints stem from the upper end of the skills spectrum.

Work for DTI on the link between housing and the economy suggests application of the Barker Review's house building targets, could, in the absence of improvements in labour productivity and switching of labour from other parts of the construction sector, require 90,000 to 165,000 additional workers nationwide, an increase of 30-60% of the existing workforce engaged in housebuilding. Equally, it could drive forward adoption of Modern Methods of Construction (MMC)

Actions	Who?	Timescale
CH should work alongside the LSC, local authorities and private sector contractors to identify how any sub-regional skills shortages associated with construction can be overcome to maxmise the economic synergy with the Growth Area plans.	CH, LSC, local authorities, private developers	2008+

Materials

The overall supply of materials to the construction industry is flexible and adaptive, and it does not present any general capacity constraints for the industry – although of course the shorter the lead time the higher the potential for a premium price. However, research suggests that some specific products are more specifically constrained by long lead times. None of these are particularly associated with house building. However, lifts and street, curtain walking/cladding may be a factor for some infrastructure.

Inflationary pressures in materials markets are influenced to a greater extent by external factors, such as energy prices and the global economic climate, than by demand levels in the UK market. This finding can seem contrary to some anecdotal comment in the industry, but is robustly substantiated by industry stakeholders, who have repeatedly pointed to the globalisation of the construction materials market. Data analysis suggests that over the last 20 years, materials price inflation has been substantially lower than the overall output price inflation as well as wage inflation in the industry.

Pre-construction capacity

A more significant factor on construction capacity for delivering infrastructure is the importance of pre-construction factors in determining inflationary impacts and cost escalations. The following pre-construction issues are major constraints on supply and/or impacts on supply-side behaviours in the industry which have consequences for the level and nature of responsiveness to public sector demand for major infrastructure projects:

- management imposed constraints due to high bidding costs (‘cherry-picking’ the most attractive opportunities, no-bidding the others);
- planning uncertainty and long lead times in responding to major public sector investment plans;
- uncertainty about future demand profile because of lack of forward planning information for public programmes and major projects;
- Inefficient procurement strategies/routes and their risk-reward trade-offs;
- lack of design/specification clarity upfront, carrying risk of significant post-contract design changes which impact on cost and on lead times (see materials above); and
- the capacity and capability within client organisations.

Actions	Who?	Timescale
CH should consult with delivery stakeholders responsible for procurement and commissioning of infrastructure and building works to identify whether there is a need within the sub-region for best practice dissemination on managing procurement processes for major development projects. If a requirement is identified, it should engage OGC and 4Ps to provide guidance.	CH	2008+

8.4.4 Aligning Growth to Economic Development

The global economic landscape is changing rapidly and it brings new challenges and opportunities for the sub-region. In order to benefit from these new developments and avoid losing comparative advantage in the international market, the region needs to draw a roadmap to sustain success. Like any other advanced economy, the choice for the region is not between status quo and growth but between sustainable prosperity and decline, the latter would be characterised in the sub-region by collapse in services, social polarisation and the further isolation of coastal areas.

There are perceived and real tensions between social, economic and environmental priorities. The sub-region’s future growth must be viewed in this context and whilst meeting housing needs is important,, social inclusion and economic competitiveness must not be ignored either.

The precise relationship between housing growth and economic development has not been subject to detailed analysis, and differs between localities. There is a specific issue for policy makers, particularly flowing from the proposals of the Sub-National Review, on how Regional Spatial Strategy and the Regional Economic Strategy should be better aligned within an Integrated Regional Strategy, and an analytical challenge on the nature of the relationship between housing and employment/economic change.

This, and the strategy making process involved in aligning economic and spatial choices within RSS and LDFs is beyond the ambit of the LTDP. There are, however, a number of practical implementation issues to be considered:

- Securing the right housing mix within new developments (in terms of affordability, size, type and tenure) to provide accommodation for households from different economic groups, such that key workers and those from key economic growth sectors, have homes within the sub-region. The ACORN or MOSAIC classification can assist with the analysis to inform such analysis.
- Maximising the economic impact of new construction development in the form of local employment, local sourcing of materials (whilst balancing supply chain cost efficiencies) and other aspects
- Maintaining transportation linkages between areas of lower employment and new employment opportunities, in terms of public transport service provision (e.g. subsidised bus services between employment and residential nodes).
- Promoting the use of s.106 agreements to achieve economic development obligations (such as local labour schemes)

- Ensuring that future spatial planning processes deliver alignment of economic development and housing and infrastructure objectives.

