

Infrastructure and Environmental Capacity Appraisal

Final Report

St Edmundsbury Borough Council Forest Heath District Council

May 2009



Nathaniel Lichfield and Partners

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Executive Summary

Introduction

1.1 This Study, prepared by Nathaniel Lichfield and Partners (NLP), considers the environmental capacity of settlements and the need for and means of providing and maintaining social, physical and environmental infrastructure to support growth in the Forest Heath District Council (FHDC) and St Edmundsbury Borough Council (SEBC) areas, for the periods to 2021 and 2031.

Guide to the Study

- 1.2 The Study comprises the following key components (with the relevant section of the main report identified in brackets):
 - A background review of evidence, including the development of three different growth scenarios (Low, Medium, and High) for future levels of population increase based on the Regional Spatial Strategy (RSS) and National Housing and Planning Advisory Unit (NHPAU) supply range which set the context against which to consider infrastructure requirements and environmental capacity (Section 4);
 - b A baseline assessment of the current infrastructure provision in the Study area, identifying tipping points or thresholds where existing infrastructure will reach a theoretical capacity for each settlement (Section 5);
 - c An assessment of the physical and environmental constraints to growth in settlements within the Study Area, based on the emerging core strategies respective settlement hierarchies; the formulation of opportunity growth areas, where future development might be possible, based on the settlement hierarchy, the baseline assessments and feedback from stakeholders on identified environmental constraints, giving a capacity range for each settlement against which to test future infrastructure requirements (Section 6);
 - d The application of a set of benchmarked standards of infrastructure provision and consideration of stakeholder responses to identify infrastructure requirements to support the identified capacity ranges for each settlement, including an analysis of the marginal cost impacts associated with infrastructure provision for additional growth in different types of settlement (Section 7);
 - e Use of the growth scenarios (see a above) to provide a strategic indication of infrastructure requirements and associated costs for different levels of growth for each district based on the RSS. These are to be considered alongside, but distinct from, the identified long term environmental capacity ranges for each settlement which have the potential to be well above the

level of development capable of coming forward within the plan period (Section 7);

- f A review of the costs of infrastructure provision to support growth and an assessment of the funding and delivery mechanisms (Section 8);
- g An assessment of the infrastructure and environmental constraints and pressures to define a theoretical environmental capacity range and an optimal level of growth based on the marginal costs of infrastructure provision within that range (Section 9 and Appendix 8);
- h A series of workshops and follow-up stakeholder consultation to engage with the Local Authorities, County Council representatives, other agencies, and infrastructure providers to underpin our knowledge in undertaking all of the above stages (Appendix 7).
- 1.3 It is important to note that this report and its appendices are the outputs of NLP, an independent consultancy working to the brief set by SEBC and FHDC. It will contribute to the evidence base for the respective authorities' Core Strategies and support a future Integrated Delivery Plan and Monitoring and Implementation Plan. For this reason, this report must not be considered in isolation and forms just one input into a wider suite of evidence feeding into the Local Development Frameworks. Importantly, the estimates of environmental capacity and the growth scenarios are not statements of Council policy and do not take account of other factors that will be relevant, including market delivery, and various policy choices and judgements that are outwith the ambit of this work.
 - This executive summary is presented under the following headings:
 - Background
 - Approach and Key Findings
 - Summary Schedule for "Optimal Range" of Growth

Background

- 1.5 This Study has been developed as a response to SEBC and FHDC's need to consider the infrastructure issues and capacity implications of meeting the adopted RSS growth figures in the current round of Local Development Documents (LDDs) and to look at longer term requirements.
- 1.6 The RSS housing target for FHDC is 6,400 dwellings to be met between 2001 and 2021 with an indication of post 2021-2031 requirements at 370 per annum. SEBC has a target of 10,000 dwellings with an indication of post 2021-2031 requirements at 540 per annum. The RSS designates Bury St Edmunds as a Key Centre for Development and Change and Haverhill and Newmarket as part of Cambridge Sub-Region. St Edmundsbury was designated as a Growth Area in 2008.

1.4

- 1.7 New development should be in accordance with the emerging Core Strategies. In order to conform with the RSS, the majority of new development should be located within the towns and key service centres and sustainable primary villages. The settlement hierarchies identified by the respective authorities emerging Core Strategies provides the basis and policy grounding for this Study. These settlements are identified as the 'preferred settlements' for growth, although it is recognised that the settlement hierarchy may change during the finalisation of the Core Strategies.
- 1.8 This Study also considers the infrastructure and environmental capacity thresholds which could limit potential housing growth and assesses how these may be overcome. The purpose of the Study therefore seeks to address the following key questions:
 - What are the constraints, and therefore the opportunities, for growth?
 - What infrastructure will be needed to support the growth?
 - When will it be needed?
 - How can it be funded and maintained in the long term?
 - What are the associated risks?

Approach and Key Findings

1.9 In order to address these key questions the overall approach and key findings are outlined below:

Background Review and Development of Growth Scenarios

- 1.10 NLP undertook a review of policy and background evidence to establish the strategic context and set the parameters of the Infrastructure and Environmental Capacity Appraisal. It was identified that, although there is an unprecedented pressure for housing growth, there is also the need to ensure development can be accommodated in a sustainable manner. Understanding the infrastructure requirements to support growth is key to creating sustainable communities in any given location.
- 1.11 Working with the two local authorities and representatives of the County Council NLP agreed the base growth scenario to 2021 (i.e. the current RSS) and the three different growth scenarios (Low, Medium, and High) which provided the context for assessing the future infrastructure need and identifying the environmental capacity issues in the FHDC and SEBC areas to 2031.
- 1.12 These scenarios were established through the adopted RSS and the NHPAU supply range for the East of England, pro rata adjusted. The scenarios were agreed with both authorities and the County Council and used a range of low, medium and high growth, with medium growth being the current RSS requirements. The low figures were based on previous RSS targets and the high figures were added for testing purposes. It should be noted that there is no requirement for either Council to follow the rates of growth above the RSS

requirement, and no decisions have been made. Growth beyond the RSS level does not imply support for such growth by the local authorities. However, within this Study the high growth scenario allows for greater clarity in testing funding options for longer term infrastructure projects, especially as growth is unlikely to end in 2031.

Forest Heath

1.13

The housing requirements for the three growth scenarios for the period of 2008 to 2031 would require the provision of housing across the district equal to 8,470, 10,210 and 13,070 units respectively. This equates to a difference of 4,600 dwellings between the low and high growth scenarios. These figures include sites with planning permission not yet completed and undeveloped sites in Local Plans.

	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2008 - 2021	4,770	5,750	7,360
2021 - 2031	3,700	4,460	5,710
Total	8,470	10,210	13,070

Table 1 Executive Summary: Growth Scenarios for Forest Heath - Source: SCC / NLP analysis

St Edmundsbury

1.14

The housing requirements for the three growth scenarios for the period of 2008 to 2031 would require the provision of housing across the district equal to 12,360, 14,900 and 19,070 units respectively. This equates to a difference of 6,710 dwellings between the low and high growth scenarios. These figures include sites with planning permission not yet completed and undeveloped sites in Local Plans.

	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2008 - 2021	6,960	8,390	10,740
2021 - 2031	5,400	6,510	8,330
Total	12,360	14,900	19,070

 Table 2
 Executive Summary: Growth Scenarios for St Edmundsbury - Source: SCC / NLP Analysis

Baseline Analysis

Baseline Infrastructure Assessment

1.15 An audit of existing infrastructure and an assessment of the current infrastructure pressures has been undertaken, and considers a broad spectrum

of infrastructure classes which include various types of social, green and physical infrastructure.

- 1.16 The assessment also includes an analysis of the current infrastructure tipping points i.e. how much development can be accommodated in each settlement before provision of any new infrastructure is required, taking into account the relative prioritisation of infrastructure set out within the introduction of this report.
- 1.17 In general, across the identified settlements, the provision of infrastructure currently reflects the size of the settlements it serves. Social infrastructure types such as schools, health and community facilities are particularly well provided in the towns as there is sufficient critical mass of population to support them. The smaller settlements, however, lack some elements of basic social infrastructure which is a common problem for rural communities. In contrast outdoor sports facilities tend to have good provision in rural smaller settlements, potentially explained by the historic role that recreation fields have played in rural areas, and the more intense use of play pitches in urban areas. The larger settlements also tend to have better physical infrastructure provision, with utilities networks and transport networks better equipped for serving large numbers of people, although in some areas these are coming under increasing pressure.
- 1.18 Overall, it is clear that the most suitable and sustainable location for further growth is principally within the larger settlements. However, there will also be situations where there is a need for smaller settlements to grow to support local services and ensure their long term viability. These more general spatial priorities are ultimately a matter for Core Strategies.

Environmental Constraints

- 1.19 A strategic assessment was undertaken to identify major physical and environmental constraints to development in and around each of the preferred settlements. This included environmental designations and other factors which 'rule out' certain locations from potential development as they are either 'showstoppers' to development or issues where the risks and impacts cannot be mitigated. These include landscape character and environmental designations such as Flood Zones or Special Protection Areas (SPA's). Consideration is also given to issues such as defensible development boundaries, prevention of settlement coalescence and maintaining the character and structure of settlements.
- 1.20 In Forest Heath the nationally important landscape and heritage value of the studland both within and surrounding Newmarket was identified as a fundamental environmental constraint. The horse racing industry as a whole was also identified for its important role in the economy of the Forest Heath. In addition, to the north and east, fundamental constraints from SSSI/SPA designations and flood risk were found to have a significant role in defining

opportunities for growth. In St Edmundsbury a wide range of environmental constraints combine to restrict growth opportunities for each settlement, proving a settlement focussed approach is essential for establishing constraints.

Defining Opportunities for Growth

- 1.21 Opportunities for growth were identified across the Study Area based on assessment of broad locations in and around preferred settlements. The methodology established a filtering process to define the identified opportunities allowing the unique characteristics of Forest Heath and St Edmundsbury to play a key role in identification of potential growth. In this respect, detailed geographic information (from topography to flood risk) was interpreted alongside other factors, including the need to protect sensitive areas and prevent coalescence as well as cumulative impacts of growth.
- This produced a series of defined Opportunity Areas for which a strategic level 1.22 dwelling capacity was estimated based on a density range (in other words, identifying a theoretical capacity for further development in and around each settlement). These density assumptions do not reflect site-based masterplanning or other detailed appraisal work, but reflect a strategic estimate for the Opportunity Areas identified. The figures are based on housing capacity but it is important to recognise that sustainable growth will require jobs, community, social and recreational facilities too. These test capacity figures were designed to provide an upper range below which actual growth might sit, the higher end of which also gives an indication of the environmental capacity of individual settlements from a strategic perspective. In some cases, the identified capacity is greater than the level of development that would ever be allocated for the period to 2021 or 2031 or could be delivered by the market, and does not therefore suggest that housing requirements should be increased. These key considerations and environmental capacities are identified in Table 4.
- 1.23 A programme of workshops and other forms of stakeholder engagement was employed to refine and re-test the preliminary dwelling yields identified for both Forest Heath and St Edmundsbury, to ensure robust figures were taken forward into analysis of tipping points for new infrastructure, costs, and conclusions.

Infrastructure Requirements

1.24 Using the estimates of future housing requirements for each local authority area and the dwelling capacity of each settlement, the scoping of infrastructure needs was undertaken at both the settlement level to underpin the growth Opportunity Areas and also at the strategic level to underpin overall infrastructure requirements to support the identified growth scenarios. NLP developed an infrastructure model which was established to apply a set of standards of provision (which includes a series of calculations based on predicted population numbers), an estimate of existing shortfalls or excess infrastructure capacity, and benchmarked unit costs, to provide a broad indication of the level of infrastructure required and associated costs of provision.

Infrastructure by Settlement and Marginal Cost and Impact

- 1.25 An assessment of the infrastructure that would be required to support the number of new homes within the environmental capacity range has been undertaken to identify where infrastructure to support development is either relatively costly (i.e. of less marginal benefit) or relatively economical (i.e. of more marginal benefit).
- 1.26 This marginal cost and impact analysis supports the policy proposition for locating higher levels of growth in the towns, as it is likely that the most marginal benefit arises with higher levels of growth in towns, with the cost per dwelling of providing infrastructure lower. Conversely, although with some exceptions where no services exist, smaller settlements can accommodate small levels of growth within existing infrastructure provision, but higher levels of growth require provision of more costly infrastructure, which may be less economically efficient at the higher levels of growth the settlement can theoretically accommodate in environmental capacity terms.

Overall Costs of Infrastructure

1.27 Based on the agreed growth scenarios the overall requirements and associated costs of infrastructure to support growth across the whole Study Area were identified. The costs from the analysis undertaken for infrastructure are summarised below:

	Cost to		2008 - 2031	
	2021 (RSS)	Low Growth	Medium Growth	High Growth
Green Infrastructure & Outdoor Sport	£35.1m	£58.30m	£69.20m	£87.10m
Health	£31.7m	£56.40m	£68m	£87m
Emergency Services	£4.9m	£8.80m	£10.60m	£13.50m
Education	£13.1m	£42.90m	£60.80m	£89.90m
Community Facilities	£5.5m	£9.90m	£11.90m	£15.30m
Leisure, Culture & Indoor Sport	£5.7m	£8.40m	£9.70m	£12m
Retail & Key Services			N/A	
Transport	Overall transp	oort costs are not by SCC High	available in advance ways Department	e of ongoing work
Total (excl. Affordable Housing)	£96m	£184.70m	£230.20m	£304.80m
Cost Per Dwelling excl. Affordable Housing	£4,600	£8,900	£9,200	£9,500
Affordable Housing	£205m	£363m	£438m	£560m
Cost Per Dwelling (incl. affordable housing)	£14,450	£26,300	£26,600	£26,900

 Table 3
 Executive Summary: Infrastructure Costs

1.28 These costs allow for discussion on the implications of housing growth across the two authorities. The uncertainties inherent in this type of work, and highlighted in the Study, mean that these costs are seen as a starting point for assessment rather than final budgeting figures. As the Core Strategy process continues, with greater information on spatial priorities and, ultimately, site allocations, the level of certainty on costs will increase.

1.29 Costs are generated through calculation of the infrastructure needed to support growth. Where investment in new infrastructure is required as a result of this growth, above existing capacity to meet the needs of residents, this is referred to as a tipping point. The costs demonstrate that it is the post 2021 period where the costs per dwelling are significantly increased (even averaged out over the whole 2008-2031 period). The total costs within the table above potentially represent an overall infrastructure 'tipping point' for the Study Area beyond 2021 that requires careful consideration.

Delivery and Funding Key Messages

1.30Another key challenge for housing growth is the funding and delivery of
infrastructure needed to support this growth. The costs have been identified
based upon the calculated requirements which are potentially significant, circa

 \pm 96-150m to 2021 and \pm 185-305m; this excludes transportation and affordable housing which could increase these costs significantly.

- 1.31 In general terms public sector funding is constrained by Spending Review Periods meaning that it is difficult to have certainty on the ability to secure resources for long term investment. Robust funding and appropriate delivery mechanisms need to be in place for infrastructure to be delivered alongside housing growth, particularly in the medium term when there is greater uncertainty over funding resources.
- 1.32 Capturing land value through Section 106 or Community Infrastructure Levy (CIL) is a key source of potential funding but is a complex issue. The current approach to S106 in the Study Area can be improved and a planning obligations SPD as part of the LDF suite of documents is recommended to address current gaps. CIL is still in the process of being introduced and there is a degree of uncertainty around its application and whether it will fill the infrastructure funding gap due to the regulations not being finalised at the time of this Study. This Study has illustrated the potential impact of different CIL tariff levels on the meeting the cost of infrastructure, but further work on viability issues is needed before setting a tariff level.
- 1.33 Under a 'High' level of growth for the 2008 2031 period, both authorities could potentially secure the funding necessary to meet the infrastructure requirement (excluding transport and affordable housing) through developer contributions, albeit only by assuming a high level of contribution of circa £15,000–£20,000 per market unit which is potentially ambitious. However, this would still leave a significant gap in overall funding, the principal cause of which is the cost associated with affordable housing provision even taking account of potential National Affordable Housing Programme (NAHP), Homes and Communities Agency (HCA) and Registered Social Landlord (RSL) investment. This reflects the wider debate currently ongoing regarding the delivery model for affordable housing provision.
- 1.34 The impact of affordable housing levels also reduces the number of private homes built on a given site and hence the gross development value available to support developer contributions.
- 1.35 The addition of transport costs to the overall infrastructure costs, which would also be expected to form a substantial element of infrastructure costs, are likely to expand the funding gap. This highlights the key need to ensure alternative funding mechanisms are in place including county, regional and national funding streams and to flow through to the Regional Funding Advice process.
- 1.36 The challenge is accentuated by the recent decline in the market and uncertainty over its future recovery and it is for the local authorities to use the evidence base to inform the strategic decisions that need to be made around the specific choices and trade offs for infrastructure investment and delivery

aligned to the spatial strategy. These considerations have been taken into account when identifying the suggested optimal range of growth for each settlement.

Summary Schedule for 'Optimal Range' of Growth

- 1.37 Consideration has been given to the way growth and infrastructure should be delivered together, to ensure that the people living and working in settlements derive the most benefit from infrastructure and that it is provided to ensure that needs are met sustainably with the greatest benefit from the investment providing it.
- 1.38 The upper limit range of environmental capacity, which was derived from the environmental and physical constraints and opportunities analysis, has been tested against the infrastructure impacts and the tipping points this would trigger for new provision. By looking at the infrastructure requirements to support the range of growth at each settlement, as well as wider settlement suitability issues, a judgement has been made on what the 'optimal growth' within that range might be. This 'optimal' range is based purely on infrastructure requirements and **does not take account of other planning issues material to the identification of levels of growth**. The optimal growth may also be greater than the level of development that it might be appropriate to consider within the current plan period, and reflects a longer term view.
- 1.39 The 'optimal' growth range represents long term growth potential as part of a filtering process from the full environmental capacity range identified by analysis of constraints and opportunities. The actual level of growth in each location will result from further filtering of these ranges, based on phasing, market capacity or housing need, down to detailed settlement analysis and site masterplanning. In this respect, the precise definition of growth in each settlement will be determined through the LDF process.
- 1.40 The upper limit range of environmental capacity and the headline infrastructure issues are provided in the following summary table (Table 4). The final column in the table sets out the optimal range identified through the analysis in report.

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Capacity	
Environmental	
Infrastructure and	

	Range of Environmental		néocterioties l'ecitos Mavelad Bonofit from Bounited Infracteriotures and Other Crowith Ponofiderations	Suggested Optimal Range
	Capacity Upper Limit (New Homes)			Based on Considerations
Forest Heath				
Brandon	630 – 1,000	•	Growth to support provision of GPs and Dentists which is currently poor	Across whole
		•	Capacity in schools and capacity in utilities unlikely to constrain levels of growth	range of
		•	Growth dependent on ability of suitable sites without environmental and landscape	capacity upper
		+		
Newmarket	1,740 - 3,050	•	Capacity of Newmarket's highway network to support large strategic growth. Requirement	Low end of
			for greater transport mitigation at higher levels of growth	range of
		•	Existing capacity in health services at lower end of range	capacity upper
		٠	Potential requirement for new primary school	limit
		•	Existing character of Newmarket including particularly the horse racing industry (protection of	
			the studland) and cultural heritage.	
Mildenhall	3,340 – 5,860	٠	New primary schools and new upper schools will be required at level of growth with most	High end of
			benefit from the infrastructure investment derived at high growth	range of
		•	Upgrades to wastewater and substation capacity will be required, particularly given	capacity upper
			cumulative impacts of growth around Mildenhall	limit
		٠	New green infrastructure, sports and social infrastructure to support growth	
Lakenheath	2,660 – 4,660	٠	New primary schools and new upper schools will be required at level of growth with most	Low end of
			benefit from the infrastructure investment derived at high growth	range of
		٠	Upgrades to wastewater and substation capacity will be required, particularly given	capacity upper
			cumulative impacts of growth around Mildenhall	limit
Red Lodge	1,140 - 2,000	•	SFRA and Water Cycle Study identifies existing wastewater treatment works has limited	Low end of
			capacity, with issues identified around the upgrade of the existing wastewater facility due to	range of
			further constraints. Potential major investment required to allow for growth.	capacity upper
		•	Existing poor range of services, which will need to be addressed as per the requirements in	limit
			the existing masterplan.	
		•	Impact on the rural road network for eastward travel due to lack of an eastbound A11/A14	
			junction. Potential investment in rural network required to support growth.	
Exning	1,240 - 2,170	٠	Capacity of the existing highway network to accommodate significant levels of growth is a	Mid/High end
			key risk particularly with junction capacity on the A14.	of range of
		•	Close proximity to Newmarket, however, sustainable links such as bus services and cycle	capacity upper
			routes should be sought and promoted.	limit
		٠	 High levels of growth within the range will ensure most benefit of any new primary school 	
			required to support the upper range of growth.	

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	Range of Environmental Capacity Upper Limit (New Homes)	2	nfrastructure Issues, Marginal Benefit from Required Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on Considerations
Kentford	240 - 440	• • •	Lacks majority of social infrastructure types, will need to ensure that services and facilities are provided across the board in line with growth. Without these facilities growth in Kentford will not have good access to services and the settlement will not be a sustainable option with heavy reliance on services in Newmarket. For sustainable growth to come forward infrastructure investment should particularly seek to improve links to Moulton for the primary school, either reopen the community centre or seek a new facility and provide outdoor recreation space.	Across whole range of capacity upper limit
West Row	140 - 250	•••	Existing capacity in the primary school and small levels of development will help to ensure the primary school and other local services such as shops and services remain viable. Residents will continue to rely on employment and higher order services from further afield, particularly Mildenhall, and sustainable transport links should be sought to support growth. Upgrades to wastewater and substation capacity will be required, particularly given cumulative impacts of growth around Mildenhall.	Across whole range of capacity upper limit
Beck Row	240 – 420	• • •	Limited primary school capacity with a tipping point being reached at the low end which will need to be mitigated through upgrades/expansion to the existing primary school as it would not be appropriate to provide a whole new primary school for small levels of growth. Growth in Beck Row should support provision of a GP surgery as the settlement is at a size where it could theoretically support one, providing an important local service within walking catchment of residents. Upgrades to wastewater and substation capacity will be required, particularly given cumulative impacts of growth around Mildenhall.	Across whole range of capacity upper limit
St Edmundsbury				
Bury St Edmunds	12,000 – 21,020	• • • •	Growth range is beyond the RSS requirements to 2021 and 2031 and as such growth levels will not come forward within this time period, but may do over a significantly longer period. Lower levels of growth will minimise costs associated with substantial infrastructure provision such as mitigating highway congestion and upgrading/providing new sites for wastewater treatment. Provision of schools and health facilities will need to be phased in line with growth. Ensure substantable growth by providing patterns of development and infrastructure investment that supports walking, cycling and public transport.	Polarised, with marginal benefit at low end or high end of range of capacity upper limit

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	Range of Environmental Capacity Upper Limit		Infrastructure Issues, Marginal Benefit from Required Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on
	(New Homes)			Considerations
Haverhill	1,480 – 2,600	•	 Provision of new primary and secondary schools will be required, particularly in recognition of the wider role Haverhill has in upper school provision across the south of the Borough. High 	High end of range of
			growth will provide most benefit of these.	capacity upper
		•	Higher levels of growth will ensure the most marginal benefit per additional dwelling through	limit
			the provision of required infrastructure, particularly given existing deficits within some infrastructure types. such as GPs and outdoor sports.	
		•	 Investment in utilities including substation capacity and wastewater capacity 	
		•	 Out-commuting should be addressed through suitable employment growth in Haverhill as 	
			well as improvements in inter-city bus links to Cambridge, which may become more viable	
			with greater levels of growth.	
		•	 Potential for greater capacity if appropriately masterplanned in the north east and mitigation 	
Barrow	420 - 740	•	 Determine the production of new infrastructure including GPs. a Dentist and 	High end of
			a new or expanded primary school.	range of
		•	 Higher range of development will ensure that there is a sufficient critical mass in Barrow to 	capacity upper
			support a wide range of services, minimising the need to travel to Bury St Edmunds for such	limit
			services.	
		٠	 Requirement for upgrades to the wastewater treatment works. 	
Risby	440 – 770	•	 Risby Primary School will require investment to accommodate additional pupils as it is 	Low end of
			currently oversubscribed.	range of
		•	 Risby currently has a limited provision of infrastructure. The potential costs associated with 	capacity upper
			providing infrastructure for a level of growth that is limited by environmental and physical	limit
			constraints, is comparatively high. Therefore, a lower level of growth is appropriate.	
		•	 Constrained on western side by Special Protection Area 	
Kedington	130 – 220	•	 Kedington Primary School is likely to require investment to accommodate additional pupils 	High end of
			associated with growth at Kedington, with higher growth levels likely to ensure there are	range of
			sufficient additional pupils to make investment in the school more beneficial.	capacity upper
		•	 Higher levels of growth would be able to take advantage of existing excellent infrastructure 	limit
			provision and capacity such as the GP surgery.	

l

Appraisal
Capacity
Environmental
and
nfrastructure

	Range of Environmental Capacity Upper Limit (New Homes)	liji	rastructure Issues, Marginal Benefit from Required Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on Considerations
lxworth	560 - 980		Wastewater treatment works will require upgrades if higher levels of development in both lxworth and Stanton are pursued which may represent high costs for the ability to accommodate small amounts of additional growth. Additional primary school capacity may be required, although this may come from the migration to a two tier education system. Ixworth currently supports a good range of services and lower levels of growth from the	Low end of range of capacity upper limit
Stanton	1,020 – 1,790	•••	identified test range would be sufficient to continue this. Wastewater treatment works will require upgrades if higher levels of development in both Ixworth and Stanton are pursued which may represent high costs for the ability to accommodate small amounts of additional growth. Stanton currently supports a good range of services and lower levels of growth from the	Low end of range of capacity upper limit
Clare	520 - 910	• •	identified test range would be sufficient to continue this. Provision of infrastructure that represents large investment such as the requirement for a new primary school to support growth would be supported by higher levels of growth to ensure that the most benefit is derived from the investment into that infrastructure. Clare may require new upgrades to the electricity substation which is a key risk, although canacity for wastewater is good	Mid/High end of range of capacity upper limit
Wickhambrook	150 - 250	••	There is existing infrastructure capacity within GP and Dentist provision and a good level of spare pupil capacity within the primary school. Although Wickhambrook is reasonably isolated from higher order services found in Haverhill or Bury St Edmunds, it does have a range of local services that can provide for a day-to-day local need and small levels of growth will continue to support these.	Across whole range of capacity upper limit

Table 4 Executive Summary: Summary Schedule

- 1.41 The analysis contained within this Study identifies that taking account of the environmental capacity and the infrastructure requirements to support growth, there are sufficient opportunities for both St Edmundsbury and Forest Heath to meet their RSS housing targets over the period to 2021 and 2031. The evidence also suggests there is scope for further growth beyond the period. However, the funding and delivery of sufficient infrastructure to meet the targets at the right time may be an issue without the appropriate funding mechanisms being in place. Site specific analysis may identify further barriers to delivery and the deliverability of opportunities will be subject to the respective strategies set our in the local authorities' LDFs.
- 1.42 Appendix 8 provides an overall summary on each settlement including existing infrastructure, environmental/physical constraints, a description of the Opportunity Areas, optimal growth level, the risks and contingencies and an overview of the tipping points for infrastructure. This appendix provides a summary of the key outputs for each settlement and in that respect complements this Executive Summary.

Next Steps

- 1.43 The Study has identified general scales of growth, infrastructure and cost and it is for the LPAs to use this evidence to inform the strategic choices and trade off decisions that need to be made within this context as part of the LDF process.
- 1.44 The next steps for the two respective authorities is to synthesise the results of this Study with the multiple strands of ongoing work as part of the spatial planning process, these include;
 - The Strategic Housing Land Availability Assessment (SHLAA), Strategic Housing Market Assessment (SHMA), Affordable Housing Viability Study, and Employment Land Review;
 - Emerging outputs from further analysis within the Strategic Flood Risk Assessment (SFRA) Study and the County Council's Transport Analysis; and
 - The planning strategy process.
- 1.45 Further site specific analysis will be required to ascertain specific impacts of infrastructure requirements. A co-ordinated approach to working jointly with infrastructure providers needs to be adopted. This may be a role for the Local Strategic Partnership.
- 1.46 There are three areas of emerging change that will complete the basis upon which these strategic choices and trade offs around growth and infrastructure can be made. These comprise:
 - a the restructuring of schools;

- b local government reorganisation; and
- c the integration of transport issues which is subject to work by the County Council.
- 1.47 The results from these strands of work are imminent and will help provide a sound base for the LPA's to engage with the agencies responsible for these inputs in shaping the strategic planning and infrastructure decisions that flow from them.
- 1.48 There is an obvious need to continue to work to shape the approach to housing growth and infrastructure provision and begin to map land values and their synergies with other funding sources to positively influence the decisions that need to be made between competing priorities in the face of limited resources.

2.0 Introduction

Background

- 2.1 In August 2008, Nathaniel Lichfield and Partners (NLP) was appointed to undertake an Infrastructure and Environmental Capacity Appraisal on behalf of St Edmundsbury Borough Council (SEBC) and Forest Heath District Council (FHDC).
- 2.2 This Study seeks to assess the need for and means of providing and maintaining social, physical and environmental infrastructure to support growth in the Forest Heath and St Edmundsbury area, for the period to 2021 and 2031.
- 2.3 The Study Area covers the borough of St Edmundsbury, including Bury St Edmunds and the market town of Haverhill, and the district of Forest Heath, which includes the large market towns of Newmarket, Mildenhall and Brandon. Both areas are within the County of Suffolk and fall within the East of England Region.
- 2.4 The role of the Study is to consider the infrastructure issues and environmental capacity implications of meeting the adopted Regional Spatial Strategy (RSS) growth figures in the current round of Local Development Documents.
- 2.5 The Study also considers the infrastructure/environmental capacity thresholds which might limit the scope for growth beyond existing Regional Spatial Strategy proposals and examines how these might be overcome.

Objectives

2.7

- 2.6 This Study considers the infrastructure and environmental capacity thresholds which could limit potential housing growth and assesses how these may be overcome. The Study therefore seeks to address the following questions:
 - What are the constraints, and therefore the opportunities, for growth?
 - What infrastructure will be needed to support the growth?
 - When will it be needed?
 - How can it be funded and maintained in the long term?
 - What are the associated risks?
 - In response to these questions, the Study aims to achieve five key objectives.
 - 1 An assessment of the physical and environmental constraints to growth in settlements within the Study Area, based on the emerging core strategies respective settlement hierarchies; the formulation of opportunity growth areas, where future development might be possible, based on the settlement hierarchy, the baseline assessments and feedback from stakeholders on identified environmental constraints, giving a capacity

range for each settlement against which to test future infrastructure requirements (Section 6);

- 2 The application of a set of benchmarked standards of infrastructure provision and consideration of stakeholder responses to identify infrastructure requirements to support the identified capacity ranges for each settlement, including an analysis of the marginal cost impacts associated with infrastructure provision for additional growth in different types of settlement (Section 7);
- 3 Use of the growth scenarios to provide a strategic indication of infrastructure requirements and associated costs for different levels of growth for each district based on the RSS. These are to be considered alongside, but distinct from, the identified long term environmental capacity ranges for each settlement which have the potential to be well above the level of development capable of coming forward within the plan period (Section 7);
- 4 A review of the costs of infrastructure provision to support growth and an assessment of the funding and delivery mechanisms (Section 8);
- 5 An assessment of the infrastructure and environmental constraints and pressures to define a theoretical environmental capacity range and an optimal level of growth based on the marginal costs of infrastructure provision within that range (Section 9 and Appendix 8);
- 2.8 In order to achieve these objectives the Study also includes a background review of evidence, including the development of three different growth scenarios (Low, Medium, and High) for future levels of population increase based on the RSS and National Housing and Planning Advisory Unit (NHPAU) supply range which set the context against which to consider infrastructure requirements and environmental capacity (Section 4). A baseline assessment of the current infrastructure provision in the Study Area, identifying tipping points or thresholds where existing infrastructure will reach a theoretical capacity for each settlement (Section 5) is used to generate a starting point for assessment of future infrastructure needs.
- 2.9 At key stages throughout the Study, workshops and follow-up stakeholder consultation has been used in order to engage with the local authorities, County Council representatives, other agencies, and infrastructure providers to underpin our knowledge in addressing the three key objectives of this Study (Appendix 7).
- 2.10 Where appropriate in responding to these objectives, the analysis identifies specific thresholds which may be relevant in determining the appropriate scale of development at any time, recognising that:
 - a Environmental constraints are in many cases a function of judgements made around the weight that should be attached to the protection of certain assets or features from the impacts of development, and an assessment of the extent to which the impacts of development can be mitigated or

avoided. In this context, the assessment is necessarily strategic and made without reference to specific proposals or site-specific masterplanning; and

- b The need for and provision of infrastructure is a function of underlying and often changing demands for services, and evolving models of provision, many of which respond to operational and policy changes as well as the scale of need or demand. A good example of this is the changing model of school provision and move from three to two-tier schooling, which makes it difficult to be precise about the impact of growth on schools that are in any case likely to evolve in their scale and in some cases location.
- 2.11 The Study will contribute to the evidence base for the respective authorities' Core Strategies and support a future Integrated Delivery Plan. This report must not be considered in isolation and forms just one input into a wider suite of evidence and documentation feeding into the Local Development Framework, and should therefore be considered alongside the Strategic Housing Land Availability Assessment (SHLAA), Strategic Housing Market Assessment (SHMA), affordable housing viability assessment and other inputs as illustrated in figure 1 below.





2.12

In particular, caution should be applied to assessing the implications of the 'theoretical' environmental capacity estimates of housing growth that might be possible in and around preferred settlements. These estimates are based on a physical and environmental analysis focused on identifying 'fundamental barriers' to development, and are not proposals for growth. Although certain policy objectives have been accommodated (for example, the use of the emerging settlement hierarchy to define the settlements to be considered, and policy objectives around, say, the desire to prevent coalescence) others have not, due to the strategic focus of the Study. As a result the estimates of environmental capacity are found to be in excess of:

- What is required to meet the requirements set by the RSS;
- What the market would be capable of bringing forward in a phased and coordinated manner.

- 2.13 Equally, market deliverability and viability factors that are considered within the SHMA and SHLAA process have not been considered. This Study is not, therefore, intended to form a robust justification for housing allocations.
- 2.14 For these reasons, the outputs of this Study, particularly as they relate to the scale of housing development and infrastructure provision in each location, should not be considered in isolation, and will be one input for consideration alongside others in the LDF process. For ease of co-ordination, this Study is based upon and structured around the settlement hierarchy identified in the respective authorities' emerging core strategies as set out below:

St Edmundsbury Core Strategy Preferred Options (Dec 2008) Settlement Hierarchy	Forest Heath Core Strategy Final Policy Option (Aug 2008) Settlement Hierarchy			
Towns	Towns			
Bury St Edmunds	Brandon			
Haverhill	Newmarket			
Key Service Centres	Mildenhall			
Barrow	Key Service Centres			
Clare	Lakenheath			
Ixworth	Red Lodge*			
Kedington	Primary Villages			
Risby	Beck Row			
Stanton	Kentford			
Wickhambrook	Exning			
Service Centres	West Row			
Bardwell	Secondary Villages			
Barnham	Barton Mills			
Barningham	lcklingham			
Cavendish	Eriswell			
Chedburgh	Moulton			
Great Barton	Freckenham			
Great & Little Thurlow	Tuddenham			
Great & Little Whelnetham (Sicklesmere)	Gazeley			
Hopton	Worlington			
Horringer	Holywell Row			
Hundon	Small Settlements			
Ingham	Cavenham			
Pakenham	Herringswell			
Stoke by Clare	Dalham			
Rougham	Higham			
	Elveden			
	Santon Downham			
	Sustainable Military Settlements			
	RAF Lakenheath			
	RAF Mildenhall			

Table 5Settlement Hierarchy

Source: St Edmundsbury Borough Council Core Strategy Preferred Option (December 2008) Policy CS2 and Forest Heath Final Policy Option CS1 (August 2008)

* Red Lodge is classified as a Primary Village until such a time as the Red Lodge Master Plan (1998) has been fully implemented.

Priorities and Trade-offs in Infrastructure Provision

- 2.15 When assessing the requirement for infrastructure associated with housing growth, in a policy and delivery environment where resources are limited, there is a need to focus on what is most needed, and to make choices and trade-offs between the costs and benefits associated with different requirements. Particularly at a time when public finances are likely to be constrained, and where development values are pressured by a difficult market and increasing regulatory burdens, for example, achieving the Code for Sustainable Homes
- 2.16 For this reason, the Study has sought to categorise different infrastructure types based on a high level view of its necessity in bringing forward development. It seeks to distinguish between:
 - a 'Fundamental' infrastructure required to overcome development 'showstoppers'. This category includes infrastructure that is so fundamental to growth taking place that without it development (or occupancy of development) could not occur (e.g. supply of water, utilities or access). These are infrastructure types that must be provided up-front to support development;
 - b 'Essential' infrastructure required to ensure development can be implemented with no detrimental effects on site, to the settlement and beyond. Infrastructure in this category will be essential to achieving growth in a timely and sustainable manner, and which must be delivered at least in the medium to long term or to allow later phases to proceed, but where (subject to location) a short term alternative might be possible (e.g. school provision, where the possibility exists to bus children to a nearby town); and
 - 'Required' infrastructure to ensure sustainable communities are created.
 This category includes infrastructure which is deemed necessary by virtue of legitimate policy objectives (e.g. around access to amenities) and the desire to achieve high quality and sustainable development.
- 2.17 For clarification, the third category 'Required' does not imply that it is not legitimate to seek provision of such infrastructure through Section 106 agreements in accordance with the relevant guidance/SPD.
- 2.18 By definition, the exercise of defining the above is one that is strategic, largely location blind and is a function of policy weight attached before the establishment of a formal pattern of growth. As the Core Strategy proceeds there will, undoubtedly, be legitimate debate around which infrastructure falls into which category, and it is wholly possible for infrastructure to sit within different categories in different locations/developments.
- 2.19 As the Study seeks to assess a broad spectrum of infrastructure classes these have been categorised into the three guiding principles 'fundamental', 'essential' and 'required'. The rationale for the classification of each infrastructure type is included in Table 9.

Infrastructure Type	Fundamental	Essential	Required
Natural Environment and Green Infrastructure			
Local/National Nature Reserves			✓
Sports Pitches			\checkmark
Non-Pitch Sports Areas			✓
Amenity Open Space			✓
Allotments			\checkmark
Children's Play Areas			✓
Social Infrastructure			
Health - GPs		\checkmark	
Health – Dentists		\checkmark	
Nursing Homes – Social Care			✓
Education - Primary Schools (pupil places)		\checkmark	
Education - Middle Schools (pupil places)		\checkmark	
Education - Upper Schools (pupil places)		\checkmark	
Community Centres			\checkmark
Libraries			✓
Emergency Services			
Police, Ambulance, Fire and Rescue		\checkmark	
Transport			
Road Network	\checkmark		
Public Transport	\checkmark		
Utilities			
Water	\checkmark		
Energy	\checkmark		
Leisure, Business and Retail			
Swimming Pools			✓
Sports Halls			✓
Indoor Bowls			\checkmark
Business Support			\checkmark
Arts and Culture (Galleries)			\checkmark
Local Convenience Shop		\checkmark	
Other Retail (Including Town Centre and Key Service Centre Provision)			\checkmark



2.20 It should be stressed that this assessment has been made on the information that was available during the Study. As part of managing the growth agenda the recommendations should be monitored and updated when new information becomes available or as external factors change.

Outputs

2.21

The outputs of the Study are set out in this Report and will help provide the basis for the two authorities to inform their Local Development Frameworks. The outputs are aligned with the objectives of the Study and are summarised below:

- Identifying the theoretical environmental capacity for growth in and around preferred settlements defined in the hierarchy for each local authority, based on application of environmental constraints, but without reference to market capacity, SHLAA analysis, or application of policy priorities to achieve an optimum scale and distribution of development;
- Identification of infrastructure requirements associated with identified environmental capacity in each settlement, from the development of a Study specific Infrastructure Model, including tipping points/thresholds and cumulative impacts where known;
- Identification of high level district/borough-wide infrastructure requirements and costs for levels of growth to 2021 and 2031, recognising the absence of a defined spatial strategy at local level which will ultimately determine precise requirements and costs;
- A review of the costs of infrastructure to support growth and assessment of the funding and delivery mechanisms, referred to as a 'Delivery Toolkit'.
- Identification of key environmental and Infrastructure criteria to guide future spatial strategy in respect of preferred settlements' 'optimum' range for development.

Mapping

- In addition to the outputs above, baseline spatial analysis accompanies this report in the form of a Spatial Plan Document in Appendix 2 this comprises of the following:
 - Nine Overall Strategic Plans including; Recommended Distribution of Potential Growth Areas, Settlement Hierarchy, Walking Catchments Plan, Green Infrastructure, Contours Plan, Agricultural Land Classifications, Water Constraints Plan, SSSI and SPA Buffer Zones Plan, an Airbase Safeguarding Plan and an Education Plan.
 - Due to the large scale nature of the Study Area it has been divided into sectors and numbered to navigate the reviewer through the correct set of plans based on the settlement hierarchy:
 - 1. Brandon and Lakenheath
 - 2. Newmarket
 - 3. Mildenhall and Red Lodge
 - 4. Bury St Edmunds
 - 5. Haverhill and Kedington
 - 6. Barrow and Risby
 - 7. Ixworth and Stanton
 - 8. Clare
 - 9. Wickhambrook

2.22

 Each sector has a set of three plans which identifies key designation constraints, highlights locations of existing infrastructure provision, and identified constraints and their resultant potential opportunity development patterns.

Structure of the Report

2.23 This report is structured as follows:

- Section 3.0 explains the methodology adopted to meet the Study's overall objectives;
- Section 4.0 provides a background review of policy and the evidence, including the growth scenario context upon which the Study has been based;
- Section 5.0 informs the baseline infrastructure position and acts as a platform upon what future growth has been defined within each settlement;
- Section 6.0 illustrates the approach undertaken to define opportunity areas and explains the application of environmental constraints and identification and appraisal of Opportunity Areas in and around settlements;
- Section 7.0 sets out the assessment of infrastructure requirements associated with growth levels to 2021 and 2031
- Section 8.0 identifies appropriate funding and delivery mechanisms
- Section 9.0 sets out the overall conclusions and recommendations

Appendix Schedule

- Appendix 1 Detailed Policy Summary
- Appendix 2 Spatial Plan Document
- Appendix 3 Settlement Pro-formas
- Appendix 4 Overall Requirement Costs
- Appendix 5 Settlement Tipping Points
- Appendix 6 Phasing and Marginal Impact Assessment
- Appendix 7 Statement of Stakeholder Engagement
- Appendix 8 Settlement Overviews

2.24 The Spatial Plan Document (Appendix 2) is a 'map-book' and includes all Plans. This Final Report necessarily summarises much of the analysis in the appendices and does not contain all the information used to reach conclusions. It should therefore be read in tandem with the Appendices. In particular, the full set of Maps in the accompanying Spatial Plan Document provides the background information on the constraints and infrastructure baseline.