Actions	Who?	Timescale
CH should consult with delivery stakeholders responsible for procurement and commissioning of infrastructure and building works to identify whether there is a need within the sub-region for best practice dissemination on managing procurement processes for major development projects. If a requirement is identified, it should engage OGC and 4Ps to provide guidance.	CH	2008+

9. Future Actions

This report identifies the infrastructure requirements and indicative costs of up to £4.7 billion (including affordable housing) to support identified housing growth in the sub-region up until 2021. Based on high level modelling, further consideration is given to infrastructure requirements and costs from 2021 to 2031 which are identified to be up to an additional £2.75 billion.

With these requirements and costs identified, albeit at a strategic level, the critical issue relates to how infrastructure should be delivered by both the public and private sector. Significant progress has been made, with existing commitments and anticipated funding, and the potential role of the private sector going a long way to meeting these costs.

However, the challenge is significant, and all partners will need to work hard to make it a success. Based on the consultation programme and Workshop a number of innovative methods for funding and delivering growth have been identified that should be explored further. These ideas and the immediate next steps required are summarised below:

9.1.1 Maintaining the Long Term Delivery Plan

- Maintain project programmes/infrastructure schedules to keep them 'live' and update as new/better information becomes available.

9.1.2 Rolling Fund – further explore the potential for implementation in accordance with the recommendations in the main report:

- Establish a Working Group lead by Cambridgeshire Horizons and made up of key sub-regional and regional stakeholders; and
- Undertake market testing and feasibility work to understand how the principle of the Rolling Fund models identified (Basic Rolling Fund Model, Added Value Rolling Fund or Public Private Fund) could work in practice across the sub-region. This should include financial modelling, development of relevant terms of reference and identification of programme going forward, including identifying need for relevant Local Authority and Government approvals.

9.1.3 Planning Obligations:

- Prepare a sub-regional Section 106 Planning Framework, encompassing best practice and approach to apportionment issues (including mapping of critical sub-regional and cross-boundary infrastructure requirements);
- Explore the feasibility of Section 106 value uplift mechanisms; and
- Monitor PGS and understand potential implications.

9.1.4 Funding Models and Sources

- CH should work with its partners to ensure that Growth Area plans and infrastructure needs are properly reflected within the appraisal of funding and delivery models.

9.1.5 Funding by sector

- Sector-specific funding and delivery strategies in areas where there are longer term funding issues to overcome to feed into spending priorities of Government flowing from CSR07
- Best Practice Workshops on Funding Models for different forms of infrastructure

9.1.6 Governance

- CH and its partners should begin the process of considering future implications of the new area-based delivery chain, including potential MAAs, performance management, and governance and accountability regimes,
- CH should consider its scope and breadth and how its boundaries of responsibility relate to other delivery agencies at either a local or regional/sub-regional level.

9.1.7 Spatial Strategy and Long Term Planning

- CH and its partners should map out the spatial planning process for taking forward the future growth agenda, including how infrastructure planning and implementation issues will be properly embedded within it.
- CH should undertake a series of technical infrastructure needs assessments, particularly focused on testing different scales and spatial patterns of growth, to inform future strategic planning for the period beyond the current Structure Plan.

9.1.8 Future Policy Issues for Growth

- CH and its partners to review existing guidance, and, if necessary, prepare a new Implementation Plan for responding to Climate Change within new developments and infrastructure

9.1.9 Demographic Change and the Ageing Population

- At the sub-regional level, in Cambridgeshire, detailed analysis is required to understand what the impacts of an ageing population could be beyond 2021 and also, the broader demographic mix of population, so that service providers across education, health and other sectors are working to a shared evidence base. This will need to consider:
- •The requirement to ensure suitable provision for residential homes for the elderly (and funding for wider welfare issues), to feed into developer negotiations regarding housing mix; and
  - An onus on the PCT to plan accordingly for the provision of health care services.
  - School and education provision
  - Issues around accessibility and mobility to services

9.1.10 Construction Capacity

- CH should consult with stakeholders including private sector developers to explore whether a more detailed review of construction capacity issues in the sub-region is required.
- CH should work alongside the LSC, local authorities and private sector contractors to identify how any sub-regional skills shortages associated with construction can be overcome to maxmise the economic synergy with the Growth Area plans.
- CH should consult with delivery stakeholders responsible for procurement and commissioning of infrastructure and building works to identify whether there is a need within the sub-region for best practice dissemination on managing procurement processes for major development projects. If a requirement is identified, it should engage OGC and 4Ps to provide guidance.