3.0 Methodology

3.1 This Section provides an explanation of the methodology to the Study setting out the Phases of work used to meet the objectives described in the introduction. The five Phases of the Study do not directly correlate to the Objectives previously outlined, as the process involved necessarily involved a significant amount of co-development of both evidence and conclusions.

Overall Approach

3.2 The methodology for undertaking the Study is set out within a series of five phases as illustrated on Figure 2 below.



Phase 1 – Project Inception

3.3

Following an inception meeting, at which key data sources and stakeholder contacts were agreed, NLP undertook a policy review to establish the strategic context and parameters of the Study. A synopsis of the national, regional and local policy context was developed with a tabulated overview of policy relating to each environmental and infrastructure theme with their relevant key messages as they related to the Study (Refer to Appendix 1 for a detailed policy summary). This set the policy platform upon which the subsequent analysis was developed.

Phase 2 – Development of Growth Scenarios

- 3.4 Working with the two local authorities and the County Council, NLP agreed the base growth scenario to 2021 (i.e. the current RSS) and the three different growth scenarios (low, medium and high) which provided the context for assessing infrastructure need and environmental capacity issues in the FHDC and SEBC areas to 2031. These scenarios were based on extrapolations of the adopted RSS and the NHPAU supply range which were agreed with both authorities and the County Council. However it should be noted that neither Council is required to accept the higher rates of growth and these have just been applied for testing purposes, in the context of the current roll forward of the RSS.
- 3.5 This lead to the scoping of infrastructure requirements and the development of an Infrastructure Model which was established to use a set of standards of provision (which includes a series of demographic based need multipliers for infrastructure), an estimate of existing shortfalls or excess infrastructure capacity, and benchmarked unit costs to provide a broad indication of the level of infrastructure required and associated costs for provision with different levels of growth.

Phase 3 – Infrastructure Requirement and Programmes/Scope Thematic Issues

- 3.6 This phase included a series of six mini-workshops with statutory and other stakeholder consultees who were invited to discuss key issues relating to the existing level of infrastructure provision and its capacity within the Study Area, identify key challenges, and barriers to development, the resulting key risks and mitigating factors. The conclusions from these discussion groups and the feedback received were incorporated into the evidence base to frame the generation and appraisal of possible opportunity areas. (Details of the consultation process and key issues discussed are contained in Appendix 7).
- 3.7 Based on the outcomes of the stakeholder workshops and the underlying infrastructure model, NLP undertook a review of likely infrastructure needs for the period to 2021 (including settlement by settlement 'tipping points') and at a more strategic level to 2031. Detailed analysis is contained in Appendix 4 and Appendix 5.
- 3.8 This stage began to develop the Delivery Toolkit and considered a range of factors that influence the funding and delivery of infrastructure identified.

Phase 4 – Identification and Testing of Future Potential Opportunity Areas

3.9 This phase involved the collation, analysis and mapping of key environmental and infrastructure constraints to growth in and around the defined settlements, producing a series of strategic maps and plans to support the analysis. This focused on 'ruling out' locations where, in NLP's opinion, development could or should not take place (based on key infrastructure of environmental constraints, or self-evident planning barriers). From this, a series of Opportunity Areas were identified, which were then appraised against a set of criteria.

- 3.10 NLP identified physical capacities which have been used for testing infrastructure costs which are tabled in Section 6.0 and have been used to inform the infrastructure tipping points assessment explained in Section 7.0.
- 3.11 The mapping and accompanying documentation, including the evidence to support identified areas of potential growth, were prepared to form the focal point for discussion at a stakeholder workshop on 30th January 2009. The Opportunity Areas were presented at the workshop to provide the basis for wider discussion including the testing of different choices and trade-offs around infrastructure provision, different policy and delivery responses to thematic issues. The outputs of this were incorporated into the final stages of the Study.
- 3.12 This phase developed the environmental capacities for each preferred Settlement and informed the identification of an 'Optimum' range for development through consideration of potential growth in conjunction with the Infrastructure Model and Delivery Toolkit developed in Phases 2 and 3.

Phase 5 – Reporting

- 3.13 This report takes the outputs from the appraisals undertaken in Phase 4 and presents the evidence upon which the potential development patterns identified in Phase 4 have been based on. This includes appropriate maps, charts, and schedules to illustrate key aspects of the Study. Appendix 8 contains settlement overviews which summarise baseline infrastructure position, constraints, infrastructure tipping points, the risks associated with these and the identification of appropriate delivery partners.
- 3.14 NLP's reporting has been structured in order to navigate the reader through the logical sequence of outputs required to undertake this methodology and enables them to understand the salient points within the course of the main report and refer to the corresponding appendices which contain the detailed analysis to support the overall assumptions and conclusions made within the report.

4.0 Background

4.1 This Section provides a summary policy review giving a synopsis of the national, regional and local strategic policy context. It also provides a brief overview of the key themes that flowed from the review of this evidence base. This Section then sets out the context for future housing growth and scenarios for housing growth to 2021 and 2031 as the basis for estimating future infrastructure requirements.

Policy Context

- 4.2 A more comprehensive policy review is contained within Appendix 1 accompanied by a tabulated overview of how the policy relates to each individual recurrent theme when considering housing growth and infrastructure provision, for example, affordable housing and sustainable travel.
- 4.3 The key messages from this overall review can be summarised by the following points:
 - The Government has introduced a number of national initiatives to deliver sustainable communities in specific growth areas, in order to address housing supply, infrastructure and transport issues, and to support the economic prosperity of the wider South East. The Government has designated St Edmundsbury as a Growth Area;
 - Infrastructure requirements and environmental constraints must be considered when bringing forward and allocating sites for development, to ensure that the principles of sustainable development are adhered to;
 - The East of England Plan identifies Bury St Edmunds and Thetford as Key Centres for Development and Change, where provision should be made for further employment, service and housing development;
 - Parts of Forest Heath and St Edmundsbury both fall within the Cambridge Sub-Region, which has a vision to continue its development as a centre of excellence and world leader in higher education and research.

National Policy

Housing Growth Agenda

4.4 In 2003 the government launched its Sustainable Communities Plan (SCP). The SCP aimed to tackle housing supply issues in the wider South East and low demand in other parts of the country, particularly in northern areas. It aimed to do this through setting out a long-term programme of action for delivering sustainable communities in both urban and rural areas. To tackle the housing supply issues in the South East the Sustainable Communities Plan identified four specific growth areas, the Thames Gateway, London-Stansted-Cambridge, Ashford and Milton Keynes/South Midlands. In these areas, the SCP sought to ensure growth in housing supply, tackle infrastructure and transport issues and improve skills to support the economic success of the wider South East.

- In 2006 the government announced 29 new growth points through The New Growth Points initiative which was designed to support local communities who want to pursue large scale and sustainable growth outside of the Growth Areas. These new growth points included Norwich, Thetford and the Haven Gateway.
- 4.6 The Housing Green Paper 'Homes for the future: more affordable, more sustainable' was published in July 2007 and identified that growth in the number of households was outstripping housing stock growth. To meet this demand the Housing Green Paper proposed to deliver two million new homes by 2016 and three million new homes by 2026, highlighting the continued housing growth agenda. Some of the principal ways that were highlighted to meet this target included the existing growth areas and growth points, as well as new growth points and eco-towns. In August 2007 the government announced the intention, subject to the final content of the RSS, to designate St Edmundsbury as a Growth Area. This intent was confirmed with the publication of the East of England Plan in May 2008, highlighting the drive for housing growth in the area.

Planning Policy Statements

- 4.7 Planning Policy Statement 1: Delivering Sustainable Development (PPS1) sets out the overarching principles for the planning system, setting out key national policies for the delivery of sustainable development. The principles for planning for sustainable development include; social cohesion and inclusion; protection and enhancement of the environment; prudent use of natural resources; and sustainable economic development. These principles of sustainability should be integrated into development plans.
- 4.8 PPS1 specifically identifies that local authorities should take into account infrastructure requirements and environmental constraints when preparing development plans and bringing forward land for development, including housing. Para 27 states that in delivering sustainable development local authorities should:

"(iv) Bring forward sufficient land of a suitable quality in appropriate locations to meet the expected needs for housing, for industrial development, for the exploitation of raw materials such as minerals, for retail and commercial development, and for leisure and recreation – taking into account issues such as accessibility and sustainable transport needs, the provision of essential infrastructure, including for sustainable waste management, and the need to avoid flood risk and other natural hazards.

(v) Provide improved access for all to jobs, health, education, shops, leisure and community facilities, open space, sport and recreation, by ensuring that new development is located where everyone can access services or facilities on foot, bicycle or public transport rather than having to rely on access by car, while recognising that this may be more difficult in rural areas."
4.9 In the context of assessing infrastructure and environmental capacity for housing growth, many of the 25 national planning policy documents (both current Planning Policy Statements and Planning Policy Guidance Notes) are relevant.

Regional

East of England Plan (RSS 14)

- 4.10 Regional plans provide a strategic policy framework for planning, transport, economic development, housing, the environment, waste management, culture, sport and recreation, and mineral extraction to inform preparation of local strategies and policies such as Local Development Frameworks and Local Transport Plans. The RSS identifies required investment in social, environmental, physical and economic infrastructure for the region.
- 4.11 A revision to the first East of England Plan was first published in 2004 (December) for consultation which was subsequently assessed through Examination in Public (EIP) during the period of November 2005 to March 2006. The EIP panel recommended the Plan for approval in June 2006. A review of the panel report by the Secretary of State with proposed changes was published for consultation in the period of December 2006 to March 2007. Further proposed changes to the draft RSS were published for consultation from December 2007 to May 2008. The final RSS was issued on 12 May 2008. The East of England Plan currently covers the period to 2021.
- 4.12 The East of England Plan designates Bury St Edmunds as a Key Centre for Development and Change where provision should be made for further employment, service and housing development that reflect the role of Bury St Edmunds as an important service centre between Cambridge and Ipswich.
- 4.13 Although only bordering the Study Area, Thetford is also designated in the RSS as a Key Centre for Development and Change and, as a growth point, will impact on the planning considerations for the Study Area.
- 4.14 The East of England Regional Assembly has programmed an early review of the RSS to ensure a robust plan for the period up to 2031 is adopted. The RSS review is due to be completed by 2011 and will test a range of options for housing targets, including the NHPAU housing figures, to recommend housing targets required by each local authority area to 2031. The review will also look at broad locations for new development and also regional infrastructure needs such as transport, which will particularly complement this Study going forward over the long term, in terms of strategic transport infrastructure development.

Sub Regional

- 4.15 The East of England Plan sets out the five sub regions within the region and their policies. Haverhill and Newmarket both fall within the Cambridge Sub Region and are subject to the relevant polices of this area. The overall vision of the sub region is to continue its development as a centre of excellence and world leader in higher education and research.
- 4.16 Forest Heath and St Edmundsbury both fall within the Cambridge Housing Strategy Sub Region.
- 4.17 Suffolk County Council's Structure Plan was adopted in 2001 and covers the 15 year period of 2001 to 2016. As of September 2007, under the Planning Compulsory Purchase Act 2004, the Structure Plan as a whole was no longer a part of Suffolk's Development Plan. Under the direction of the Secretary of State, 13 of the Structure Plan policies were 'saved' for a further three year period.

Local Plans and Local Development Framework (LDF)

- 4.18 Forest Heath's Local Plan was adopted in 1995, with a number of policies being saved under the direction of the Secretary of State in September 2007. Public consultation on Forest Heath's Issues and Options was undertaken in 2005 and a Preferred Options consultation followed in 2006. Consultation on Forest Heath's Core Strategy 'Final Policy Option' document was held between August and September 2008.
- 4.19 St Edmundsbury's Replacement Local Plan was adopted in 2006 and covers the plan period to 2016. As the plan was adopted in June 2006, the policies are saved until June 2009; therefore the entire plan is still valid. The Government Office has confirmed that a large number of policies are saved from June 2009.
- 4.20 For further detailed local policy analysis refer to Appendix 1.

Background Review of Evidence

- 4.21 The detailed review of relevant documents was used to create an evidence base facilitating positive stakeholder engagement.
- 4.22 The key themes are summarised below and set out in full in Appendix 1. The themes are discussed in the following order:
 - Housing
 - Affordable Housing
 - Transport
 - Flood Risk and Drainage
 - Natural Resources, Waste and Energy Use

- Retail
- Health and Social Care
- Emergency Services and Community Safety
- Education
- Arts Culture, Heritage and Leisure
- Built Heritage and Archaeology
- Green Infrastructure and Biodiversity
- Economic Overview and Business Support

Housing

- The RSS designates Bury St Edmunds as a Key Centre for Development and Change where new development should be concentrated;
- FHDC has an allocated housing target of 6,400 dwellings as a minimum to be met between 2001 and 2021 with an indication of post 2021 requirements to 2031 at 370 per annum. SEBC has an allocated minimum target of 10,000 dwellings to 2021, with indication of post 2021 requirements to 2031 at 540 per annum;
- The majority of new development will be focused in accordance with the emerging Core Strategies which will look at allocating development beyond existing boundaries to meet housing requirements.

Affordable Housing

 Affordable housing provision is not keeping up with the pace of market housing even though demand for social housing is increasing. The recent adoption of the RSS, which sets minimum thresholds for providing affordable housing, and the recent publication of the Cambridge Sub – Region SHMA, will provide a robust policy and evidence base to inform affordable housing policy decisions for both FHDC and SEBC.

Transport

- The Cambridge Transport Priority Area, within which Forest Heath is located, is likely to come under increasing transport pressure as the area develops, in particular as a centre of excellence and world leader in higher education and research;
- Of the few highways improvements programmed for delivery in the RSS, the works to the A11 between Thetford and Barton Mills to increase capacity, are the most significant;
- The A14 corridor is of national significance for both rail and road, with large sectors of the economy and the communities of the Study Area being reliant on it for regional and local movement, and is already operating at or above capacity in some sections;
- Improvements in public transport, cycling and walking networks are required, particularly in Bury St Edmunds and rural areas, in order to provide a sustainable integrated transport system; and
- Continued growth in the region could have further detrimental impacts on the transport highway network.

Flood Risk and Drainage

- The use of flood risk maps to identify areas which have a high likelihood of flooding, and implementation of a sequential approach to ensuring development is located in areas of appropriate flood risk to their use, is a key spatial constraint to growth;
- The overarching theme for flood risk and drainage policy is the emphasis that development proposals that avoid areas of flood risk should be supported and sustainable drainage systems should be incorporated into all development where possible;
- Much of the land in the Study Area is greenfield with much in agricultural use and it's role in helping to manage flood risk and drainage needs to be considered.

Natural Resources, Waste and Energy Use

- A key objective of both national and regional policy is reducing the demand for natural resources and reducing the production of waste. Policy identifies that these could be reduced by implementing sustainable resource management strategies and by increasing the rates of re-use and recycling;
- The Minerals & Waste Development Framework Issues and Options Document identified that 385,000 tonnes of Municipal Waste and 1.04m tonnes of Commercial Waste is managed in Suffolk. Suffolk survey projections illustrates that existing permitted non-hazardous landfill capacity would be exhausted by 2016 if no residual waste treatment plant (RWTP) were to be constructed;
- The RSS and Sustainable Futures, (the Consultation draft of the Revised Integrated Regional Strategy for the East of England) both advocate forward planning to ensure the timely provision of appropriate additional infrastructure for water supply and waste water treatment whilst meeting surface and groundwater quality standards.

Retail

- The RSS identifies Bury St Edmunds as a Major Town Centre, making it the main retail destination within the Study Area;
- Development for retail and other town centre uses is promoted within the defined town centres subject to them being of an appropriate scale and function. Proposals outside the defined shopping centres will be subject to the PPS6 tests, including the sequential approach to site selection. Retail proposals within rural housing settlement boundaries are typically suitable where they are small scale and the proposal meets a local need;
- Smaller market towns provide important centres for the rural hinterlands. Centres such as Brandon, Mildenhall, Lakenheath and Clare, contain important shops and services which meet the everyday needs of their populations and neighbouring smaller villages;

• Retail expansion is currently taking place in Bury St Edmunds and additional retail floorspace capacity has been identified within the Study Area and should be considered in the light of population growth.

Health and Social Care

- It is important to conduct regular Strategic Needs Assessments in order to understand the growing and evolving needs of a population;
- Across the Study Area the elderly population is becoming isolated from key services and support in rural locations, and with a projected rise in this demographic any new infrastructure should address this issue;
- Bury St Edmunds hospital is exploring relocation options, where a preferred option has been indicated to the Western side of Bury St Edmunds. The hospital is a key health service provider within the County as a whole and a major employer;
- NHS Suffolk are making strategic efforts across the district to ensure strategic satellite services are provided especially within the rural locations across the districts to alleviate the pressures that are placed on the Bury St Edmunds hospital currently. Despite this FHDC indicated that information from the PCT identified that Newmarket hospital is surplus to capacity, with the hospital reducing in size, suggesting that some satellite services are not being utilised.

Emergency Services and Community Safety

- There are no standard guidelines for the development of emergency services in line with population growth; however there are clear strategic drivers for improving the quality of the delivery of emergency services particularly with regard to improving efficiency and meeting defined targets set through Public Service Agreements and Local Area Agreements.
- Whilst emergency services may deliver on efficiency and response targets, an assumption needs to be made that to continue the level of provision in line with housing growth new infrastructure will also be required. Where specific strategies have not identified a particular need to expand to meet population growth pressures, consideration of how services can be managed in light of growth is required.

Education

- Suffolk is currently experiencing an ongoing transformation within its schools. This transformation has three key strategic components the Building Schools for the Future Programme, School Organisation Review and review of Special Educational Needs Provision;
- This overall transformation forms an integral part of Suffolk's Community Strategy and links to the key theme Learning and Skills;
- A key element of the strategy for the School Organisation Review (SOR) has been to link with the future development of secondary schools with the Building Schools for the Future Programme as the major source of new investment across the whole county;

• The SOR is currently subject to consultation, the outcomes of which will need to be seriously considered when assessing appropriate levels of schools provision in light of anticipated growth.

Arts, Culture, Heritage and Leisure

- Local authorities should recognise the contribution that cultural sectors can make to regeneration and urban and rural renaissance, and should ensure that every resident and visitor has access to a range of cultural activities across the arts, leisure and heritage spectrum;
- New housing development should make appropriate provision for new and improved sports, leisure, cultural and public art facilities;
- The Newmarket horse racing industry has contributed significantly to the heritage and character of the town and surrounding area, and its role and function should be protected to ensure its continued vitality as a leisure and cultural pursuit.

Built Heritage and Archaeology

- The policy framework sets out a clear requirement to recognise, protect and sustainably manage the built heritage, archaeological and historic landscape resources across the East of England and within the local authority areas of St Edmundsbury and Forest Heath;
- Both local authorities have had an established system of designation, protection and management of their historic assets in their local plans and revert to the policy framework of the new East of England Plan where these have expired;
- The consistent theme of preservation and enhancement of the natural, historic and built environment throughout the policy framework, and the existence of large quantities of built heritage and archaeology assets across the Study Area, is likely to represent a significant constraint on growth in certain areas.

Green Infrastructure and Biodiversity

- There is a clear framework for assessing the impacts of development on Green Infrastructure and Biodiversity where there are a series of fundamental constraints such as SSSIs, Special Protection Area (SPA) Designations, Special Conservation Areas (SAC), Nature Reserves and landscape designations where the longstanding policy assumption has been to restrict development should any of these protected or designated areas be at risk or compromised;
- Both local authorities have had an established system of designation, protection and management of their green infrastructure and biodiversity issues which are identified in their local plans and comply with national guidance around these;

- There are also several parts of the Study Area that are within buffer zones for protection of the Stone Curlew, Woodlark and Nightjar. Forest Heath has recently completed an HRA to assess these buffer zones and potential mitigation.
- The consistent theme of preservation and enhancement of green infrastructure and biodiversity issues throughout the policy framework, and the existence of large quantities of natural open space across the Study Area, is likely to represent a significant constraint on growth in certain areas.

Economic Overview and Business Support

- Overall the local economy is performing well with high inward investment and low unemployment. It also has attractive urban and rural environments which attract workers and firms to the area;
- Both districts have undergone strong recent growth in more dynamic sectors such as banking, finance and insurance, but Forest Heath has undergone significant manufacturing decline, and the agriculture sector has contracted significantly in St Edmundsbury. Both areas are underrepresented in terms of knowledge-based firms, particularly Forest Heath;
- There is an obvious sector imbalance particularly in settlements such as Haverhill;
- Despite outward appearances of prosperity in Bury St Edmunds and Newmarket, there are some relatively high levels of deprivation in both urban and rural areas;
- Wages and housing affordability are low, especially in rural areas;
- Although Newmarket and Haverhill function as commuting towns to Cambridge the districts proximity to the main economic drivers of Cambridge and Ipswich make commuting unsustainable, with a degree of self-containment in each district;
- Tourism will continue to be an important feature of the local economy and its value should be encouraged to grow.

Context for Growth

- 4.23 It is evident from the policy review that there is a continued pressure for housing growth within the Study Area and a policy framework for ensuring development can be accommodated in a sustainable manner. This Study seeks to identify the opportunities and barriers to accommodating this growth as part of an input to the evidence base for the Local Development Framework.
- 4.24 Prior to establishing an estimate of theoretical environmental capacity and opportunity areas across the two authorities, three growth scenarios were established to provide a broad context for growth. These scenarios have not represented ceilings for the purposes of identifying potential opportunity areas based on environmental and infrastructure constraints (the analysis in Section 5.0).

4.25 Working with the two local authorities and the County Council, NLP agreed the base growth scenario to 2021 (i.e. the current RSS) and the three different growth scenarios (low, medium and high) which provided the context for assessing infrastructure need and environmental capacity issues in the FHDC and SEBC areas to 2031. These scenarios were based on extrapolations of the adopted RSS and the NHPAU supply range which were agreed with both authorities and the County Council. However it should be noted that neither Council is required to accept the higher rates of growth and these have just been applied for testing purposes.

Levels of Growth to 2021 and 2031

Forest Heath

4.26

The overall housing requirements for the three growth scenarios for the period of 2008 to 2031 would require the provision of housing across the district equal to 8,470, 10,210 and 13,070 respectively. This equates to a difference of 4,600 dwellings between the low and high growth scenarios. These figures include sites with planning permission not yet completed and undeveloped sites in Local Plans.

	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2008 - 2021	4,770	5,750	7,360
2021 - 2031	3,700	4,460	5,710
Total	8,470	10,210	13,070

 Table 7
 Growth Scenarios for Forest Heath - Source: SCC / NLP analysis

4.27

This step change in housing provision from the current RSS requirements, to the medium growth and high growth scenarios is illustrated in the chart below.



St Edmundsbury

4.28

The overall housing requirements for the three growth scenarios for the period of 2008 to 2031 would require the provision of housing across the district equal to 12,360, 14,900 and 19,070 respectively. This equates to a difference of 6,710 dwellings between the low and high growth scenarios. These figures include sites with planning permission not yet completed and undeveloped sites in Local Plans.

	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2008 - 2021	6,960	8,390	10,740
2021 - 2031	5,400	6,510	8,330
Total	12,360	14,900	19,070

Table 8 Growth Scenarios for St Edmundsbury - Source: SCC / NLP Analysis

4.29 This step change in housing provision from the current RSS requirements to the medium growth and high growth scenarios is illustrated in the chart below.



Housing Market

- 4.30 The Cambridge Sub-Region Strategic Housing Market Assessment (SHMA) completed in May 2008 looked at housing across the sub-region including the five Cambridgeshire authorities as well as St Edmundsbury and Forest Heath.
- 4.31 Overall the SHMA identifies that housing affordability (income to price ratio) in St Edmundsbury and Forest Heath is second and third poorest respectively in the sub-region only behind Cambridge City. In both St Edmundsbury and Forest Heath the income required to afford private rent is lower than that to afford a shared-ownership dwelling. Affordability of intermediate rent in comparison with private rent is higher in Forest Heath but lower in St Edmundsbury.
- 4.32 The SHMA identifies that housing affordability creates large housing pressures across the sub-region. Particularly social housing stock is not keeping up with the pace of market housing even though demand for social housing is increasing. The SHMA was completed in 2008 and it has not yet been identified what impact the current market has had on the housing market in Forest Heath and St Edmundsbury.
- 4.33 Average housing completions over the RSS period (i.e. since 2001) has been below the RSS annual minimum dwelling provision for both authorities. Only in 2007/2008 were the minimum dwelling numbers exceeded. This has meant that dwelling completions over the remainder of the RSS period to 2021 will have to be at a higher rate to meet the RSS targets. This is highlighted in the graph below.



4.34 In consideration of the current market conditions it is likely that dwelling completions for 2008/2009 will be further down on the RSS targets and this highlights the need for higher levels of growth over the period to 2021 to meet this requirement.

5.0 Baseline Infrastructure Position

Introduction and Approach

- 5.1 This section of the report summarises the current infrastructure provision in the Study Area and in each settlement, highlighting where the infrastructure pressures associated with growth are likely to come from. This also includes an analysis of the current infrastructure 'tipping points' for each settlement i.e. how much development each settlement can accommodate without the provision of any new infrastructure, taking into account the prioritisation of infrastructure typologies, as set out in the introduction, as follows:
 - a 'Fundamental' infrastructure required to overcome development 'showstoppers'. This category includes infrastructure that is so fundamental to growth taking place that without it development (or occupancy of development) could not occur (e.g. supply of water, utilities or access). These are infrastructure types that must be provided up-front to support development;
 - b 'Essential' infrastructure required to ensure development can be implemented with no detrimental effects on site, to the settlement and beyond. Infrastructure in this category will be essential to achieving growth in a timely and sustainable manner, and which must be delivered at least in the medium to long term or to allow later phases to proceed, but where (subject to location) a short term alternative might be possible (e.g. school provision, where the possibility exists to bus children to a nearby town); and
 - c '**Required**' infrastructure to ensure sustainable communities are created. This category includes infrastructure which is deemed necessary by virtue of legitimate policy objectives (e.g. around access to amenities) and the desire to achieve high quality and sustainable development.
- 5.2 To inform the baseline position and to act as a platform upon which to define future development patterns, an audit of existing infrastructure and an assessment of the current infrastructure pressures has been undertaken. This baseline position includes identifying what infrastructure is currently in place and assessing the extent to which the current infrastructure is 'fit for purpose' to support the existing settlements. This baseline picture has been constructed through the collation of information on the various infrastructure types from a range of sources and further validation through stakeholder engagement. Together this ensures that the data reflects actual issues within the settlements and provides, where applicable, a narrative aspect to the existing pressures on infrastructure.
- 5.3 The approach taken to assess the baseline involves the use of benchmarking to assess how well served settlements are for various infrastructure types in comparison with an identified standard. Where this has not been possible,

stakeholder engagement has been utilised to provide a qualitative baseline and narrative which identifies the key infrastructure issues within each infrastructure theme. These benchmarks are used to construct an infrastructure model which allows 'tipping points' for each infrastructure type to be identified.

5.4

Our approach to each infrastructure type is identified below.

Infrastructure Theme	Interpretation
Green Infrastructure – Nature Reserves	Areas of habitat importance protected by local and/or national policy. Provision should be in line with English Nature's Accessible Green Model, although this is an infrastructure type that is a "desirable" requirement and is not a pre- requisite for growth, particularly in consideration of other green infrastructure, Prioritisation: Required Infrastructure
Green Infrastructure – Sports Pitches	Sports pitches includes all grass pitches marked out for use for sports (inclusive of wider grass areas around, used as a buffer area). The National Playing Fields Association (NPFA), recently rebadged Fields in Trust (FiT), set out robust standards on the provision of sports pitches in their 'six acre standard'. Sports pitches help to ensure sustainable, inclusive, communities, but are not necessarily a pre-requisite or showstopper of growth. Prioritisation: Required Infrastructure
Green Infrastructure – Non-Pitch Sports	Non-Pitch sports includes all outdoor courts and greens for use for sports such as Tennis Courts and Bowls Greens. The National Playing Fields Association (NPFA), recently rebadged Fields in Trust (FiT), set out robust standards on the provision of non-pitch sports in their 'six acre standard'. Non-pitch sports provision helps to ensure sustainable, inclusive, communities, but is not necessarily a pre-requisite or showstopper of growth. Prioritisation: Required Infrastructure
Green Infrastructure – Amenity Open Space	Amenity open space is an area primarily of visual importance but may also be used for recreation either formally or informally. It should be provided as part of all new developments but is exclusive of verges, structural planting, woodland and open water. Amenity open space helps to ensure sustainable communities and development with good design principles. This means that although not a showstopper for growth, green space is a necessary requirement as part of any new development. Prioritisation: Required Infrastructure
Green Infrastructure – Allotments	Allotments provide access to plots of land for growing plants and vegetables. They are particularly useful in urban areas where access to gardens and open space may be limited. They help to ensure sustainable communities through creating a community focus and encouraging sustainable lifestyles through a small element of self-sufficiency. Allotments are not necessarily a pre- requisite or showstopper of growth. Prioritisation: Required Infrastructure
Green Infrastructure – Playgrounds	Playgrounds can encompass Local Areas for Play (LAPs) which are small green areas suitable for children's play, Local Equipped Areas for Play (LEAPs) which are areas within five minutes walk of home with play equipment for younger children and Neighbourhood Equipped Areas for Play (NEAPs) which are area within 15 minutes walk of home with play equipment for both younger and older children. Playgrounds help to create sustainable neighbourhoods with play opportunities for younger members of society, though these are not necessarily a pre-requisite or show-stopper of growth. Prioritisation: Required Infrastructure

Infrastructure Theme	Interpretation
Health – Hospitals	Hospitals generally serve a wide catchment, particularly in rural areas where one hospital will serve a dispersed population. Hospitals will provide acute and/or chronic medical care with larger hospitals also providing accident and emergency departments. It would be expected that there would be a hospital within in a reasonable driving distance (e.g. 30-45 minutes drive-time) in most populous areas, particularly for A&E services. Though clearly a very important infrastructure type there needs to be an allowance for the varied spatial scale and wide range of services hospitals provide in considering its importance to growth. Prioritisation: Essential Infrastructure
Health – GPs	GPs provide 'primary care' as the first point of contact for most medical services. They ideally should be located within a neighbourhood scale to ensure households have easy access to their services. Whilst this is an essential aspect it is unlikely to constrain growth in the short term as long as long term plans are identified to ensure provision is adequate to mitigate development impacts. Prioritisation: Essential Infrastructure
Health – Dentists	Dentists provide oral care services. They are not necessarily tied to a specific neighbourhood and, due to the lower frequency of visits, may often be further afield than within a walkable distance. Whilst dentists are an essential aspect of healthcare they are unlikely to constrain growth in the short term as long as long term plans are identified to ensure provision is adequate to mitigate development impacts. Prioritisation: Essential Infrastructure
Health – Nursing Homes	Nursing Homes are provided as residential institutions for the elderly or disabled. They are very important in providing ongoing care although they are locationally transient and are brought forward on a commercial basis. They do not necessarily constrain growth, but consideration will need to be given to the needs of an ageing population. Prioritisation: Required Infrastructure
Emergency Services – Police	Policing is undertaken at various levels from countywide to neighbourhood policing teams and community support police officers. Whilst policing is a non- locationally specific requirement, growth will have an impact on the demand for services, which will need to be mitigated. Prioritisation: Essential Infrastructure
Emergency Services – Ambulance	Ambulance services in the region are provided by East of England Ambulance Service. This service is not necessarily locationally specific, however, Ambulance response time targets are eight minutes, which means that areas within an 8 minute drive time isochrone of an ambulance station will be very well served. A comprehensive coverage would be expected to be maintained, though being outside that isochrone does not prevent growth. Prioritisation: Essential Infrastructure
Emergency Services – Fire Service	Fire and rescue services in the region are provided by Suffolk Fire and Rescue. Fire and rescue response time targets are 15 minutes, which means that areas within an 15 minute drive time isochrone of a fire station will be very well served. A comprehensive coverage would be expected to be maintained, though being outside that isochrone does not prevent growth but is a risk that will need to be considered, particularly for large scale growth. Prioritisation: Essential Infrastructure

Infrastructure Theme	Interpretation
Education – Primary Schools	Primary Schools are the lower tier of a three tier education system in Suffolk. There is a requirement to provide school places for pupils and at a primary level this is ideally located within walking distance of home. Existing capacity issues can be assessed using a snapshot analysis of existing rolls to existing capacity. Where areas are outside walkable distance to a primary school it does not rule out development but mitigation may be required. Capacity issues may require up front infrastructure works and schools are therefore an essential infrastructure. Comprehensive schools capacity and a strategy for school provision over the study period will be brought forward through Suffolk County Council's School Organisation Review and this Study does not seek to pre-empt the conclusion of that process. The issue of 'catchments' and admissions procedures is not considered within this Study. Prioritisation: Essential Infrastructure
Education – Middle Schools	Middle Schools are the middle tier of a three tier education system in Suffolk. The current Schools Organisation Review will migrate the Study Area to a two tier system, with middle schools being abolished in the medium term and pupil places being accommodated elsewhere in the system. Existing capacity issues can be assessed using a snapshot analysis of existing rolls to existing capacity. Middle schools tend to only be in the larger settlements meaning many rural areas are not well located to benefit. Capacity issues may require up front infrastructure works and schools are therefore an essential infrastructure. Comprehensive schools capacity and a strategy for school provision over the study period will be brought forward through Suffolk County Council's School Organisation Review and this Study does not seek to pre- empt the conclusion of that process. The issue of 'catchments' and admissions procedures is not considered within this Study. Prioritisation: Essential Infrastructure
Education – Upper Schools	Upper Schools are the higher tier of a three tier education system in Suffolk. The current Schools Organisation Review will migrate the Study Area to a two tier system, with middle schools being abolished in the medium term and pupil places being accommodated elsewhere in the system. Existing capacity issues can be assessed using a snapshot analysis of existing rolls to existing capacity. Upper schools are only located in the larger settlements meaning many rural areas are significant distances from an upper school, necessitating a 'school run' and also meaning growth across a wider spatial area will have an impact. Capacity issues may require up front infrastructure works and schools are therefore and essential infrastructure. Comprehensive schools capacity and a strategy for school provision over the Study period will be brought forward through Suffolk County Council's School Organisation Review and this Study does not seek to pre-empt the conclusion of that process. Prioritisation: Essential Infrastructure
Community Facilities – Libraries	Libraries in the Study Area are provided by Suffolk County Council. Libraries help to provide a community focus and also can support skills training and education. They do not necessarily constrain growth, but are an important community facility that are required to ensure sustainable settlements. Prioritisation: Required Infrastructure
Community Facilities – Community Centres	Community facilities encompass many forms of community building from large town halls to small village halls. They form a focus for community based activity and are required to ensure residents have access to important community uses. Prioritisation: Required Infrastructure
Arts, Leisure & Culture – Cinemas	Cinemas are provided on a commercial basis and are one of the main commercial leisure uses. They are not a pre-requisite for growth, but they do provide an important attraction, particularly diversifying the offer of larger town centres. Prioritisation: Required Infrastructure

Infrastructure Theme	Interpretation
Arts, Leisure & Culture – Swimming Pools	Swimming Pools provide leisure and recreation opportunities for communities helping to promote healthy lifestyles and good access to leisure opportunities. Provision will not constrain growth, but they are a desirable infrastructure. Prioritisation: Required Infrastructure
Arts, Leisure & Culture – Sports Halls	Sports Halls provide leisure and recreation opportunities for communities helping to promote healthy lifestyles and good access to leisure opportunities. Provision will not constrain growth, but they are a desirable infrastructure. Prioritisation: Required Infrastructure
Arts, Leisure & Culture – Indoor Bowls	Indoor Bowls centres provide leisure and recreation opportunities for communities helping to promote healthy lifestyles and good access to leisure opportunities. Provision will not constrain growth, but they are a desirable infrastructure. Prioritisation: Required Infrastructure
Arts, Leisure & Culture – Theatres	Theatres are often provided on a commercial basis but may also serve a community based function through other arts funding. They are an important cultural attraction although are not a pre-requisite for growth, but do provide an important attraction, both for residents and as a wider attraction and should be accessible on a wider basis. Prioritisation: Required Infrastructure
Arts, Leisure & Culture – Museums, Galleries and Arts Centres	Museums, Galleries and Arts Centres add cultural and leisure attractions to local areas. They are difficult to quantify in terms of what is an optimal level of provision, but they particularly support heritage and educational opportunities within wider communities. Prioritisation: Required Infrastructure
Transport – Road Network	The road network is a critical infrastructure. Without safe road access that is not unacceptably congested, growth cannot occur as the impact on the highway network would be an absolute constraint. Highways planning is undertaken by Suffolk County Council and the Highways Agency and cannot be quantified in the way that many infrastructure types can. Therefore, we have used qualitative analysis of capacity issues brought through from our stakeholder engagement. Prioritisation: Fundamental Infrastructure
Transport – Public Transport	Public transport is also a critical infrastructure to underpin sustainable growth. Without access to either sustainable travel opportunities or public transport, alternative areas of growth can be highly unsustainable, which would be an absolute constraint. Public transport planning is undertaken by Suffolk County Council though is provided on a commercial basis through operating companies. There is a need for public transport to be viable or subsidised and a key issue in this is encouraging modal shift and creating growth that has qualities to support public transport. We have used qualitative analysis of capacity issues brought through from our stakeholder engagement. Prioritisation: Fundamental Infrastructure
Waste and Utilities – Waste & Recycling	Waste and recycling is provided and planned for at a county wide level, although individual local authorities run their own waste collection and recycling services. It is a critical infrastructure as without waste management capacity growth cannot occur without significant mitigation measures. Prioritisation: Fundamental Infrastructure

Infrastructure Theme	Interpretation
Waste and Utilities – Potable Water Supply	The potable water supply can become an absolute constraint, particularly where aquifers are at capacity and further extraction licences cannot be granted. Mitigation measures such as grey water recycling can help mitigate this and other physical solutions such as strategic water distribution can improve supply to an area. Key for growth is consideration of the ability to be served by mains, although in some areas network upgrades are likely to be required. These are elements that have been assessed in the separate Water Cycle Study. Prioritisation: Fundamental Infrastructure
Waste and Utilities – Foul Water Sewerage and Treatment	Drainage sewers and Wastewater Treatment Works capacity is another constraint that is critical and prevents growth until further capacity is made available through infrastructure works. These are elements that have been assessed in the separate Water Cycle Study. Prioritisation: Fundamental Infrastructure
Waste and Utilities – Energy	The energy network in Suffolk is provided and maintained by EDF Energy. Energy providers work on an entirely reactive basis to upgrading their network and schedule ongoing upgrade works to improve capacity, prioritising these where growth is likely to impact capacity. Therefore, specific future capacity issues have not been identified, but existing capacity can be given in broad terms. The national grid is reasonably fluid in its capacity and often where issues occur energy can be routed differently. Development cannot go ahead without power supply and therefore energy is a fundamental infrastructure. Prioritisation: Fundamental Infrastructure
Retail & Services – Town Centres	Town Centres provide a focus for retail and commercial activity. Particularly they provide a range of convenience and comparison shopping opportunities and act as a focus for leisure and services. Access to town centres is important to ensure sustainable development and sustainable patterns of travel, however, they are not a major constraint on growth, particularly in rural areas where emphasis is on local services. Prioritisation: Required Infrastructure
Retail & Services – Key Local Services	Key local retail services may include a store for top-up shopping, a bank, a post office, a newsagent, an off licence, a takeaway/café/restaurant, a public house, hairdressers, a chemist and other such services. These are important in providing day-to-day functions for a local community reducing the need to travel and increasing accessibility and sustainability. Whilst clear consideration needs to be given to access to a range of these services, they will not prevent growth, although a range will be required to ensure sustainable neighbourhoods.
Retail & Services – Local Convenience Shops	Local Convenience Shops encompass all shops capable of providing for a day- to-day top-up shopping function. Ideally these should be located within walking distance of home and underpin sustainability by reducing the need to travel for every day items. They are essential to underpin growth that does not have a significant impact on patterns of travel and access to services. Prioritisation: Essential Infrastructure

 Table 9
 Summary table of infrastructure types and our approach

5.5 Provision of infrastructure in most cases does not represent an absolute constraint but merely represents a cost of mitigating the impact of development through provision of new or improved infrastructure. Therefore, whilst consideration of this baseline is essential, the spatial distribution of growth will depend on further factors such as the trade-offs between different infrastructure types, the optimal cost implications associated with the provision of infrastructure to support growth as well as settlement constraints and the environmental capacity to accommodate growth. This approach is adopted through the Study with identification of the environmental constraints and an analysis of the marginal costs associated with the infrastructure required to support the potential growth areas identified.

5.6 Full details of all infrastructure types by settlement and the specific infrastructure's capacity to support new homes without significant mitigation (i.e. provision of a new unit of infrastructure or major works with significant costs) are detailed in Appendix 5.

Infrastructure Pressures by Settlement

- 5.7 A summary of each settlement's overarching infrastructure picture is identified based on the tipping points analysis set out in Appendix 5. The suitability for growth based purely on the level of infrastructure as a baseline is analysed for each settlement and an indication of how much growth the settlement could currently accommodate without any further infrastructure improvements (apart from those purely ancillary to the development) is given. This 'tipping point' relates to the point where a fundamental or essential infrastructure type will reach capacity. This does not represent the absolute capacity of the settlement and is not a show-stopper of growth, but gives an indication of how much additional growth the existing infrastructure could accommodate before investment is required.
- 5.8 NLP have not reviewed infrastructure from the perspective of the quality of service provision, particularly where information was not readily available – this is a matter outside the remit of this Study. Assessments of infrastructure provision are based on the application of the benchmark standards identified, information and facts provided by infrastructure and service providers and subsequent feedback from those stakeholders.

Forest Heath

Brandon

5.9

Brandon has a mixed provision of existing infrastructure for a town of its size. Infrastructure types including provision of local shops and services, indoor sports facilities and capacity of utilities, such as wastewater treatment and energy infrastructure, are all very good with capacity to accommodate growth. The primary schools in the town have much capacity for new pupils and the middle school has a small amount of capacity, though in the medium term the Schools Organisation Review is likely to alter this position. Pupils in Brandon may also use schools in Norfolk, although this would need to be agreed with the respective Local Education Authorities. In contrast, health facilities such as GPs and dentists are under significant strain with a deficit of 3-4 GPs for a settlement of Brandon's size. A Health Centre in Brandon has recently been given planning permission which will address this deficit, but until then this is a key infrastructure constraint. Community facilities and green infrastructure could also need additional provision, with outdoor sports facilities currently limited in provision and no existing allotment facilities.

5.10 Overall, Brandon has the infrastructure in place to support reasonable levels of development. A key tipping point has already been reached with the poor provision of health services, although this is currently being addressed which will allow growth. Beyond this, growth will be constrained by existing fundamental and essential infrastructure at circa 300-600 new homes where capacity in middle schools and upper schools is reached, although this assumes no new homes are built elsewhere across the northern area of Forest Heath which these schools also serve.