Appendix A: Documents Reviewed

Cambridgeshire Horizons provided us with the following list of documents which were reviewed to inform and contextualise the study:

Cambridge City Local Plan 2006

North West Cambridge Area Action Plan - Issues and Options

Cambridge East Joint Area Action Plan

Cambridge Southern Fringe Area Development Framework

Cambridge Station Area Development Framework

Sustainable Communities Supplementary Planning Document (in preparation)

LDF Core Strategy (submission version)

Northstowe Area Action Plan (submission version)

LDF Development Control Policies (submission version)

Cambridge Southern Fringe Area Action Plan

North West Cambridge Area Action Plan (in preparation)

South Cambridgeshire Local Development Scheme

South Cambridgeshire Gypsy and Travellers Development Plan Document

Biodiversity Strategy

Cambridge Sub Regional Partnership and Development Plan

Cambridgeshire and Peterborough Structure Plan

Regional Spatial Strategy for the East of England

Report from Panel that presided over the recent RSS Examination in Public

Cambridgeshire Local Transport Plan (LTP)

Long Term Transport Strategy / TIF (emerging)

Green Infrastructure Strategy

Arts and Cultural Strategy

Sports and Leisure Strategy

The Cambridge Phenomenon - The Growth of High Technology Industry in a University Town

The Impact of the University of Cambridge on the UK Economy and Society'

Implementing the Cambridge Sub Regional Strategy

Regional Planning Guidance for the former East of England area (REF), published in 2001

Local Improving Health Plans Local PCT

Choosing Health white paper Government

Cambridgeshire Minerals and Waste Development Scheme (emerging)

Regional Strategies (Economic, Health & Housing)

Quality of Life Strategies

Overall Strategy for Growth (to 2016)

Communities Plan 2003

Cambridge Sub Region Infrastructure Costs 1 Sept 06

Cambridge Sub-Regional Infrastructure Costs 1 Sept 2006

RTP report final July 06

Agenda item No 11 - Strategic Infrastructure Investment

Appendix 1 Agenda Item No. 11 - Strategic Infrastructure Investment

Driving Forward Sustainable Communities

Agenda Item 10 Major Developments & Infrastructure

Agenda Item 12 CSR Submission

Appendix 2 No. 11 - Table

Business Plan 2004-07

Horizons Key Components

Overview Timescale March 2006

Strategy for Enterprise Hubs in Greater Cambridge Area - SQW Report

Economic Interventions for Greater cambridge Sub-Region - Roger Tym

Appendix B: Stakeholder Consultations

Contact	Position / Organisation
Anderson, Sue	Partnership Director, Learning and Skills Council
Birch, Mike	Virgin Media
Burns, Ian	Cambridgeshire PCT
Beecroft, Sue	Sub-regional Housing Strategy Co-ordinator, Cambridgeshire Horiazons
Cannard, Adrian	Head of Planning and Housing, EERA
Catchpole, Stephen	Chief Executive, Cambridgeshire Horizons
Childs, Katie	East Cambridgeshire District Council
Cook, Paul	Head of Service, Transport Policy and Strategy, Cambridgeshire County Council
Dawe, Nicholas	Director of Finance and Performance, Cambridgeshire County Council
Galey, Mick	AWG
Garratt, Martin	Director, Greater Cambridge Partnership
Heinrich, Susan	EEDA
Hodson, Chris	Fenland District Council
Hughes, Graham	Director of Sustainable Infrastructure, Cambridgeshire County Council
Human, Brian	Cambridge City Council
Ingram, Steven	Huntingdon District Council
Jones, Gareth	Head of Planning, South Cambridgeshire District Council
Jones, Richard	Strategic Planning, Environment & Community Services, Cambridgeshire County Council
Little, John	Cambridgeshire County Council
Payne, Simon	Director of Environment and Planning, Cambridge City Council
Price, Michael	Strategic Planning, Environment & Community Services, Cambridgeshire County Council
Whelan, Joseph	Head of New Communities, Cambridge County Council
Whiteley, Jim	EDF Energy