Lakenheath

- 5.11 Lakenheath has a good network of existing infrastructure for a Key Service Centre of its size. Particularly it is well served currently for local services, though a wider coverage for local convenience shops would enhance provision. The primary school has a good level of capacity for new pupils and the existing provision of community centres is good with several facilities. New provision and improvement of existing provision of green infrastructure such as pitch and non-pitch sports facilities, allotments and playgrounds needs to be considered. Whilst GP provision is in line with existing requirements there is an underprovision of dentists. Lakenheath's physical infrastructure capacity is mixed, with the substation currently operating comfortably within capacity but headroom for only a very small amount of development at Lakenheath Wastewater Treatment Works. Public transport is another key constraint with bus services currently requiring continual investment to ensure a frequent service.
- 5.12 Overall, Lakenheath has a good range of social infrastructure. Existing capacity issues with Wastewater Treatment means that without investment in this essential infrastructure Lakenheath's existing infrastructure can only accommodate growth of circa 170 new homes.

Newmarket

5.13 Newmarket has a very good network of existing infrastructure for a town of its size. Particularly, it is well served currently for essential infrastructure types including health, with a large number of GPs and Dentists, and education, with existing pupil places in all three levels of schools which could support mediumhigh levels of growth in the town with tipping points identified between circa 1,500 new homes to 4,600 new homes for these infrastructure types. Newmarket also has a very good range of local services and a choice of supermarkets for main food shopping. The provision of outdoor sports facilities has potential for improvement, although provision of allotments as a green infrastructure type is excellent. There are 8 identified community facilities and Newmarket Library is currently adequate, though the location is not ideal. The key infrastructure pressures for Newmarket at present are Newmarket substation which is nearing capacity and potential for congestion on the road network. There are also environmental constraints with the safeguarding of the horse racing industry.

5.14 Overall, Newmarket's existing infrastructure is excellent with the exception of the road network and substation capacity, both of which have identified capacity issues which may prevent medium-high levels of growth without investment. Newmarket substation particularly is nearing capacity and will only accommodate between 0 and circa 500 new homes although EDF currently has plans to upgrade the substation.

Exning

- 5.15 Exning has a good network of existing infrastructure for a village of its size and it is also located nearby to further amenities in Newmarket. Particularly, it is well served currently for green infrastructure, with a good level of sports pitch provision, lots of open amenity space and a large allotment site. The primary school has a reasonable level of capacity for new pupils and middle schools and upper schools are located nearby in Newmarket, where there are also places for new pupils. Exning's physical infrastructure is good, with current capacity within Exning substation and significant headroom in Newmarket Wastewater Treatment Works. The key infrastructure pressures in Exning are the current lack of GPs in the village and also the capacity of junction 37 on the A14. Exning's location near to Newmarket means it has many facilities nearby, but to ensure that it is accessible to residents, consideration should be given to improving bus services and providing direct and off-road pedestrian and cycle links between Exning and Newmarket to mitigate the travel impact of growth.
- 5.16 Overall, Exning has the existing infrastructure to support some growth, and although there is no GP surgery in the village the proximity of Newmarket where there is excellent provision and the size of the village may have prevented this from coming forward. The impact on the A14 and the provision of sustainable transport options to Newmarket are likely to be the key constraints on growth. Existing infrastructure, assuming use of GPs in Newmarket, could possibly support circa 500 new homes, though congestion implications would need to be assessed in detail of any proposal.

Kentford

5.17 Kentford has a very poor range of services currently, with most types of 'required' infrastructure currently not located in the village including sports pitches, non-pitch sports, allotments, playgrounds, library and many of the identified key local services. Although the village had a Village Hall the Built Facilities Study identified that it is currently not in use, although a new Village Hall is being proposed but has not yet come forward for development. The nearest primary school is in Moulton a short distance away, although this does have good pupil capacity. There are no health facilities in the village, although it is theoretically not large enough to support a GP or Dentist. Kennet substation is nearing capacity although Newmarket Wastewater Treatment Works, which serves Kentford, has significant headroom. The transport network has the potential to be good, particularly with the proximity of the A14 and the existing railway station, however, works may need to come forward to ensure the road network is not congested or hazardous and the station is accessible. There are further facilities nearby in Kennet, Cambridgeshire, including a public house and a primary school, although the latter is not well related to Kentford in terms of walking distance.

5.18 Overall, Kentford's lack of existing facilities is a constraint that will need to be addressed to bring forward growth. Circa 50-100 new homes would have a significant impact on the existing infrastructure which already is nearing a tipping point. In consideration of the lack of required infrastructure any development that comes forward should be either minor or of a sufficient level to attract such services and facilities to the village as part of a larger development scheme.

West Row

- 5.19 West Row has a reasonable network of existing infrastructure for a primary village of its size. The primary school has a reasonable level of capacity for new pupils and it has retained services such as a post office and a take away. New provision and improvement of existing provision of green infrastructure such as non-pitch sports facilities, amenity open space and playgrounds needs to be considered. West Row's physical infrastructure is reasonable with some capacity from Mildenhall substation and good headroom in Mildenhall Wastewater Treatment Works. The key infrastructure constraints for West Row relate to its rural road network which is unlikely to be able to support high levels of development and also its health services, with no GPs currently serving the Village and no Dentists.
- 5.20 West Row's overall infrastructure provision is reasonable although the lack of a GP to serve the area is a constraint on its suitability for housing growth. The rural road network around West Row is a constraint to high levels of growth and it is likely that anything beyond small scale development, e.g. circa 100-200 new homes, would have a significant impact on the road network without further mitigation.

Mildenhall

5.21 Mildenhall has a very good network of existing infrastructure for a town of its size. Particularly, it is well served currently for sports pitches and nature reserves. The health facilities in Mildenhall are also very good with surplus provision of GPs and Dentists for its population against the benchmark standard. New provision and improvement of existing provision of green infrastructure such as non-pitch sports facilities, allotments and playgrounds needs to be considered. There is some level of capacity in the existing schools, although Mildenhall College of Technology does serve a wide catchment beyond the settlement itself. Mildenhall's physical infrastructure is reasonable with identified current capacity at Mildenhall Substation and much headroom at Mildenhall Wastewater Treatment Works.

- The key infrastructure constraint for Mildenhall is the current traffic capacity 5.22 within Mildenhall Town Centre. Suffolk County Highways identified that congestion in Mildenhall was high and that the junctions in Mildenhall town centre could potentially take no more vehicle movements. This suggests that upgrades to the existing road network may be required. We understand that that an A11/A1101 relief road was previously considered, linked with the potential relocation of Marshall Aerospace to RAF Mildenhall. However, there were no specific plans by Suffolk County Council (or by other authorities elsewhere within the region) to implement a Mildenhall bypass and the most recent position is that the Marshall Aerospace relocation will not be going ahead. Through our stakeholder engagement Suffolk County Council Highways have identified a bypass or relief road would have the desired effect of reducing congestion, although no delivery mechanism or proposal was formally identified. There is a clear need to tackle congestion as part of growth in Mildenhall and the surrounding area, and this may include a bypass as a longer term option or alternative transport mitigation works. This Study is not in a position to conclude on the most appropriate transport solution that might be adopted. There is a requirement for work to be undertaken to identify what transport schemes and delivery mechanisms can be implemented to allow longer term growth. Once mitigation is provided it will ensure Mildenhall's overall infrastructure capacity to support growth is higher than currently.
- 5.23 Mildenhall's infrastructure is very good, with schools, health and utilities infrastructure all capable of supporting growth. Growth will undoubtedly have a cumulative impact on the road network which is already strained. The provision of a relief road will ease congestion in Mildenhall town centre, as may other highway improvements, although until that mitigation is brought forward, growth would appear to be constrained to smaller levels of development e.g. circa 100-200 new homes.

Red Lodge

Red Lodge has a reasonable network of existing infrastructure, though its 5.24 planned expansion will ensure that provision is improved along with growth, in line with the masterplan. Currently, the provision of Key Local Services is reasonably poor with a limited number of shops. There is also currently no outdoor sports provision or allotments in Red Lodge, although these are under construction. A primary school is yet to be built although it is included as part of the masterplan and is likely to come forward in the next phase of development, once there is enough population to support a primary school. Red Lodge's physical infrastructure is also currently constrained with Kennet Substation currently nearing capacity and Tuddenham Wastewater Treatment Works also likely to reach capacity, with the reasonably limited headroom and further constraints to upgrade the works. Suffolk County Council Highways identified that there is also a constraint around the highway network with the potential for increased traffic impacts on rural roads from development at Red Lodge. This is partially caused by there being no A11/A14 eastbound junction, although the cost of funding such a link, for which there are no specific plans

by Suffolk County Council, would be a hurdle to overcome and likely to be prohibitive. Therefore, alternative upgrades to the rural road network would further mitigate the impact of growth, although there is a requirement for work to be undertaken to identify what transport schemes and delivery mechanisms can be implemented to allow longer term growth. The provision of dentists and GPs will also need to be increased to support development.

5.25 Overall, the existing infrastructure provision in Red Lodge is reasonably poor currently although it is clear that with the planned development as identified in the Red Lodge masterplan that infrastructure will come forward in a coordinated way to support growth. The masterplan addresses its own service and infrastructure provision, so it is important to consider requirements outside of this, although it is important as a settlement earmarked for much development that account is taken of what is likely to come forward. Above and beyond the circa 1,600 homes planned in the masterplan (a good proportion of which are already built – circa 1,200) and taking into account the supporting infrastructure planned (as identified in Appendix D of the Red Lodge masterplan - Phasing & Implementation of facilities & Improvements) there are potential capacity issues with wastewater treatment in accommodating growth above and beyond the planned amount. This could limit growth without further mitigation to circa 1,000 new homes.

Beck Row

5.26

Beck Row has a reasonable network of existing infrastructure for a primary village, however many of its residents work on the Air Base and may use services there that are not necessarily open to community use. This means that provision of many infrastructure types, such as sports facilities, is relatively poor. There are also no GPs or Dentists which its size would be able to support. There is a reasonable amount of capacity from Mildenhall substation, although the Wastewater Treatment Works has significant headroom. Beck Row Primary school has a small amount of capacity for new pupils. The existing road network suffers from some congestion and current public transport is reasonably poor, meaning the transport network is a key constraint, though may be eased by improvements or a Mildenhall by-pass.

5.27 Overall, Beck Row's current infrastructure could only support a small amount of growth before investment in infrastructure is required. The lack of health services is a constraint, particularly given the settlement could support a 2 GP surgery. Beck Row is constrained by the road network around the Air Base and for significant levels of growth this would need to be addressed. Assuming existing good health provision in Mildenhall is accessible there is potential for a small amount of new development of circa 50-100 new homes. Beyond this capacity the primary school could accommodate growth of up to 200 new homes without investment in provision of new infrastructure.

St Edmundsbury

Bury St Edmunds

- In Bury St Edmunds infrastructure types such as shops, built sports facilities, leisure attractions and open space are all provided in very good quantities and qualities for a town of its size and status. Currently, there is existing capacity in the network of schools within the town, although with any potential housing growth this excess will be quickly taken up. The geographic distribution of the upper schools, all within the north west parts of the town, does leave some neighbourhoods beyond a reasonable walking distance to an upper school. Health provision is also excellent with a large number of GPs and dentists and also the Study Area's only hospital with A&E facilities. Bury St Edmunds is poorly served for sports pitches and non-pitch sports facilities, which should be improved to support the existing population and any growth.
- The transport network is reasonably good, although Bury St Edmunds remains a 5.29 car dominated town and one of the key challenges to housing growth will be to improve the public transport network, reduce congestion and promote a modal shift, which will potentially require significant infrastructure works. Despite a reasonable transport network, there are known issues, which have been identified through stakeholder consultation, with the capacity of the A14 Junctions. Utilities provision has existing capacity meaning that only local network upgrades may be required to support small levels of growth, although electricity substation improvements will be needed to support growth in the medium term. Overall, Bury St Edmunds is well positioned to take a reasonably large level of growth without significant upgrades to the strategic infrastructure, although certain areas of social infrastructure, such as outdoor sports provision, will need to be improved. On this basis Bury St Edmunds could accommodate 500-1,000 new homes without significant infrastructure investment to the existing provision. Beyond this upgrades to electricity substations and new primary schools will be required.

Haverhill

5.30

Haverhill has a good network of existing infrastructure with shops, leisure attractions and open space provision very good in terms of spatial provision. Currently there is existing capacity within the network of schools in the town, although with any potential housing growth this excess may be quickly taken up, particularly as the two upper schools serve a large part of the south of the Borough. The transport network is reasonable but it is apparent that significant infrastructure works to the wider road network, including the A1307, are required to support any growth and that public transport should be improved, particularly where it could replace commutes by private car. The provision of outdoor sports facilities (pitches and courts), allotments and playgrounds should be considered as a priority in new development, as these types of facility are in under supply compared with the Local Plan's target ratios. 5.31 One key issue to overcome is the apparent lack of GP facilities as an 'essential' infrastructure. Further scoping work to assess current GP lists and how current GP services are coping should be considered, with sites potentially safeguarded for new health facilities if they are not coming forward already. This GP provision should be addressed before any new housing comes forward as the system is already strained. Beyond this around 500 new homes could be accommodated without significant infrastructure mitigation.

Kedington

- 5.32 Kedington is well served currently by its local services, particularly with the parade of shops in the Westward Deals area which includes a post office, newsagents, hairdressers and butchers. Kedington also has a good range of community facilities, including a library, and amenity open space. There is also a good provision of GPs in Kedington. There is a small amount of capacity in the existing primary school which could accommodate the pupil yield from around 150 new homes. New provision and improvement of existing provision of desirable infrastructure such as outdoor sports facilities and playgrounds will all need to be considered.
- 5.33 The key infrastructure constraints for Kedington relate to transport with potential capacity issues with the road network due to the rurality of the settlement, and current bus provision requiring improvement. Kedington could also potentially support a dentist as a key local health service. Excluding potential issues with wastewater (as these have not been assessed in the SFRA and Water Cycle Study) Kedington's existing infrastructure could support around 150 new homes before investment in new places at the primary school would be required.

Barrow

- 5.34 Barrow has a reasonable network of existing infrastructure for a settlement of its size. In particular it is currently well served for allotments and open amenity space. Currently there is existing capacity within the primary school, although with any potential housing growth this excess may be quickly taken up. New provision and improvement of existing provision of required infrastructure such as nature reserves, outdoor sports facilities, playgrounds and key local services will all need to be considered.
- 5.35 The key infrastructure constraints for Barrow are the provision of GPs which is nearing a tipping point and the consideration of improving public transport accessibility to ensure sustainable travel patterns where possible. As identified in the SFRA and Water Cycle Study, Barrow wastewater treatment works has very little headroom to accommodate growth, which is a critical constraint that will need to be overcome. Without upgrades to the wastewater treatment works only around 140 new homes could be accommodated in Barrow. Approximately 175 new homes would also lead to additional primary school places being required, suggesting Barrow could only take comparatively small levels of growth without significant infrastructure investment.

Risby

- 5.36 Risby has a reasonable network of existing infrastructure for a settlement of its size, though it lacks many services that underpin sustainable and self sufficient settlements. One key area of potential improvement is the provision of green infrastructure, with opportunities to enhance outdoor sports provision and open amenity space. Risby Primary School is currently over-subscribed and this will mean that there may be significant up front infrastructure required to support development. It also lacks provision of health facilities and has a poor selection of key local services, including the absence of a local shop capable of providing a top-up shopping function, which is key to sustainable settlements. Risby is located conveniently for the A14 although improved sustainable transport options may be a requirement to encourage people to not use their cars.
- 5.37 Overall Risby's current infrastructure is not well developed to accommodate further growth. The primary school is already oversubscribed and the lack of key facilities, such as a local convenience shop will need to be addressed before any development takes place in Risby.

Ixworth

- 5.38 Ixworth has a very good network of existing infrastructure. In particular it is currently well served by its range of local services, including a post office, a number of sports pitches, a library, and a well equipped village hall. There is also a good provision of GPs in Ixworth. Whilst there is a significant level of capacity within the middle school, currently the primary school is nearing capacity, although the school reorganisation may alter capacity. New provision and improvement of existing provision of desirable infrastructure such as nonpitch sports facilities, open amenity space and playgrounds will all need to be considered.
- 5.39 The key infrastructure constraints for Ixworth are the provision of dentist's which is nearing a tipping point and the consideration of transport issues if high levels of growth are to be accommodated. Existing capacity at the primary school could only accommodate additional pupils equivalent to circa 60 new homes before additional places may need to be sought.

Stanton

5.40 Stanton has a very good network of existing infrastructure and it is currently well served by its local services, with existing capacity in its primary school and middle school to support a reasonable level of development. There is an excellent provision of GPs in Stanton, although there are currently no dentists. New provision and improvement of existing provision of green infrastructure such as non-pitch sports facilities, amenity open space, allotments and playgrounds may be required, although current sports pitch provision is good. 5.41 Stanton's physical infrastructure is good with substantial capacity for wastewater treatment and a reasonable transport infrastructure in place. The key tipping point in relation to infrastructure is around 500 new homes when additional investment in electricity substation capacity may be required. Although there is only capacity for pupils from approximately 380 new homes in the middle school, it is likely the school reorganisation will address this medium term capacity issue, particularly with many more pupil places in Stanton Primary School.

Clare

- 5.42 Clare has a good network of existing infrastructure for a settlement of its size. Particularly it is currently well served for allotments and open amenity space. There is also a good provision of GPs in Clare. The library and good provision of community facilities mean that it has a range of facilities to underpin strong and vital neighbourhoods in the settlement. New provision and improvement of existing provision of required infrastructure such as nature reserves, outdoor sports facilities and playgrounds will all need to be considered.
- 5.43 The key infrastructure constraints for Clare are the provision of dentist's, which is nearing a tipping point, and the consideration of transport issues if high levels of growth are to be accommodated. There is also only a small level of pupil capacity in the settlements existing schools. These three issues are likely to constrain Clare to less than 100 new homes unless the investment in infrastructure to mitigate these tipping points comes forward.

Wickhambrook

- 5.44 Wickhambrook is currently well served for a range of infrastructure including sports pitches and health provision where the three GP surgery is a very important service. The primary school has a reasonable level of capacity for new pupils, equivalent to the yield of circa 400 new homes. New provision and improvement of existing provision of green infrastructure such as non-pitch sports facilities, amenity open space, allotments and playgrounds needs to be considered. Wickhambrook's physical infrastructure requires further investigation to better understand wastewater capacity as well as further identification of costs associated with key transport schemes such as bus investment. Electricity substation capacity is good with no issues identified.
- 5.45 The key infrastructure constraints for Wickhambrook relate to its distance from Haverhill, Bury St Edmunds and Newmarket as the nearest towns with higher order facilities, meaning there is an increased need to travel. This means that Wickhambrook is reasonably isolated from some important infrastructure types, particularly upper schools and leisure facilities such as cinemas and swimming pools, which impacts on its sustainability as a location and therefore its suitability for substantial growth.

Overall Study Area Wide Impacts and Infrastructure Pressures

5.46

As well as identifying individual settlements infrastructure pressures, consideration should be given to infrastructure pressures at a Study Area-wide basis, particularly as many residents in the Study Area live in rural areas. An assessment of the overall infrastructure constraints to inform the testing of Opportunity Areas has identified a number of key themes in specific infrastructure types that will need to be taken into account in forming Opportunity Areas. The key issues for 'fundamental' and 'essential' infrastructure types are as follows:

- Education There are currently surplus school places throughout the education system in the Study Area. This is particularly pronounced in the primary school tier. There are some areas with localised capacity issues as identified that will need to be addressed. Suffolk County Council is currently in the process of moving from a three tier system to a two tier system, with middle schools to be entirely removed. The ongoing Schools Organisation Review (SOR) will consider how current middle school pupil yield can be accommodated within the system, and will provide a more detailed overview of the definitive school capacity issues for the future.
- Emergency Services All three emergency services are currently
 performing very well in Suffolk and provision of these services are unlikely
 to be a major constraint on growth. Consideration should be given to the
 likely impacts of development on the continual performance of these
 services and how additional infrastructure may be required to continue
 levels of performance.
- Utilities Overall utilities provision is currently adequate. The potable water supply is not a constraint across the Study Area. Wastewater treatment works have varying capacities, as do electricity substations, however, for both these utilities the current infrastructure was deemed adequate for its current purpose. The key issue will be assessing local infrastructure networks in light of specific development proposals as, although future development can be accommodated, there is the requirement for utilities upgrades in some areas.
- Health West Suffolk Hospital is busy but can accommodate growth for the foreseeable future (to 2021). There are longer term visions to improve both capacity and the quality of hospital services through a move from the existing campus with the current hospital campus. This is likely to occur towards the end of the study period (2031), providing new facilities to support both the growth that will occur and space for future upgrades. Until then the existing hospital campus, set in a 19 hectare parkland site on the edge of Bury St Edmunds, has scope for limited expansion to meet the developing health care needs of the Study Area. There are also outpatient services in Newmarket. Overall GP and dentist provision is adequate for the Study Area, though there are numerous areas where gaps in the geographic provision have been identified.

 Transport – The Study Area has a multitude of transport issues, with reasonably high levels of commuting in many areas and a generally high level of car usage necessitated by the rurality of the area. Our stakeholder consultation identified many schemes that need to come forward to continue to support growth, including various junction works along the A14 as well as highways works around Mildenhall, alongside others. Whilst these issues have been brought out in this Study, specific capacity issues and costs to mediate these issues were not able to be identified. In this context specific work should be undertaken to assess the transport capacity of the Study Area and costs to deliver the required infrastructure. This may flow from County Council work on analysis of the transport issues.

In addition to 'fundamental' and 'essential' infrastructure the identification of 'required' infrastructure issues across the Study Area has given a context to how well served the Study Area is for the facilities and services that add amenity value to development and enhance quality of life for residents. The overall key issues for 'required' infrastructure types are as follows:

- Sports and Leisure There is an overall good provision of sports facilities across the Study Area. This is particularly prominent for built sports facilities, such as swimming pools, sports halls and indoor bowls, where provision on a Study Area wide basis is above recommended Sport England levels. The provision of sports pitches and non-pitch sports facilities is generally poor, with large deficits in the larger settlements, although provision in smaller settlements, such as village playing fields, is generally good.
- Green Infrastructure The Study Area is overall very well served for green infrastructure, with several country parks, nature reserves and historic parks and gardens. The general rurality and low density of many of the areas particularly lends itself to settlements that have large amounts of open space. The continued provision of this will be key in growth to ensure that provision for local residents is good, but also to preserve the character of settlements in the Study Area.
- Business Support Notwithstanding the current recession, in general the local economy is performing well with high inward investment and low unemployment compared with UK averages. Whilst Forest Heath has seen a decline in manufacturing and the agricultural sector in St Edmundsbury has contracted, both areas have witnessed growth on dynamic sectors such as banking, finance and insurance, although knowledge-based industries are under-represented which is a potential target sector. A number of initiatives are in place to develop skills and ensure high-levels of business support to aid the set-up and survival of small businesses and it will be imperative that employment growth keeps pace with growth in the labour force linked to new housing supply.

5.47

Overall Messages

- 5.48 In general, across the settlements identified, provision of infrastructure currently reflects the size of the settlement it serves. Most social infrastructure types such as schools, health facilities and community facilities are particularly well served in the larger settlements, as there is a sufficient population to justify their viability. In contrast sports facilities tend to be better provided, in terms of quantity per head of population, in the rural smaller settlements, potentially explained by the historic role that village recreation fields have played in the rural communities and the development pressures on land in the urban areas. Some of the smaller settlements lack elements of basic social infrastructure, although this is a common problem for rural communities where some services cannot be feasibly supported by the community that they serve. This is highlighted by recent trends of post office and public house closures in rural communities across the country.
- 5.49 The physical infrastructure for utilities and transport varies by settlement. Particularly for utilities, it is apparent that providers often plan on a reactive basis and therefore in some areas there is little headroom capacity to support new growth. However, this may merely be indicative of utility companies not wanting to future plan capacity but implement a rolling set of upgrades to capacity as and when development comes forward. Similarly, transport issues are varied with Suffolk County Highways and the Highways Agency highlighting a number of local capacity issues as well as more strategic issues that will require larger schemes to mitigate impacts.
- 5.50 The key message of this baseline infrastructure analysis is that the majority of the settlements analysed can accommodate only reasonably small levels of growth without further investment in infrastructure, whether this be new schools, new wastewater treatment, new roads or other fundamental and essential infrastructure types. This highlights that the level of growth required across the Study Area will bring requirements for new infrastructure.
- 5.51 In determining the strategic distribution of growth, one of the factors for consideration should be the marginal costs and benefits of required infrastructure provision. This will ensure growth is focused on where development makes the most efficient use of the infrastructure needed to support it and help to underpin sustainability by providing infrastructure at a localised scale, redistributing existing excess capacity or surplus provision. Clearly, though, infrastructure is just one of a number of factors determining the scale and location of growth and in defining Opportunity Areas for development we have taken account of the environmental capacity of each settlement and tested this against infrastructure requirements, as identified in the following sections.

6.0 Defining Opportunity Areas

Introduction and Approach

- 6.1 This section identifies the Opportunity Areas where potential development in and around the defined settlements may occur. Fundamental environmental constraints to development are defined and identified in the context of the key policy drivers and the Study Area's emerging settlement hierarchy. The methodology set out below enables the identification of broad potential locations where there are no fundamental barriers to growth. In the identification of constraints to these areas of growth, where necessary, appropriate buffers have been used to reflect the proximity of risks and requirement or ability to mitigate any impacts.
- 6.2 Identified Opportunity Areas have been mapped and associated constraints have been clearly denoted within the mapping (in Appendix 2) to provide an initial basis for further exploration and discussion, through the stakeholder workshop (30 January 2009), in order to identify further detailed key issues or other constraints and importantly to consider infrastructure barriers and requirements.
- 6.3 The outputs from this section are the identification of theoretical estimates of dwelling yield from development in and around the settlements. These estimates are, in effect, environmental capacity estimates solely for new homes and do not represent proposals for growth in each settlement.

Methodology

- 6.4 The starting point for the definition of Opportunity Areas is the emerging **settlement hierarchy** proposed by the local authorities in their emerging Core Strategies. In terms of this Study, this is a policy filter that has lead to concentrating and considering growth mainly in those proposed Towns and Key Service Centres (and including primary villages for FHDC, due to existing constraints in the Towns and promotion of rural sustainability for the larger villages). This has meant ruling out growth in other (smaller) settlements because they are not in accordance with national policy and do not contain the sufficient levels of infrastructure and services to underpin growth. In most cases the use of the proposed settlement hierarchy fits with obvious constraints and infrastructure issues (e.g. the presence of services within settlements and/or accessibility).
- 6.5 The process of analysing each settlement to identify potential Opportunity Areas is based initially on the identification of major physical constraints to development from environmental designations. This led to a series of fundamental constraints (e.g. SSSIs, nature reserves, landscape designations – see Table 10 below) where the longstanding policy assumption has been that development should be restricted. In general terms, this means avoiding

development on the designated site itself and providing an appropriate 'buffer' around the designation. The calculation of these buffers varies depending on the sensitivity of the designation. Therefore a highest level precautionary buffer has been established as 1.5km buffer as a starting point for very sensitive habitats such as the Stone Curlew nesting ground (as advised by the RSPB in stakeholder engagement and recommended in the Forest Heath HRA) and a 400-500m buffer around national, regional or local designations as advised by Natural England. However, where development already reaches closer to the designation that the buffer, the line of the proposed buffer is drawn along the existing settlement edge.

6.6 Development within these identified protective buffers is strongly recommended to be avoided at this strategic level of assessment, however, emerging Council policy positions relating to these buffers will confirm whether detailed development proposals are acceptable on the basis of site specific assessment or whether it might be possible to identify mitigation for individual schemes. Other strategic constraints identified (such as flood risk zones) should be protected from development. However, at a more detailed level, it might also be possible to identify mitigation for such strategic constraints as part of an individual scheme (such as flood defences). For the purposes of this Study, such areas have been ruled out on a precautionary basis.

6.7 In addition to the above constraints, identification of more subjective constraints has been used to guide Opportunity Areas, for example landscape/topography buffers and settlement coalescence. The approach to these was to examine each settlement individually using a range of desk based information including topographical maps, aerial photographs, and landscape character area descriptions for the two districts identifying areas of particularly high landscape sensitivity (Countryside Agency – Character of England Project).

- 6.8 The landscape buffers are based on the landform surrounding existing settlements and initially rule out locations which would cross natural landform divides between settlements (ridges). Locations which form prominent features within the landscape were identified and Opportunity Areas constrained by avoidance of exposed hill sides or slopes where new development may be viewed out of context with the existing settlement. These buffers were then discussed with the local authorities to ensure that location specific local issues could be fully included and then they were tested through the stakeholder workshop (30 January 2009) specifically requesting stakeholders to comment on whether the buffers were appropriate given the character of the area.
- 6.9 The starting point for consideration of the coalescence buffers was the respective size of each settlement and their location with respect to other settlements, as larger settlements have larger buffers between them (i.e. broad application of a logical Central Place Theory). These buffers were then discussed with the local authorities to ensure that location specific local issues could be fully included, be they historical, landscape, or social based. The buffers were then also tested through the stakeholder workshop (30 January

2009) specifically requesting stakeholders to comment on whether the buffers were appropriate given the character of the specific settlements.

6.10 Where none of the above environmental designations apply, the identification of desirable boundaries to existing development (for example major roads or rail lines, rivers) has been used to guide identification of Opportunity Areas. Similarly, where development would not be constrained by any of the above physical boundaries, the potential risk for an extension to result in an undesirable urban form, such as a linear or disjointed settlement pattern, has also been used to guide identification of Opportunity Areas. Such undesirable urban forms may require a greater reliance on private transport, and walking distances from existing centres were used to gauge where this would be an issue, albeit used in consideration with other factors, and not identified as a showstopper in its own right. Key services are mapped for each settlement and walking catchments around these are identified. Access to services/public transport has been identified at a high level and largely drives the settlement hierarchy at the beginning of the process.

Identification of Constraints

- 6.11 Constraints have been identified across the two districts which inform where development is possible without fundamental constraint.
- 6.12 The table below sets out the constraints that have been considered, summarising the scale to which they are designated and their interpretation and definition for the purpose of identification of potential Opportunity Areas.

Constraint name	Interpretation
Historic Park & Garden	Areas of significant landscape and cultural importance. Highly sensitive to new development. Development with the potential to impact on the setting of the garden should be avoided through provision of a suitable visual buffer. Constraint weighting: Fundamental constraint including suitable buffer
Area of Archaeological Importance	Designation does not prohibit development in all cases and individual desk and site surveys will be required to establish site sensitivity. Constraint weighting: Not a fundamental barrier to development for the purposes of the Study / subject to individual site investigation
Conservation Area (Built Environment)	Requirement to protect character and appearance of conservation areas. Designation does not prohibit development. Individual Conservation Area (CA) character appraisals will be required to establish site sensitivity of conservation to new development, particularly where these affect the landscape setting of rural conservation areas.
	Constraint weighting: Subject to detailed site investigation / more likely to be a fundamental constraint in rural locations due to role of landscape in CA character.
Scheduled Ancient Monument (SAM)	Requirement to protect setting of SAMs. Designation does not prohibit development. Individual appraisal will be required to establish site sensitivity of setting of the SAM to new development. Constraint weighting: Recognised constraint subject to detailed site investigation / more likely to be a fundamental constraint in rural locations

Constraint name	Interpretation
Listed Buildings	Individually graded buildings of historic value. Designation does not prohibit development. Individual appraisal will be required to establish sensitivity of setting to new development. Listed building protection carries the same weight regardless of location, however, the setting to listed buildings within rural or open areas may be more sensitivity to new development due to potential change from rural to urban character.
	Constraint weighting: Recognised constraint subject to detailed site investigation / more likely to be a fundamental constraint in rural locations due to the additional character value of the landscape settings.
Studland	Although specific to Forest Heath District Council the significance of the horseracing industry to the district is of key importance to the character and economy of the District and particularly Newmarket. Designated studland should be protected from potential negative impacts of new development. Constraint weighting: Fundamental constraint preventing loss of studland
National Nature Reserve	Area of habitat importance protected by national policy. Sensitive development
	with an appropriate buffer to designated site may be possible.
	Constraint weighting: Fundamental constraint including suitable buffer
Local Nature Reserve	Area of habitat importance protected by local policy. Sensitive development adjacent to designated site may be possible, providing suitable mitigation is proposed.
	Constraint weighting: Fundamental constraint
RSPB Reserve	Area of bird wildlife protection. Highly sensitive to new development. Development with the potential to impact on protected habitats should be avoided through provision of a suitable buffer.
	Constraint weighting: Fundamental constraint including suitable buffer
RAMSAR Site	Area of Habitat Protection. Highly sensitive to new development. Development with the potential to impact on protected habitats should be avoided through provision of a suitable buffer.
	Constraint weighting: Fundamental constraint including suitable buffer
SSSI/Special Protection Area (SPA)	Protected area of geology, topography, or ecology interest. Highly sensitive to new development. Development with the potential to impact on protected habitats should be avoided through provision of a suitable buffer – dependent on the reason for designation.
	Constraint weighting: Fundamental constraint including suitable buffer
SSSI/Special Protection Area (SPA) – Breckland Farmland (Stone Curlew Habitat)	Area of habitat protection for rare and vulnerable birds. Highly sensitive to new development. Development with the potential to impact on habitat potential of SPA should be avoided through provision of a suitable buffer. SSSI designations within the SPA may be related to any habitat plant or animal and therefore buffers will vary. SSSIs that have been identified by the two Council as being designated for the protection of Stone Curlews have been mapped with a precautionary buffer of 1.5km. Other designations have had an assumed buffer of 400m. In departure from this strategic interpretation, the LPAs may identify locations where site specific mitigation is being investigated through the HRA process and where buffers may be relaxed. Where this is the case it has been clearly identified in the text as an exceptional circumstance and potential environmental impacts have been highlighted accordingly.
Special Area of Conservation (SAC)	Area of habitat protection. Highly sensitive to new development. Development with the potential to impact on natural quality of SAC should be avoided through mitigation of impacts or provision of a suitable buffer. Constraint weighting: Fundamental constraint including suitable buffer

Constraint name	Interpretation
Heathland Opportunity Mapping: High Scoring Ecological Potential Heathland	Area of high value ecological potential. Sensitive to new development. Development with the potential to impact on ecological value of area should be avoided. Constraint weighting: Fundamental constraint
Biodiversity Priority Habitat: Heathland	Area of high ecological value. Sensitive to new development. Development with the potential to impact on ecological value of area should be prevented or risks minimised through mitigation of impacts or provision of a suitable buffer. Constraint weighting: Fundamental constraint including suitable buffer
County Wildlife Site	Area of habitat protection. Highly sensitive to new development. Development with the potential to impact on natural quality of County Wildlife Sites should be avoided through mitigation of impacts or provision of a suitable buffer. Constraint weighting: Fundamental constraint including suitable buffer
Forestry Commission Land	Area of landscape value or recreational use. Forestry Commission land should be retained as a valuable natural and recreational resource. Constraint weighting: Fundamental constraint
Country Park	Area of landscape value or recreational use. Country parks should be retained as a valuable natural and recreational resource. Constraint weighting: Fundamental constraint
Flood Zone 3	Flood Zone 3 is taken as highly prohibitive to new development. Development proposed within this zone would require extensive Flood risk assessment data and mitigation of any identified flood risk. Constraint weighting: Fundamental constraint
Flood Zone 2	Development proposed within this zone would require extensive Flood risk assessment data and mitigation of any identified flood risk. Constraint weighting: Fundamental constraint
Source Protection Zone 1 (Inner protection zone)	Designated to protect groundwater supply of water. Development within this zone would require mitigation of any direct discharge into groundwater of surface water run-off for impermeable areas such as public/amenity use, car parks, major roads. A consideration for major development proposals however, not prohibitive of development where suitable mitigation can be established. Constraint weighting: Recognised constraint subject to detailed site investigation and potential mitigation
Source Protection Zone 2 (Outer protection zone)	Designated to protect groundwater supply of water. A consideration for major development proposals however, not prohibitive of development where suitable mitigation can be established. Constraint weighting: Recognised constraint subject to detailed site investigation and potential mitigation
Best Most Versatile Agricultural Land (1-3a)	Criteria taken from national policy in application of this constraint: "Where significant development of agricultural land is unavoidable, local planning authorities should seek to use areas of poorer quality land (grades 3b, 4 and 5) in preference to that of a higher quality, except where this would be inconsistent with other sustainability considerations."
B Road, A Road	Potential noise / pollution issues at close proximity to major road infrastructure. No constraint to development providing suitable mitigation can be provided. Constraint weighting: Recognised constraint subject to detailed site investigation

Constraint name	Interpretation
Railway Line, Railway Station	Potential noise disturbance issues at close proximity to railway infrastructure. No constraint to development providing suitable mitigation can be provided. Constraint weighting: Recognised constraint subject to detailed site investigation
Topography (Slope, ridge, valley heads)	An intrinsic consideration for urban extensions into the countryside. Topography needs to be considered in relation to where proposed development will be visible from and whether change in level across the site will restrict growth potential. Constraint weighting: Recognised constraint requiring impact avoidance or site
Green Corridor (existing or proposed)	Corridors of open land which perform an important role in linking larger landscape features and allowing non-human networks to establish, strengthening and developing habitat cross-fertilisation.
	Constraint weighting: Recognised constraint where potential for retention or creation of green corridor exist
Avoidance of coalescence between settlements	Clear definition between individual settlements is a key consideration in retaining existing character and community. This is particularly important for small settlements surrounding large urban areas. For small hamlet and village developments these buffers may be reduced proportionately to the size of the settlement providing a sensitive design approach can ensure the settlement character is maintained.
	Constraint weighting: Fundamental constraint including suitable buffer
Road Junction with potential capacity issues	Identification of existing infrastructure constraint in terms of local road junctions relate to existing flows of traffic and potential additional burden from new development. Constraint is location specific and level of overall constraint is based on advice provided by Suffolk County Council Highways department. Constraint weighting: Recognised constraint subject to preference against sustainability considerations
Sensitive Views	Identification of sensitive views which may be subject to harm as a result of new development.
	Constraint weighting: Recognised constraint requiring impact avoidance or site specific mitigation
Air Base safeguarded zone	Buffer surrounding airfield identified by the MOD
	Constraint Weighting: Fundamental constraint to development within highest protection zone (White) all other zones require consultation depending on height of proposed development.

Table 10 Summary table of constraints identified within the two districts

6.13 The constraints above have been mapped using GIS software and professional desk based cartography to produce base information plans and analysis plans for identification of Opportunity Areas within the two districts. These plans are contained within the Strategic Plans Document (Appendix 2).
Mapping

6.14

The baseline analysis plans included within this report comprise the following which are included in the accompanying Strategic Plans Document (Appendix 2):

- Green Infrastructure Plan Denotes all of the relevant green infrastructure associated within the Study Area
- Water Constraints Plan Denotes the relevant obtained water constraints associated within the Study Area (Including Flood Zones)
- Agricultural Grades Denotes all of the agricultural grades within the Study
 Area
- Walking Catchments Plan Denotes the walking catchments from the centre of local centres
- Opportunity Area Plan Reference plan denoting all of the Opportunity Areas being considered across the Study Area
- Settlement Hierarchy Identifies the settlement hierarchy and defines those where more
- Topographical plan shows contour information across the two districts
- School Locations identifies current school locations and walking catchments to upper schools
- SSSI/SPA Buffer Plan identifies a mathematical 1.5km SPA buffer around Stone Curlew sites and a 400m SPA buffer around Woodlark and Night Jar sites and around SSSI designations.
- 6.15 Because the Study Area is large, and to provide sufficient level of detail for analysis, the area has been divided into 'sectors'. For each 'sector' of the Study Area, three or four plans have been produced:
 - Designations Identifies key designation constraints
 - Services / Infrastructure / Facilities Highlights locations of existing infrastructure provision
 - Constraints and Opportunities Plan Sets out NLP's assessment of constraints to growth and the resultant opportunities interpretation for new growth
 - Topography plans are also provided for larger settlements.

Settlement Hierarchy and Characteristics (Constraints and Opportunities)

6.16 The emerging settlement hierarchy defined by the respective authorities includes settlements with existing facilities capable of accommodating growth, or where growth might help support local services. The table below sets out the emerging settlement hierarchy used as the basis for identifying Opportunity Areas for potential growth. It identifies the key characteristics of the settlement and constraints and opportunities which shape its potential. Further detail of the assessment for each settlement prior to, and as part of, the identification of Opportunity Areas is included on a settlement by settlement basis in Appendix 3, and the conclusions are summarised in Table 11 and Table 12 below. These are discussed in more detail in the following section.

- 6.17 Where Opportunity Areas have been identified they are categorised as either settlement optimising development or urban extension. The two Opportunity Area types have the following characteristics:
 - Settlement optimising this development typology relates to infill and fringe development, i.e. this development typology is geographically located towards the centre of the existing settlement but may include both 'strategic' (i.e. greenfield) and 'brownfield' (i.e. previously developed) sites. As such it incorporates currently identified SHLAA sites (from Stage 7 of the CLG defined SHLAA process with sites as of 16/01/09). Where identified sites are on settlement boundaries these are anticipated to prominently be less than 0.5ha and therefore are not considered major extensions to the settlement as described below.
 - Urban extensions this development typology is defined as directionally specific points of growth from the existing urban edge specifically over previously undeveloped land, beyond existing development boundaries. Typically these are site of larger than 0.5ha.
- 6.18 Larger settlements may have more than one Opportunity Area identified, of more than one typology. In addition sites may come forward, which are not currently identified by the SHLAA, therefore leading to a combined range of sites, both strategic and brownfield, allowing a robust test capacity to be identified.
- 6.19 Notwithstanding the above typologies, very small development within rural locations, typically of less than 10 units is still assumed to continue as present, although, developments of this scale are not individually identified as they will have a limited influence on strategic infrastructure, and will be assessed for environmental constraints at a project level.
- 6.20 The table below summarises where the settlement constraints have been used as a filter in identifying where growth opportunities exist and where areas are discounted due to fundamental constraints. The summary of the opportunity within the zone (North East, West, South and Central) is provided, and either identifies the relevant Opportunity Area (nos. 1-35) reference for further assessment, (later in this section) or states clearly that the combination of constraint results this zone being discounted from further investigation. A complete summary of the reasons for the discounting of zones and justification for identified opportunity areas is included in Appendix 3.