Appendix B: Infrastructure Costs

Budget Phasing - All Schemes (2000-2021)		2000-05	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL COST: Developer contribution / Investment	TOTAL COST: Public Sector			Expenditure Breakdown: Spent	Committed	Anticipated	Potential Dev Cont	Future Funding Requirement
SUB-REGIONAL STRATEGIC INFRASTRUCTURE	Growth Area Delivery Grant	2.73	8.9																	11.6			11.6				
	Integrated Transport Block and Major Schemes	58.1	10																	68.1			68.1				
	A14 Upgrade								175.00	175.00	175.00	175.00								700.00	DfT				700.00		
	A428 Caxton Common to Hardwick	2.00	9.00	44.00																55.00	DfT		11.00	44.00			
	A428 Caxton to St. Neots (inc. improvements to Black Cat r-about)												82.50	82.50	82.50	82.50				330.00					330.00		
	Cambridgeshire Guided Busway	1.20	2.50	40.00	72.50														23.00	93.20	DfT (Total Cost £116.2)		3.70	89.50		23.00	
	Papworth Everard Bypass	0.20	0.60	7.20																8.74			0.80	7.20			
	Segregated Busways within Cambridgeshire					46.60	46.60	46.60												140.00	TIF						140.00
	Cambridge City Centre Public Transport Infrastructure							58.30												58.30	TIF						58.30
	Extended / new and links to Park & Ride sites				22.85	22.85	22.85	22.85	22.85	22.85	22.85									160.00	TIF						160.00
	Environmental / Efficiency Improvements				8.50	8.50	8.50	8.50	8.50	8.50	8.50									60.00	TIF						60.00
	Ely Southern Bypass				8.00	17.00	8.00													33.00	TIF						33.00
	Other Local Road Improvements & Transport			6..50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50		100.00	LTP				100.00		
	Rail Investment				2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00						20.00	SRA				20.00		
		64.23	31.00	91.20	120.35	103.45	94.45	144.75	214.85	214.85	214.85	183.50	91.00	91.00	89.00	89.00	6.50	6.50	23.00	1837.94		1860.94	95.20	140.70	1150.00	23.00	451.30
NORTHSTOWE	.14 Permanent Works contribution				10.00	10.00													20.00							20.00	
	Link Roads Contribution: Dry Drayton Junction					69.00													69.00								
	Bar Hill Junction																									69.00	
	Distributor Road C					5.00	5.00												10.00							10.00	
	Distributor Road D					4.00	1.00												5.00							5.00	
	Cambridgeshire Guided Busway																						ACCOUNTED FOR IN SUB-REGIONAL INFRASTRUCTURE				
	Cambridgeshire Guided Busway: Service Provision					1.00	0.80	0.60	0.40	0.20									3.00							3.00	
	Contribution towards conventional bus services					0.65	0.55	0.45	0.35	0.20									2.20							2.20	
	Additional Transport Obligations					0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	5.00							5.00	
	Countryside Access via Rights of Way						0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			2.00							2.00	
				0.00	10.00	89.95	7.85	1.55	1.25	0.90	0.50	0.50	0.50	0.50	0.50	0.50	0.30	0.30	116.20	0.00		116.20	0.00	0.00		116.20	
SOUTHERN FRINGE	e 1 (Hauxton Road Shelford Road)			6.00																6.00	GAF / Developer			6.00			
	Addenbrooke's Access Road: Phase 2 (Shelford Road to Addenbrooke's Hospital)				8.00	4.00														12.00	GAF / Developer			12.00			
	Cambridgeshire Guided Busway																		10.40					10.40			
	Cambridgeshire Guided Busway: Service Provision					0.50	0.40	0.30	0.20	0.10													ACCOUNTED FOR IN SUB-REGIONAL INFRASTRUCTURE				
	Contibution towards conventional bus services					0.50	0.40	0.30	0.20	0.20									1.60							1.60	
	Physical infrastructure links to external walking, cycling, equestrian				0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14						1.30							1.30	
	Countryside Access via Rights of Way				0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19						1.34							1.34	
				6.00	8.34	5.34	1.14	0.94	0.74	0.64	0.34	0.34	0.34	0.00	0.00	0.00	0.00	0.00	14.64	18.00		32.64	0.00	28.40		4.24	
CAMBRIDGE NORTH WEST	astructure & Bus / Cycle Priorities				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			10.00							9.96	
	Physical infrastructure links to external walking, cycling, equestrian				0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13			1.50							1.50	
	Countryside access via Rights of Way				0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17			2.00							1.99	
				0.00	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	0.00	0.00	13.50	0.00		13.50				13.45	
CAMBRIDGE EAST	Cambridge Busway												30.00	30.00						60.00	TIF						60.00
	Perne Road												21.00	21.00						42.00	TIF						42.00
	Cherry Hinton Access Road				2.50	2.50													5.00							5.00	
	New interchange on A14 replacing Fen Ditton interchange linked to Airport Way											3.00	6.00	3.00					11.00							11.00	
	Cambridge East Access Costs						2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20				20.00							20.00	
	Physical infrastructure links to external walking, cycling, equestrian						0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55				5.00							5.00	
	Countryside access via Rights of Way						0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66				6.00							6.00	
				0.00	2.50	2.50	3.41	3.41	3.41	3.41	3.41	6.41	60.41	57.41	3.41	0.00	0.00	0.00	47.00	102.00		149.00			0.00	47.00	102.00
NORTHERN FRINGE EAST	Chesterton Station						7.50	10.00	7.50											25.00	TIF						25.00
	Chesterton Sidings: Access road and improved transport links								7.50	7.50										15.00	TIF						15.00
	Physical infrastructure links to external walking, cycling, equestrian										0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.75							0.75	
	Countryside access via Rights of Way										0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	1.00							1.00	
				0.00	0.00	0.00	7.50	10.00	15.00	7.50	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	1.75	40.00		41.75	0.00	0.00	0.00	1.75	40.00
ADDITIONAL DEVELOPMENT																											
Market Towns:	anges & Urban Corridor Schemes			3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33		50.00	LTP				50.00		
Other Sites > 100:	Requirements (Local S106 contr.)			0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	12.00							12.00	
				4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	12.00	50.00		62.00	0.00	0.00	50.00	12.00	
TRANSPORT		64.23	31.00	101.33	146.44	206.49	119.60	165.90	240.50	232.55	224.57	196.22	157.72	154.39	98.39	94.98	11.16	11.16	228.09	2047.94		2276.03	95.20	169.10	1200.00	217.64	593.30
SUB-REGIONAL STRATEGIC INFRASTRUCTURE	County-wide S106 contributions	17.00																	17.00				17.00				
	Total Additional Sub-Regional FE Funding Requirement				13.70						0.50								14.20							14.20	
		17.00	0.00	0.00	13.70	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.20	0.00		31.20	17.00	0.00	0.00	14.20	0.00
NORTHSTOWE	Secondary School							26.50						13.50					40.00							40.00	
	Primary School One					5.50													6.80							6.80	
	Primary School Two					5.50													6.80							6.80	
	Primary School Three										6.80								6.80							6.80	
	Primary School Four												6.80						6.80							6.80	
	Primary School Five															6.80			6.80							6.80	
	Primary School Six																	6.80	6.80							6.80	
				0.00	0.00	11.00	0.00	26.50	0.00	0.00	6.80	0.00	6.80	13.50	0.00	6.80	0.00	6.80	80.80	0.00		80.80	0.00	0.00	0.00	80.80	0.00
SOUTHERN FRINGE	ditional Further Education funding																		4.00							4.00	
	Secondary School							21.80											19.50	2.30					2.30	19.50	
	Secondary School - expansion of Netherall School					0.53													0.53							0.53	
	Primary School - expansion of Queen Edith's					0.47													0.47							0.47	
	Nursery - expansion of Homerton Nursery					0.28													0.28							0.28	
	Primary School - expansion of Fawcett School (inc. Children's Centre)							2.50											2.50							2.50	
	Children's Centre (linked with Fawcett School)							1.30											1.30							1.30	
	Primary School - Showground									5.50									5.50							5.50	
	Primary School - Trumpington Meadows				5.50														5.50							5.50	
				0.00	5.50	1.28	0.00	25.60	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.58	2.30		41.88	0.00	0.00	2.30	39.58	0.00
CAMBRIDGE NORTH WEST	Secondary School					8.00	8.00	8.00	8.00										32.00							32.00	
	Primary School - Huntingdon / Histon Road				3.20														5.50							5.50	
	Primary School - Huntingdon / Madingley Road								3.20										5.50							5.50	
				0.00	3.20	8.00	8.00	8.00	11.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.00	0.00		43.00	0.00	0.00	0.00	43.00	0.00
CAMBRIDGE EAST	Secondary School								33.00										33.00							33.00	
	Primary School - North of Newmarket Road						5.00												5.00							5.00	
	Primary School - North of Cherry Hinton							3.20											3.20							3.20	
	Primary School - Cambridge Airport													15.00					15.00							15.00	
	Lifeling Learning Centre													2.70					2.70							2.70	
				0.00	0.00	0.00	5.00	3.20	33.00	0.00	0.00	0.00	0.00	17.70	0.00	0.00	0.00	0.00	58.90	0.00		58.90	0.00	0.00	0.00	58.90	0.00
NORTHERN FRINGE EAST	sion of Manor Community College													10.00					10.00							10.00	
	Primary School - new build Chesterton										5.00								5.00							5.00	
	Lifeling Learning Centre										1.00								1.00							1.00	
				0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	16.00	0.00		16.00	0.00	0.00	0.00	16.00	0.00
ADDITIONAL DEVELOPMENT																											
Market Towns:	Secondary Schools			4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	39.50							39.50	
	Primary Schools			4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	39.00							39.00	
Other Sites > 100:	Secondary Schools			2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	32.00							32.00	
	Primary Schools			2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	32.00							32.00	
				12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	12.26	142.50	0.00		142.50	0.00	0.00	0.00	142.50	0.00
EDUCATION		0.00	0.00	12.26	34.66	32.54	25.26	75.56	56.46	17.76	25.56	12.26	19.06	53.46	12.26	19.06	12.26	19.06	411.98	2.30		414.28	17.00	0.00	2.30	394.98	0.00