Table 11:	Summary	of Forest	Heath
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Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
Forest Heath District Council:		
	Existing population 9,440.	Settlement
	Located to the northern border of Forest Heath and Thetford District Brandon is the second largest settlement within Forest Heath.	opumising
Brandon (Town)	Significant environmental constraints limit potential for expansion of the existing town beyond its current boundaries. Sensitive built form constraints including conservation area and listed buildings would need to be taken in to consideration although this does not present a fundamental constraint potential Settlement optimising development.	
	North - No opportunity for major growth has been identified in this area due to significant flood risk and protection of identified highly sensitive habitat to the north west.	
	East - A linear development form is considered to result in an unsustainable form of development and therefore further major development in this location has been discounted.	
	South - Although well related to the town centre the southern boundary of Brandon is of sensitive landscape value and therefore has been discounted from further investigation as a location for settlement extension to protect the environmental and amenity value.	
	West - The western boundary of Brandon is of sensitive landscape value and therefore has been discounted from further investigation to protect the environmental and amenity value.	
	Central - Opportunity for settlement infill and small scale urban edge development (<0.5ha), notably to the east these are likely to exacerbate levels of unsustainable travel to the existing centre. As identified in the Forest Heath HRA (March 2009), development may be possible to the south of Brandon subject to detailed investigation of impacts to the SPA designations and appropriate mitigation. The detailed HRA work has identified that development in this sensitive location may be able to proceed without harm and therefore justifies a more flexible interpretation of the buffers around the SPA designation. This should be regarded as a long term opportunity subject to detailed ecological investigation. Further details are provided in the Opportunity Area Assessment 1.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
Lakenheath (Key Service Centre)	Existing population 5,285	Settlement
	Located on the border of the Ely District Drainage Board to the north of Forest Heath district. Lakenheath is the third largest settlement within Forest Heath.	optimising, north, east and south extension opportunities
	Flood zones and habitat protection constraints exist to the west, north and south of the settlement. To the east the majority of land around Lakenheath is within the white Airbase Safeguard Zone.	
	North - Potential for settlement extension. Details are provided below in Opportunity Area Assessment 3.	
	East - Potential opportunity for growth to the north east subject to protection of the SSSI designations and consultation with the MOD. Further details provided in Opportunity Area Assessment 4.	
	South - To the south west an area of land between the B1112 and the cut-off channel has been identified as an Opportunity Area for further investigation. See Opportunity Area Assessment 5.	
	West - No opportunity for growth has been identified in this location due to significant flood risk and impact on existing settlement character.	
	Central - Opportunity has been identified for infill development and small scale strategic infill, albeit fringe development is unlikely to be available on the western fringe of the development due to the existing boundary formed by the Cut-off Channel. Further assessment is set out in Opportunity Area Assessment 2.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
Newmarket (Town)	Existing population 20,048	Settlement
	Newmarket is the largest settlement within Forest Heath located to the far west of the district on the boundary with East Cambridge District.	and North (East) extension
	Newmarket benefits from a unique heritage and current economy from the horse racing industry around the town which should be protected through any further development within or around the settlement.	
	North - Potential for expansion including Hatchfield farm, where a site has been identified for further investigation as Opportunity Area 7.	
	East - No opportunity has been identified in this location due to potential character and landscape impacts to Newmarket and its stud land resources.	
	South - No opportunity has been identified for major extension to the south of Newmarket due to potential impact on the character and landscape settling of the settlement and impact on the stud land resources.	
	West - No opportunity has been identified for major extension to the west of Newmarket due to potential impact on the character and landscape settling of the settlement, and impact on the stud land resources.	
	Central - Opportunity for settlement optimising development, however it is unlikely that small scale fringe development will be possible due to the sensitive settling of the existing town. Further investigation is set out in Opportunity Area Assessment 6.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 2,224	Settlement
Exning (Primary Vil	Exning is located adjacent to Newmarket to the north of the A14. The A14 divide means Exning remains a distinct settlement from Newmarket.	optimising
	Exning has similar characteristics to Newmarket in that it is surrounded by stud land. The settlement is also mostly included within a conservation area, which links the centre with open countryside to the north. The sensitive landscape and heritage setting limits the development potential in Exning.	
	North - No Opportunity Areas for major growth have been identified in this area due to potential impact on the sensitive landscape character and stud land resource.	
	West - An Opportunity Area has been identified on agricultural land to the immediate west of the existing settlement. Potential growth in this area will need to consider the surrounding sensitive landscape, which is assessed in more detail in Opportunity Area Assessment 8.	
age)	South - No Opportunity Area is identified for potential growth to the south of Exning due to the A14 barrier.	
	West - No Opportunity Areas for major growth have been identified in this area due to potential impact on the sensitive conservation area character and stud land resource.	
	Central – No specific Opportunity Areas for major growth have been identified in this area due to potential impact on the sensitive Conservation Area character. Sites may come forward. However, they are likely to be small and therefore will not have a significant impact on the strategic issues considered in this report.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
Kentford (Primary Village)	Existing population 1,184	Settlement
	Kentford is located to the east of Newmarket immediately south of the A14. Kentford is recognised as a relatively small primary village.	opumising
	Kentford is limited by the A14 to the north and sensitive landscape character to the south. Kentford is located close to Kennet Station but has very few existing facilities.	
	North - Major growth in this area has been discounted from further investigation as it would result in an unsustainable development form, disjointed from the remainder of the settlement by the A14.	
	East - Potential growth in this location has few environmental constraints. However, given the size of the existing settlement and the limited access to existing facilities, major growth in this location has been discounted, and additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area 9.	
	South - Potential growth in this location has few environmental constraints aside from potential impact on landscape character. However given the size of the existing settlement and the limited access to existing facilities, major growth in this location has been discounted, and additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area 9.	
	West - Major growth in this area is discounted as a result of the identified area of Flood Zone 3 to the west of the settlement.	
	Central - Infill and small scale extension to the existing settlement have been identified as an opportunity in Kentford this includes development on the fringes to the east and south, but not beyond the A14 to the north or within the identified Flood Zone to the west. This Opportunity Area is assessed in more detail as Opportunity Area 9.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
West Row (Primary Villag	Existing population 1,805	Settlement
	West Row is located to the west of Mildenhall towards Forest Heath's boundary with East Cambridgeshire District.	opumising
	Potential development within West Row is primarily affected by the settlement's close relationship to Mildenhall and the Mildenhall Airbase.	
	North - Potential growth in this location is not discounted by environmental constraints, however it is limited by the location of Mildenhall Airbase. Overall, given the size of the existing settlement and the limited access to existing facilities major growth in this location has been discounted, and additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area 10.	
	East - Potential growth in this location is limited through the maintaining of a buffer between West Row and Mildenhall. In addition, given the size of the existing settlement and the limited access to existing facilities major growth in this location has been discounted, however, additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area 10.	
(e	South - No Opportunity Area has been identified in this location due to constraint from Flood Zone 2/3	
	West – Potential growth in this location is not constrained by environmental designations. However, given the size of the existing settlement and the limited access to existing facilities, major growth in this location has been discounted, and additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area assessment 10.	
	Central - Small scale infill development and small fringe sites are considered appropriate development forms for growth within West Row. This growth is assessed in more detail as Opportunity Area 10	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 9,324	West,
	Located within the centre of the district off the A11 Mildenhall is the third largest settlement within Forest Heath.	Settlement optimising, east
	Development potential within Mildenhall is limited by landscape designations to the east of the settlement and the airbase to the west. Quantum of potential development may also be affected by limitations in capacity of the existing road network through Mildenhall.	
	North - No opportunity for further growth is identified in this area due to identified environmental constraints, and constraint from the Mildenhall Airbase.	
Mildenhall (Town)	East - Whilst development within this location may have an impact on the environmental value of the SPAs / SSSI, the Council have identified that through stakeholder consultation with natural England, potential may exist for release of SPA land if sufficient replacement habitats can be created elsewhere in the SPA. An Opportunity Area of urban extension has therefore been identified in this location in order to test this potential further through the stakeholder consultation process. This is assessed as Opportunity Area 13.	
	South - No opportunity for growth has been indentified in this area due to flood zone constraints.	
	West - Potential risks of coalescence and restrictions from the cordon to the water treatment works have been identified. However, these constraints do not fundamentally prevent development. Therefore this area is assessed in more detail in Opportunity Area 11.	
	Central - Infill and small scale fringe development is identified as potential growth within Mildenhall, and are assessed in more detail as Opportunity Area 12.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 2,261	West, north,
Red Lodge (Key Service Centre)	Red Lodge is located to the north of the A14 on the A11 towards the centre of the district. It is a masterplanned settlement with extant permission for further growth to the east and west. It is provisionally identified as a Key Service Centre, but remains a Primary Village until such time as the masterplan is complete.	south
	Development to the east of Red Lodge is limited by a landscape buffer to protect a Stone Curlew nesting ground. To the west development potential is limited by the line of the A11.	
	North – An Opportunity Area is identified for additional growth to the north east of the existing settlement and approved Masterplan site. This area is investigated in more detail in Opportunity Area 15.	
	East - Area identified for additional growth to the north east of the existing settlement and approved Masterplan site, although potentially limited by the SPA designation buffer to the east. This area is investigated in more detail as part of Opportunity Area 15.	
	South - Opportunity for further development has been identified to the south east, albeit potential may be limited by environmental constraints related to the SSSI and the flood zone to the south. Growth in this location is further investigated as Opportunity Area 16.	
	West - Development beyond the A11 to the west is discounted from further investigation. However, land between the centre of Red Lodge and the A11, not currently within the masterplan Proposals, is assessed in more detail as Opportunity Area 14.	
	Central - No opportunity for settlement optimising development has been identified within the existing centre of Red Lodge.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 3,752	Settlement
	Beck Row is located to the north west of Mildenhall and directly north of the Mildenhall Airbase.	optimising
	Potential development within Beck Row is primarily affected by the settlement's close relationship to Mildenhall and the Mildenhall Airbase.	
Beck Row (Primary Village)	North - Potential growth in this location is not constrained by environmental designations. However, given the size of the existing settlement and the limited access to existing facilities, major growth in this location has been discounted, and additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area 17.	
	East - Potential growth in this location is not restricted by environmental constraints, however, given the size of the existing settlement and the limited access to existing facilities major growth in this location has been discounted, and additional development is explored in the form of infill and small scale fringe development as detailed in Opportunity Area Assessment 17.	
	South - No Opportunity Area for further growth has been identified in this location due to constraint from the Airbase.	
	West - No Opportunity Area for major growth is identified to the west of Beck Row due to constraint from the airbase and dislocation from existing facilities in Beck Row.	
	Central - Settlement optimising development opportunities have been identified as appropriate form of development within Beck Row. Further assessment of this growth is undertaken as Opportunity Area 17.	

 Table 11
 Forest Heath Settlement Characteristics

Settlement Hierarchy Source: Forest Heath District Council Final Policy Option CS1 (August 2008) Population Source: Mid Year 2007 ONS figures rebased to Mid Year 2008 based on best fit output areas

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
St Edmundsbury Borough Council:		
	Existing population 37,575	Settlement
 Bury St Edmunds is the largest town Bury St Edmunds is constraint landscape designations and where there is a green corrida across the south between the Nowton and Ickworth with fur possibilities along the river or to the west of Bury St Edmunds south there are areas of floor north east and east there are landscape or settlement cons of the settlement will also ne sensitive design and appropriate North – An area has been ide growth to the north east of the beyond the existing sugar fact potentially to consider inclusion ports. This area is investigat of Opportunity Area 21. East - Area identified for addit of the existing settlement allor railway. This area is investigat of Opportunity Area 22. South - An area is identified to st Edmunds, but this area is landscape constraints from a form. This area is assessed to 23. West - An Opportunity Area is Bury St Edmunds for potential Area 19. Central - There is opportunity the urban area of Bury St Edmunds for potential area of Bury St Edmunds for potential also be possible (Opportunity majority of fringe locations ar other Opportunity Areas 19-23). 	Located at the centre of St Edmundsbury, Bury St Edmunds is the largest town in the Study Area.	west, north west, north
	Bury St Edmunds is constrained to the south by landscape designations and notably by lckworth Park where there is a green corridor to the south east and across the south between the two registered parks at Nowton and lckworth with further green corridor possibilities along the river corridor of the river Linnet to the west of Bury St Edmunds To the north and south there are areas of flood risk, however to the north east and east there are comparatively few landscape or settlement constraints. The historic core of the settlement will also need protecting through sensitive design and appropriate development.	east, south east
	North – An area has been identified for additional growth to the north east of the existing settlement beyond the existing sugar factory, and in the long term potentially to consider inclusion of sugar beat factory ponds. This area is investigated in more detail as part of Opportunity Area 21.	
	East - Area identified for additional growth to the east of the existing settlement along the line of the existing railway. This area is investigated in more detail as part of Opportunity Area 22	
	South - An area is identified to the south east of Bury St Edmunds, but this area is limited by flood risk and landscape constraints from areas of prominent land form. This area is assessed further as Opportunity Area 23	
	West - An Opportunity Area is identified to the west of Bury St Edmunds for potential growth within Opportunity Area 19.	
	Central - There is opportunity for development within the urban area of Bury St Edmunds, small scale development on the perimeter of Bury St Edmunds may also be possible (Opportunity Area 18). However, the majority of fringe locations are assessed in detail as other Opportunity Areas surrounding the settlement (Opportunity Areas 19-23).	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 23,881	Settlement
	Located to the southern corner of the borough Haverhill is the second largest settlement in St Edmundsbury.	north
	Haverhill has a strong existing boundary to the south leaving only opportunities for growth to the north. However, to the north west existing planning permissions and landscape constraints limit further growth. The only available area for expansion is therefore to the north east of the settlement.	
Ŧ	North - The area to the north west – beyond the existing permission has been discounted due to potential breaching of the ridge divide between Haverhill and Great Wratting and impact on Norney Plantation. However, an Opportunity Area has been identified to the north east of Haverhill, south of the A143 providing the close setting of Great Wilsey Farm can be either protected (as this Study has identified) or appropriately incorporated into development. Further details on this opportunity are assessed as Opportunity Area 25.	
averhill (Town)	East - No distinct Opportunity Area has been identified in this location due to the line of the settlement on the district boundary. This location is considered to be appropriate for commercial development to support the existing concentration of industrial development in this location. No further investigation of housing growth in this location has been identified.	
	South - No growth opportunity has been identified in this location due to the existing defensible boundary of the A1017 and the impacts on sustainability of development form and character of the surrounding countryside.	
	West - No Opportunity Area has been identified for this location due to potential flood risk and landscape designations to the north west, and the A1017/A1307 boundary to the south west. The triangle site allocated for a business park in the adopted Local Plan has also been discounted for housing development due to its unsustainable relationship to the existing town centre, but remains suitable for employment development.	
	Central - An opportunity for settlement optimising development has been identified within Haverhill. This growth is assessed as Opportunity Area 24.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 1,915	Settlement
	Located to the north east of Haverhill, Kedington is a medium sized key service centre.	optimising
	A flood zone through the centre of Kedington and significant changes in level around the existing settlement restrict any potential growth to small scale infill development and minor extensions on the periphery.	
	North - No major Opportunity Area has been identified in this location due to the potential impact of development on the landscape setting of Kedington and the flood risk to the north west of the settlement. Notwithstanding this, there may be potential for small scale development on the fringe of the settlement providing suitable protection is given to the two identified County Wildlife sites in this vicinity, considered as part of Opportunity Area 26.	
Kedington (Key Sei	East - No Opportunity Area has been identified for major growth in this location due to potential impacts on the landscape setting of the settlement and the separation from the main transport network. Notwithstanding this there may be potential for small scale development on the fringe of the settlement, considered as part of Opportunity Area 26.	
vice Centre)	South - No Opportunity Area for major growth has been identified in this location due to potential impact on the landscape setting of the settlement and to the south east the separation from the main transport network. Notwithstanding this, there may be potential for small scale infill development on the fringe of the settlement particularly to the south west, considered as part of Opportunity Area 26.	
	West - No Opportunity Area for major growth has been identified in this location due to potential impact on the landscape setting of the settlement and protection of a defensible boundary on the western fringe of the settlement and potential impact on the existing visual separation between Kedington and Haverhill. Given this sensitivity it is also considered that this location would be unsuitable for even small scale fringe developments.	
	Central - An Opportunity Area has been identified for infill development and small scale fringe of settlement development to consolidate the existing settlement and define existing boundaries. Further assessment of this potential is assessed within Opportunity Area 26.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 1,508	South
	Located to the west of Bury St Edmunds, Barrow is a medium sized key service centre.	
	A scheduled ancient monument to the north and sensitive views to the east limit available areas for potential growth to the south of the existing settlement. Any growth is likely to be small scale infill or small peripheral extension.	
Barrow (Key S	North - No Opportunity Area is identified in this location for major expansion to the settlement. In addition, small scale fringe development in this location is likely to impact upon the setting of the Scheduled Ancient Monument and therefore should be restricted. To the north east a suitable buffer to Burthorpe should be retained.	
ervice Cer	East - Opportunity for expansion in this location has been identified as the eastern part of Opportunity Area 27.	
ntre)	South - Opportunity for expansion in this location has been identified as part of Opportunity Area 27.	
	West - Limited opportunity for expansion in this location has been identified as part of the western end of Opportunity Area 27.	
	Central - Due to the small size of the existing settlement optimising development has not been identified as there are likely to be limited opportunities for infill sites coming forward. Fringe sites to the east, south and west have been considered as a single Opportunity Area as detailed above.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 875	South
	Located to the east of Bury St Edmunds, immediately north of the A14, Risby is one of the smaller key service centres provisionally identified in St Edmundsbury.	
	Landscape designations prevent development to the north, east and west, leaving the only development potential to the south, between the existing settlement and the A14.	
Rist	North - No Opportunity Area for growth has been identified in this location due to habitat protection buffer to the west and protection of the historical and landscape character of the settlement to the north east.	
oy (Key Serv	East - No potential growth has been identified in this location as it would form an unbalanced pattern of development, adding to commuting into Bury and not well related to the existing facilities in Risby.	
ice Centre)	South - An Opportunity Area for extension to the existing settlement has been located in this location, providing suitable protection of the SPA designation can be maintained and the character of the Conservation Area can be protected. This location is assessed further as Opportunity Area 28.	
	West - No Opportunity Area has been identified in this location due to potential impact on sensitive habitat designations.	
	Central - Due to the small size of the existing settlement optimising development has not been identified as there are likely to be limited opportunities for infill sites coming forward. Fringe sites to the south have been considered as forming part of a southern extension Opportunity Area 28, as detailed below. Sites to the west and north have been discounted due to historical and landscape constraints.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 2,270	North, east
	Located to the north of Bury St Edmunds on a bus corridor to Diss, Ixworth is a large key service centre.	
	Ixworth is contained by a flood zone to the south and existing relief roads to the north and east. Settlement optimising development within the relief roads provides an opportunity for growth of the settlement to support existing facilities.	
Ixworth	North - Opportunity has been identified for extension within the limits of the A1088. This location is assessed in more detail as Opportunity Area 29.	
ı (Key Ser	East - Opportunity has been identified for extension within the limits of the A1088. This location is assessed in more detail as Opportunity Area 29.	
vice C	South - No Opportunity Area has been identified in this location due to identified flood risk.	
entre)	West - No Opportunity Area for growth has been identified in this location due to potential impact on the landscape setting and character of the settlement.	
	Central - No specific Opportunity Areas for major growth have been identified in this area due to potential impact on the sensitive conservation area character. Sites may come forward. However, they are likely to be small and therefore will not have a significant impact on the strategic issues considered in this report. Fringe sites to the north and east have been considered as part of Opportunity Area 29.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 2,696	South west,
	Located to the northern part of St Edmundsbury, Stanton is the district's largest key service centre.	east
	Stanton is restricted in terms of growth to the north and west by the A143 and to the south east by landscape and historical designations. Development opportunities exist for small scale peripheral development to the south west and to the east.	
	North - No Opportunity Area has been identified in this location due to potential impact on the compact settlement form of Stanton.	
Stanton (Key	East - An Opportunity Area has been identified to the east of Stanton which will need to be assessed in terms of potential impact on the County Wildlife site to the east and the listed Mill to the south east. Further assessment is included with Opportunity Area 31	
Service Cen	South - No Opportunity Area has been identified in this zone due to potential impact on sensitive landscape and heritage designations within and surrounding Stanton.	
tre)	West - An Opportunity Area for growth has been identified between the western boundary of Stanton and the A143. This location is assessed in more detail as Opportunity Area 30.	
	Central - No specific Opportunity Areas for major growth have been identified in this area due to potential impact on the sensitive conservation area character. Sites may come forward, however, they are likely to be small and therefore will not have a significant impact on the strategic issues considered in this report. Fringe sites to the east and west have been considered as part of Opportunity Areas 30 and 31 and are assessed in more detail below.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 1,900	North, east,
	Located on the southern border of the district, Clare is a medium sized settlement provisionally identified as a key service centre.	west
	The character of Clare is protected by a large conservation area covering the majority of the settlement and large area of common land to the west giving a unique relationship to the wider countryside. Opportunity Areas have been identified around the conservation area to the north, east and the south of the existing settlement.	
Clare	North - Very small Opportunity Area has been identified on the northern boundary of the settlement. Development in this location will need to be assessed against its potential impact on the landscape and historical character around Clare. It is assessed in more detail in Opportunity Area 32.	
(Key Service C	East - Opportunity for growth has been identified on the boundary of the settlement, providing impact on the landscape character of the area can be adequately mitigated. Further assessment of this location is provided in Opportunity Area 33.	
entre)	South - No Opportunity Area for growth has been identified in this zone because of flood risk.	
	West - An Opportunity Area has been identified to the western boundary of Clare, south of the Common Land, providing the character of the conservation area of Clare and the wider landscape can be protected. Further assessment of this location is contained within Opportunity Area 34 below.	
	Central - No specific Opportunity Areas for major growth have been identified in this area due to potential impact on the sensitive conservation area character of Clare. Sites may come forward but, they are likely to be small and therefore will not have a significant impact on the strategic issues considered in this report. Fringe sites to the north, east and west have been considered as part of Opportunity Areas 32, 33 and 34 and are assessed in more detail below.	