Deloitte.

COMMUNITY FACILITIES	SUB-REGIONAL STRATEGIC INFRASTRUCTURE																										
		Regional Events Venue										5.00	10.00	20.00	10.00	5.00											50.00
	NORTHSTOWE	Library & Lifelong Learning Centre						1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16					9.30							9.30	
		Emergency Services (Joint Facility)									4.20									4.20							4.20	
		Additional Community Obligations					0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	2.00							2.00	
					0.00	0.00	0.13	1.30	1.30	1.30	5.50	1.30	1.30	1.30	1.30	0.13	0.13	0.13	0.13	**15.50**	**0.00**		**15.50**	0.00	0.00	0.00	15.50	
	SOUTHERN FRINGE	CPDC / Clay Farm: Health Centre				0.50	0.50	0.50	0.50	0.50	0.50									3.00							3.00	
		Community Facility				0.67	0.67	0.67	0.67	0.67	0.67									4.00							4.00	
		Additional New Youth Facility					0.20	0.20	0.20	0.20	0.20									1.00							1.00	
		Community Facility at Trumpington Meadows				0.18	0.40													0.58							0.58	
		Additional Community Facilities Obligations				0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10						1.00							1.00	
					0.00	1.44	1.87	1.47	1.47	1.47	1.47	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	**9.58**	**0.00**		**9.58**	0.00	0.00	0.00	9.58	
	CAMBRIDGE NORTH WEST	ıs (Including Emergency Services)				0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45				**5.40**	**0.00**		**5.40**				5.40	
	CAMBRIDGE EAST	ıs (Including Emergency Services)						0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	**13.75**	**0.00**		**13.75**				13.75	
	NORTHERN FRINGE EAST	ıs (Including Emergency Services)										0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	**3.00**	**0.00**		**3.00**				3.00	
	ADDITIONAL DEVELOPMENT																											
	Market Towns:	ıs (Including Emergency Services)			0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	9.20							9.20	
	Other Sites > 100:	ıs (Including Emergency Services)			0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	7.00							7.00	
					1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	**16.20**	**0.00**		**16.20**	0.00	0.00	0.00	16.20	
			0.00	0.00	1.06	2.95	3.51	4.92	4.92	4.92	9.12	8.93	13.93	23.93	13.83	7.67	2.67	2.22	2.22	**63.43**	**0.00**		**63.43**	0.00	0.00	0.00	63.43	50.00
HEALTH	SUB-REGIONAL STRATEGIC INFRASTRUCTURE	ıbrooke's Trust Capital programme	56.00	13.80	16.40	16.00	16.00	23.00	35.00	23.00	12.00	0.00	3.00	0.00							214.20	PCT		69.80	16.40	128		
		Addenbrooke's PFI funding		30.00	40.00	21.00	33.70	11.00	10.00	11.00	8.00	11.00	9.00	12.00							196.70	PCT (Total £196.7)		30.00	166.70			
		Addenbrooke's - funding undetermined				4.25	6.00	6.00	3.00	2.25	1.25	0.25	0.25	0.25							23.00							23.00
		Hinchingbrooke Trust Capital / PFI funding	26.00	3.30	7.40	5.00	3.00	3.00	3.00	3.00	6.50	3.00	3.00	3.00							69.20	PCT (Total £69.2)		29.30	7.40	32.50		
		Hinchingbrooke - funding undetermined							2.00	1.50	1.50	1.50	1.50	1.50							9.50							9.50
		Other - county-wide	8.00																		8.00			9.75				
			82.00	47.10	63.80	46.25	58.70	43.00	53.00	40.75	29.25	15.75	16.75	16.75	0.00	0.00	0.00	0.00	0.00	**0.00**	**520.60**		**520.60**	138.85	190.50	160.50	0.00	32.50
	NORTHSTOWE	Health Campus								1.55			1.55		1.55			1.55		**6.20**	**0.00**		**6.20**				6.20	
	SOUTHERN FRINGE	umpington Village Branch Surgery				0.02														0.02							0.02	
	Expansion of existing Health Facility at Queen Ediths and/or Cornford House						0.90													0.35							0.35	
					0.00	0.02	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.37**	**0.00**		**0.37**					
	CAMBRIDGE NORTH WEST	Facilities required						5.00												**5.00**	**0.00**		**5.00**				5.00	
	CAMBRIDGE EAST	Facilities required								6.00						6.00				**12.00**	**0.00**		**12.00**				12.00	
	NORTHERN FRINGE EAST	Facilities required												2.20						**2.20**	**0.00**		**2.20**				2.20	
	ADDITIONAL DEVELOPMENT																											
	Market Towns:	Facilities required			0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	8.00							8.00	
	Other Sites > 100:	Facilities required			0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	6.25							6.25	
					0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	**14.25**	**0.00**		**14.25**	0.00	0.00	0.00	14.25	0.00
			82.00	47.10	64.73	47.20	60.53	48.93	53.93	47.68	30.18	16.68	17.68	19.88	0.93	6.93	0.93	0.93	0.93	**33.82**	**520.60**		**560.62**	138.85	190.50	160.50	39.65	32.50
OPEN SPACE & RECREATION	SUB-REGIONAL STRATEGIC INFRASTRUCTURE	Community Stadium									6.00	6.00								12.00							12.00	
	(Linked to individual development sites)	Ice Rink							3.00	3.00										6.00							6.00	
		Rowing Lake											8.00	8.00						16.00							16.00	
		50m Pool						10.00												10.00							10.00	
		Gymnastics Centre							2.00											2.00		Funding to be supplemented through additional identified packages					2.00	
		Martial Arts							0.50											0.50							0.50	
		8 Courts Hall						2.50												2.50							2.50	
		Indoor Tennis						2.20												2.20							2.20	
		Indoor Cricket						1.20												1.20							1.20	
		Equestrian Centre						1.00												1.00							1.00	
		Water Sports						0.40												0.40							0.40	
		Indoor Bowls						1.00												1.00							1.00	
					0.00	0.00	0.00	18.30	5.50	3.00	6.00	6.00	8.00	8.00	0.00	0.00	0.00	0.00	0.00	**54.80**	**0.00**		**54.80**	0.00	0.00	0.00	54.80	
	NORTHSTOWE	ying Fields & Eqipped Play Areas					2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	**32.00**	**0.00**		**32.00**				32.00	
	SOUTHERN FRINGE	ying Fields & Eqipped Play Areas					1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50					**13.35**	**0.00**		**13.35**				13.35	
	CAMBRIDGE NORTH WEST	ying Fields & Eqipped Play Areas					0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54		**6.50**	**0.00**		**6.50**				6.50	
	CAMBRIDGE EAST	ying Fields & Eqipped Play Areas					0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	**12.00**	**0.00**		**12.00**				12.00	
	NORTHERN FRINGE EAST	ying Fields & Eqipped Play Areas										0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	**3.00**	**0.00**		**3.00**				3.00	
	ADDITIONAL DEVELOPMENT																											
	Market Towns:	ying Fields & Eqipped Play Areas			0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	11.20							11.20	
	Other Sites > 100:	ying Fields & Eqipped Play Areas			0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	9.00							9.00	
					1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	**20.20**	**0.00**		**20.20**	0.00	0.00	0.00	20.20	
			0.00	0.00	1.35	1.35	6.10	24.39	11.59	9.09	12.09	12.47	14.47	14.47	6.47	4.97	4.97	4.97	4.43	**141.85**	**0.00**		**141.85**	0.00	0.00	0.00	141.85	
UTILITIES (inc. WASTE)	SUB-REGIONAL STRATEGIC INFRASTRUCTURE	Water						10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	120.00							120.00	
		Wastewater & Sewerage						2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	30.00							30.00	
		Electricity						10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	120.00							120.00	
		Gas										1.00	1.00							2.00							2.00	
		Telecoms																		0.00							0.00	
		Waste & Recycling PFI Credits				8.75	8.75	8.75	8.75											35.00						35.00		
		Waste & Recycling Additional Capital												7.58	7.58	7.58	7.58	7.58	7.58	45.50							45.50	
					0.00	8.75	8.75	31.25	31.25	22.50	22.50	23.50	23.50	30.08	30.08	30.08	30.08	30.08	30.08	**352.50**	**0.00**		**352.50**	0.00	0.00	35.00	317.50	0.00
	NORTHSTOWE	ousehold Waste Recycling Centre							2.00											2.00							2.00	
		Addition Waste Obligations					0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	3.00							3.00	
		Water			5.00	5.00	5.00													15.00							15.00	
					5.00	5.00	5.20	0.20	2.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	**20.00**	**0.00**		**20.00**	0.00	0.00	0.00	20.00	0.00
	SOUTHERN FRINGE	ousehold Waste Recycling Centre							1.85											1.85							1.85	
		Additional Waste Obligations					0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01					0.10							0.10	
					0.00	0.00	0.01	0.01	1.86	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	**1.95**	**0.00**		**1.95**	0.00	0.00	0.00	1.95	0.00
	CAMBRIDGE NORTH WEST	ousehold Waste Recycling Centre						2.00												2.00							2.00	
		Additional Waste Obligations					0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		0.35							0.35	
					0.00	0.00	0.03	2.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	**2.35**	**0.00**		**2.35**	0.00	0.00	0.00	2.35	0.00
	CAMBRIDGE EAST	ousehold Waste Recycling Centre								5.00										5.00							5.00	
		Additional Waste Obligations					0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08		1.00							1.00	
					0.00	0.00	0.08	0.08	0.08	5.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	**6.00**	**0.00**		**6.00**	0.00	0.00	0.00	6.00	0.00
	NORTHERN FRINGE EAST	Relocation of Sewage Works									88.00									88.00		Awaiting Feasibility Study						88.00
		Waste Obligations										0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	1.10							1.10	
					0.00	0.00	0.00	0.00	0.00	0.00	88.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	**89.10**	**0.00**		**89.10**	0.00	0.00	0.00	1.10	88.00
	ADDITIONAL DEVELOPMENT																											
	Market Towns:	Waste Obligations			0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	4.00							4.00	
	Other Sites > 100:	Waste Obligations			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	3.00							3.00	
					0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	**7.00**	**0.00**		**7.00**	0.00	0.00	0.00	7.00	0.00
			0.00	0.00	5.46	14.21	14.53	34.03	35.88	28.28	111.28	24.42	24.42	31.00	31.00	30.99	30.99	30.99	30.88	**478.90**	**0.00**		**478.90**	0.00	0.00	35.00	355.90	88.00

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