Settlement Name ID	Key Characteristics/ Approximate Population by Settlement/Description of Location	Opportunity Areas Identified
	Existing population 880 Wickhambrook is a small key service centre, located between Bury St Edmunds and Haverhill. Wickhambrook has a number of outlying hamlets which mean that growth of the village will require a sensitive design approach to ensure the character of the village is respected and coalescence with nearby hamlets is avoided. Therefore development within Wickhambrook is limited to small scale Settlement optimising development.	Settlement optimising
Wickh	North - No Opportunity Area has been identified for major extension to Wickhambrook in this location, due to potential impact on landscape character of the surrounding settlements. Notwithstanding this, smaller infill and fringe development may be possible providing the distinct rural character of the surrounding landscape can be protected. Small scale infill and fringe developments are assessed as part of Opportunity Area 35.	
ambrook (Key Servi	East - No Opportunity Area has been identified for major extension to the eastern boundary of Wickhambrook. Notwithstanding this, smaller infill and fringe development may be possible providing the distinct character of surrounding settlements can be protected. Small scale infill and fringe developments are assessed as part of Opportunity Area 35.	
ce Centre)	South - No Opportunity Area has been identified for major extension to the southern boundary of Wickhambrook. Notwithstanding this, smaller infill and fringe development may be possible providing the distinct character of surrounding settlements can be protected. Small scale infill and fringe developments are assessed as part of Opportunity Area 35.	
	West - No Opportunity Area has been identified for major extension to the western boundary of Wickhambrook. Notwithstanding this, smaller infill and fringe development may be possible providing the distinct character of surrounding settlements can be protected. Small scale infill and fringe developments are assessed as part of Opportunity Area 35.	
	Central - Small scale infill development and small fringe infill sites are considered appropriate development forms for growth within Wickhambrook. Growth in this location is assessed in Opportunity Area 35, including the potential from small fringe infill along the entire perimeter of the settlement.	

 Table 12
 St Edmundsbury Settlement Characteristics

Settlement Hierarchy Source: SEBC Core Strategy Preferred Option (Dec 2008) Policy CS2 Population Source: Mid Year 2007 ONS figures rebased to Mid Year 2008 based on best fit output areas 6.21 The identification of fundamental constraints for each settlement, has influenced the identification of potential Opportunity Areas for growth. These Opportunity Areas are explored in more detail below to establish potential development capacities.

Constraints and Opportunities by Opportunity Area

- 6.22 The opportunity areas have been identified through a process of sieving in respect of fundamental constraints. Based on this analysis (with its due limitations), all opportunity areas identified are deemed capable of supporting a degree of development without significant impact on these constraints. However, in order to compare various opportunities, their potential for impact has been graded based on the relationship of individual settlements or opportunity areas to identified constraints and infrastructure.
- 6.23 The Opportunity Areas which have been identified using the filtering process above are set out in detail in the proformas in Appendix 3. The summary tables below (Table 13 and Table 14) therefore relate to the individual Opportunity Areas rather than the settlements as a whole. For example Brandon may have significant environmental constraint to development surrounding the settlement and therefore infill and urban fringe development areas are identified only - the table assesses the settlement optimising area only as a way of allowing the LPAs to make a judgement on which Opportunity Area would result in the least impact against environmental criteria. For ease of reference these are coloured green, orange and red. The colour coding relates to potential risk of impact and, whilst this potential impact should preferentially be kept as low as possible, a high risk does not necessarily represent a showstopper in relation to the Opportunity Areas which have been identified, although appropriate mitigation at a site specific level may need to be sought.
- 6.24 The infrastructure criteria in Table 13 and Table 14, refer to the existing baseline condition within the settlement and do not include consideration of additional infrastructure which is discussed in the proceeding section.
- 6.25 A similar approach has been adopted for the relationship of the various opportunities to existing 'fundamental' and 'essential' infrastructure as these are the infrastructure types that are most critical to bringing housing growth forward. These relationships are identified as there either being a 'current under-provision' (high risk), that provision is 'currently adequate' but will require provision with small levels of growth (medium risk) or that there is significant infrastructure 'capacity to accommodate growth' (low risk). These are identified on the basis used in the tipping points analysis contained in Appendix 5, but have been related to each individual Opportunity Area based on the catchment of the infrastructure type. Again these have been coloured green, orange and red to represent low, medium and high risk.

Forest Heath District Council

The summary of physical and infrastructure constraints for Forest Heath is set out in the table below: 6.26

Opportunity Area Constraint Tests – Forest Heath		Green Infrastructure Does the Opportunity Area threaten any area of national habitat or landscape
ч	Brandon	Σ
2	Lakenheath Central	_
m	Lakenheath North	_
4	lakenheath East	Σ
IJ	dtuo2 dteədnəyel	_
9	Newmarket Centre	
2	Newmärket North	
6	Kentford Land	_
10	wost teeW	_
둬	teeW llsdnebliM	-
9	Mildenhall Centre	_
1 3	tee3 llednebliM	т
14	tsəW əğbol bəA	Σ
15	Red Lodge North	Σ
.6 17	Βεςk βοw	

Dog Gree

Does the Opportunity Area threaten any area of local habitat or landscape protection (SSSI, SPA) protection

Topography

Is the Opportunity Area limited by any topographical features or forms (Slopes, ridges, views)

Built Form

Does the Opportunity Area lead to any settlement layout constraints (Coalescence, defensible boundary) Does the Opportunity Area threaten any historical built form designations

Water

Is the Opportunity Area affected by any flooding constraint Is the Opportunity Area affected by any water supply / treatment constraints (SPZ, Waste Water, Cordon Sanitaire)

Transport

Is the Opportunity Area limited by its access to or congestion within the existing transport network

Is the Opportunity Area limited by its access to walking or public transport catchments

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_		Σ
Σ		Σ
_		Σ
Σ		Σ
_		Σ
_		Σ
	Σ	Σ
_		Σ
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Opportunity Area Constraint Tests – Forest Heath	123	4	ы	s s	8	ດ	10	늰	12	13	14	15	16	17
Other Constraints	Z	Σ	Σ				Σ	Σ	Σ	Σ	E	F	-	
Airbase Safeguarding Zones											J	J	J	J
Opportunity Area Infrastructure Tests														
Utilities														
Is the Opportunity Area affected by any energy supply constraints	 		_	Σ		Σ			_		Σ	Σ	Σ	_
Is the Opportunity Area located for good access to mains water and waste water networks with existing capacity	M	Σ	Σ	_							Σ	Σ	Σ	
Health														
Is the Opportunity Area well served for GP provision					2	Σ	Σ			Σ	Σ	Σ	Σ	Ŧ
Is the Opportunity Area well served for dentists	H	Ŧ	E			Σ	Σ				Σ	Σ	Σ	F
Schools														
Are there current capacity issues at primary schools that will serve the Onnorthinity Area			_	_	L L	Σ		Σ	Ŀ		Σ	Σ	Σ	
Are there current capacity issues at middle schools that will serve the Onnorthnity Area											Ŀ			
Are there current capacity issues at upper schools that will serve the Opportunity Area														
Emergency Services														
Is the Opportunity Area within a 15 minute Fire Service response time isochrones		Σ	_	_	 	Σ			_	_	_	-	_	_
Is the Opportunity Area within an 8 minute Ambulance Service response time isochrones	H H Z	т	Ξ			Σ	Σ					-	Σ	т
Local Convenience Shop														
Is the Opportunity Area within an 800m walkable distance of an existing local convenience shop	M 		Σ					Σ		Σ				

Summary of physical and infrastructure constraints for Forest Heath Table 13

St Edmundsbury Borough Council

The Summary of infrastructure and physical constraints for Opportunity Areas within St Edmundsbury are set out in the table below. 6.27

35	Wickhambrook		_	ΣΣ	Σ		Σ
34	Clare South		Σ	Σ L			
33	Clare East		Σ	_ ≥	-		Σ
32	Clare North		т	_ ≥	-		_
31	tee3 notnet2	_ ≥			-		-
30	teaw dtuos notnets	≥ -		_ ≥			_
29	lxworth		Σ		-		_
58	Risby	ΣI		_ ≥			_
27	Barrow	- ≥	Σ	≥ ⊣	-		-
26	notgnibəX		_		Σ		_
25	Haverhill North		Σ	_ ≥			
24	Haverhill Centre			_ ≥			
23	Bury South East		Σ		Σ		Σ
52	Bury East		_		-		Σ
ᅜ	Bury North	_ ≥	Σ		-		Σ
20	Bury North West		Σ	≥ ⊣	-		Σ
19	Bury West	_ ≥	Σ	ΣΣ	Σ		_
18	Bury Centre			_ ≥	-		-
Opportunity Area Constraint Tests – St Edmundsbury		Green Infrastructure Does the Opportunity Area threaten any area of national habitat or landscape protection (SSSI, SPA) Does the Opportunity Area threaten any area of local habitat or landscape protection	Topography Is the Opportunity Area limited by any topographical features or forms (Slopes, ridges, views)	Built form Does the Opportunity Area lead to any settlement layout constraints (Coalescence, defensible boundary) Does the Opportunity Area threaten any historical built form designations	Water	is the Opportunity Area affected by any flooding constraint is the Opportunity Area affected by any water supply / treatment constraints (SPZ, Waste Water, Cordon Sanitaire)	Transport Is the Opportunity Area limited by its access to or congestion within the existing transport network

Opportunity Area Constraint Tests – St Edmundsbury	18 19	5	21	22	23	24	25	26	27	28	29	30	31	32	ŝ	4 35
Is the Opportunity Area limited by its access to walking or public transport catchments	 		Σ	Σ	Σ		-	Σ	Σ	_	Σ	_	_	_		Ŧ
Opportunity Area Infrastructure Tests																
Utilities Is the Opportunity Area affected by any energy supply constraints	N N N	2	Σ	Σ	Σ	Σ	Σ		_		Σ	Σ	Σ	_		
Is the Opportunity Area located for good access to mains water and waste water networks with existing capacity	Z			Σ	Σ	Σ	Σ		т			_	_	_		
Health Is the Opportunity Area well served for GP provision	<u>⊻</u> 	2	Σ	-		T				Σ			-	Σ		
Is the Opportunity Area well served for dentists	 							Σ			Σ	x	Ŧ	Σ	Σ	
Schools Are there current capacity issues at primary schools that will serve the Opportunity Area Are there current capacity issues at middle schools that will serve the Opportunity Area Are there current capacity issues at upper schools that will serve the Opportunity Area Emergency Services Is the Opportunity Area within a 15 minute Fire Service response time isochrone Is the Opportunity Area within an 8 minute Ambulance Service response time isochrone Is the Opportunity Area within an 8 minute Ambulance Service response time isochrone Is the Opportunity Area within an 8 minute Ambulance Service response time isochrone Is the Opportunity Area within an 800m walkable distance of an existing local convenience shop										I - I I I	∑ → → <mark>⊥</mark> →	- -				

Table 14 Summary of infrastructure and physical constraints for Opportunity Areas within St Edmundsbury

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Identification of Potential Future Development Patterns by Settlement

6.28

The following section draws together the evaluation of the settlements and identification of opportunity areas and identifies the locations where specific constraints will affect future potential housing yield. This summary includes:

- Conclusions on the Opportunity Areas identified and emerging preference if more than one has been identified;
- Timing or phasing issues;
- Issues of environmental capacity which need to be considered as cumulative impacts across the various Opportunity Areas;
- Comments on local facilities provision where relevant; and
- A theoretical capacity yield is shown for the settlement.
- 6.29 This section is a summary of more detailed analysis of the individual opportunity areas included in Appendix 3, and is illustrated with reference to mapping the more complete versions of which (including full Keys) are included in the Strategic Plans Document in Appendix 2.
- 6.30 The housing yields for settlements (summarised in Table 15 and Table 16) have been identified as a method of allowing further consideration of the implications of growth. They are at a broad level, maximum values from the physical capacity of land available. The current position for infrastructure provision is identified in the settlement summaries, but at this stage does not have a direct influence on the capacities shown as infrastructure provision will be provided commensurate with the additional need generated. These numbers are provided for further investigation purposes only.
- 6.31 An approximate density range of 20-35 dwellings per hectare gross has been applied to calculate potential residential output from the Opportunity Areas identified, to reflect the fact that more detailed or specific dwelling yields would be a function of site identification (and estimate of net developable area) and the application of densities based on more detailed analysis (including drawing on the outputs of viability and market considerations that are considered through the SHLAA process). Therefore, for the urban extension typology the Opportunity Areas have been multiplied by the broad density range to provide a test capacity for each location.
- 6.32 The density range also takes account of the requirement of land for access and services, other types of uses such as schools, shops, as well as green spaces, all of which will reduce the overall density of development in the Opportunity Areas. In line with PPS3 a minimum net density of 30 dwellings per hectare will be maintained on individual sites for housing.
- 6.33 In relation to the settlement optimising typology, the yields generated relate to the walking catchments shown on the opportunity plans and the potential of small settlement fringe sites to be available and are therefore grounded in the

position of local centres. The identified test capacity yields are then calculated using SHLAA sites (Stage 7 – 16.01.09) and the UCS, together with a consideration of historical growth patterns. It is recognised that through the SHLAA process not all of the currently identified sites will come forward, However, as this Study is looking to 2021 initially (and 2031 in the long term) the figures identified for the purposes of testing infrastructure delivery give a reasonable basis for consideration of potential urban development.

- 6.34 The tables in Section 7 (Table 17, Table 21 and Table 22) demonstrate how, within the range of development yields identified, infrastructure costs are incurred. This allows the LPA to test a range of development options against this analysis rather than providing a single development option and cost which would not provide any flexibility. However, in the concluding section to this report, a summary table (Table 29) is provided which synthesises the infrastructure costs and mechanisms for delivery. This table provides a recommendation for the most cost effective method of securing growth whilst meeting the key targets of keeping to a minimum impact on environmental designations, supporting local facilities in smaller settlements, providing sustainable development patterns and keeping infrastructure costs to a minimum.
- 6.35 The following section provides a summary of each settlement and its respective Opportunity Areas derived from the information in Appendix 3 (The Settlement Proformas). A snapshot of the Constraints and Opportunities Plans are shown for each settlement with the full set of plans in the Strategic Plan Document (Appendix 2). The following key is used for all of the Plans.

KEY



Need for new boundary to settlement

Existing defensible boundary to settlement





investigation Ridge Conservation Area (approx) Key/protected view View out/into conservation area Bypass option Key infrastructure relevant to growth (see inset map) Open Access Land Walking catchments

Junction in need of further



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6.36 The icons used in the above key and shown on the Opportunities and Constraint Plans align with the constraints identified in Table 6 and is summarised as:

- 1 Identified opportunity for potential growth and settlement optimising opportunity as defined in paragraph 6.17
- 2 Protected Flood Corridor areas at risk of flooding have been identified through information provided by the Environment Agency as either Flood Zone 2 or 3.
- 3 Settlement buffer protection from coalescence between existing urban areas and protection of heritage assets such as Scheduled Ancient Monuments
- 4 Landscape buffers including green infrastructure identified on the Opportunity Mapping, the strategic agricultural grade map, the strategic green infrastructure plan, SPZ buffer zones,
- 5 Slopes, ridges and key views topography and landform information based on contour plans, aerial photography and Ordinance Survey mapping
- 6 Need for new boundary to settlement potential threat where new development would require a robust boundary to further expansion to be formed to protect designations identified elsewhere or to prevent a sustainable pattern of development
- 7 Existing defensible boundary to settlement an existing feature defines the perimeter of a settlement
- 8 Junction in need of further investigation Junctions which may have particular requirement for upgrades or which form part of on-going study into their capacity
- 9 Conservation areas protection of built form heritage assets and their wider setting
- 10 View out/into conservation area location sensitive to impact on setting of conservation area due to existing relationship between countryside and urban area
- 11 Bypass option indicative location of potential vehicle bypass route
- 12 Key infrastructure relevant to growth large scale infrastructures whose operation and location have significant bearing on distribution of future growth
- 13 Open Access Land open land with public rights of access
- 14 Walking Catchments identified at 500m, 800m and 1000m from local centres to provide an indication of walking and sustainable travel distances, 800m being a 10 minute walking distance and the basis for the Walkable Neighbourhood as set out in the Urban Design Compendium.
- 6.37 The Opportunity and Constraints Plans and the supporting GIS information used to create them are included as extracts in Appendix 3 and provided in full in the Strategic Plans Document: Appendix 2.

Forest Heath

Brandon

- 6.38 Significant environmental constraints limit potential for expansion of the existing town beyond its current boundaries. The least sensitive boundary is to the south west however this location is well removed from the existing town centre. Settlement optimising development is therefore considered the most appropriate form of growth for Brandon providing adequate sites can be found through the SHLAA process in the existing settlement or immediate edge.
- 6.39 Possible development on the south eastern fringe of Brandon has been identified by the Council for inclusion within the growth opportunity of Brandon due to a lack of available Brownfield land in the existing settlement. However as this location, even for small scale growth, as part of the Settlement Optimising will need to first establish the principle of release of SPA designated forest and mitigation through creation of replacement habitats away from the urban fringe it is considered to be a very long term potential, if pursued at all. A site specific HRA has been produced (March 2009) which provides more detail on the potential environmental impact of development on the SPA buffers surrounding Brandon. Detailed work in the HRA provides sufficient justification to allow some flexibility in the interpretation of the SPA buffers in this location.
- 6.40 Existing key infrastructure provision is good, however, health services are currently under-represented, although a Healthy Living Centre has recently been approved. Small scale high quality infill development would take advantage of these existing local services. Site selection should show preference to locations within close proximity to the town centre.
- 6.41 It is considered that the level of growth identified as settlement optimising opportunity within Brandon will not impact the environmental capacity of the town or surrounding sensitive landscapes although there is likely to be an increase in recreational use of the Open Access Land to the south. Sensitive built form constraints including the conservation areas and listed buildings would need to be taken in to consideration although these do not present a fundamental constraint to potential settlement optimising development.



Fig 6 Opportunities and Constraints around Brandon

6.42 Whilst Brandon currently has adequate infrastructure provision, the environmental constraints of the settlement will limit opportunity to infill development and small scale fringe development, i.e. on strategic and brownfield land. Based on this analysis, a theoretical capacity for development in Brandon of 630 to 1,000 units is identified as a baseline figure against which to test the capacity and cost of infrastructure in the following section.

Lakenheath

- 6.43 Development within Lakenheath is constrained by the MOD safeguard zone around Lakenheath airbase. Opportunity areas to the north and small scale settlement optimising development within the centre are least restricted by this constraint.
- 6.44 Sensitive built form constraints including a conservation area and listed buildings would need to be taken in to consideration although this does not present a fundamental constraint to potential infill development and therefore the Lakenheath Centre Opportunity Area is identified as the preference for future growth.
- 6.45 The Opportunity Area to the north (3) also has good potential for contained expansion. Any development within this location will be required to be self contained providing sustainable urban drainage for all of surface run off in order to protect the Ely District Water board land and to the west and the cordon sanitaire to the waste water works.
- 6.46 Key infrastructure capacity in Lakenheath is reasonable although regard must be had to capacity issues at Lakenheath Wastewater Treatment Works. In addition the linear form of the settlement means the central area of the

settlement where many of the key services, such as the Co-op convenience store, are located is beyond walking catchment of peripheral areas of Lakenheath to the north and south.



Fig 7 Opportunities and Constraints around Lakenheath

6.47 Lakenheath has potential to accommodate growth primarily to the north and within the centre based on a combination of strategic sites, and brownfield sites. Based on this analysis, a theoretical capacity for total development in Lakenheath of 2,660 to 4,660 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Newmarket

- 6.48 The highly sensitive landscape character of Newmarket creates a fundamental constrain to the majority of locations where potential growth, not bounded by other constraints, could occur. Settlement optimising development within the existing settlement should be investigated as a preference. However, settlement optimising development will also need to respect the requirements of the horse racing industry as a major economic driver for the town.
- 6.49 Newmarket is considered to be unique in that it has to cope with extreme peaks of activity on race days and relative low levels of activity for the rest of the time. Safeguarding its existing character based on the horse racing industry is already well established in the Local Plan and further development within the town should seek to enhance or protect the existing character, particularly

ensuring that cumulative impacts of growth do not impact on the Horse Racing industry. Whilst the protection of studland will minimise the direct impacts of development on the horse racing industry, cumulative development may have indirect impacts such as increasing traffic causing more road user conflict between horses and vehicles (e.g. where horses are required to cross roads), and this may need to be managed at a local level.

- 6.50 In addition a potential growth to the north of Newmarket has been identified as this location, Hatchfield Farm, is separated from the wider character of the studlands. Consideration however, should be given to retaining the buffer between Newmarket and Exning to the north and protection of the character of the Newmarket Conservation Area to the south of the farm.
- 6.51 Newmarket is very well served for key infrastructure, with a well developed education provision, with existing pupil capacity, and a good range of key services.





- 6.52 Newmarket has two identified Opportunity Areas for growth. Settlement optimising development based primarily on brownfield development and limited green infill. Strategic sites at Hatchfield Farm are also identified.
- 6.53 Based on this analysis, a theoretical capacity for development in Newmarket of 1,740 to approximately 3,000 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Exning

- 6.54 Similar to Newmarket potential growth within Exning is fundamentally constrained by the sensitivity of the landscape character of the stud lands. Development is also limited to the north by the conservation area and its relationship with the wider landscape. Development potential exists to the east of the settlement albeit fundamentally limited in extent by potential impact on the landscape setting of the Devil's Dike.
- 6.55 Exning has a good provision of key local services, although consideration of improvement of provision of GPs will reduce any reliance on Newmarket for this service. Development in Exning will support local facilities within walking distance of the Opportunity Area but it is important that any development in this location seeks to achieve improvements to sustainable links to Newmarket itself to reduce as far as possible the use of private cars. In terms of the overall capacity in Newmarket development in Exning has potential to add greater strain to the sensitive historic centre of the town if adequate cycle and bus networks are not in place.



Fig 9 Opportunities and Constraints around Exning (map ref 8)

- 6.56 Growth around Exning is identified primarily on strategic sites to the west of the settlement.
- 6.57 Based on this analysis, a theoretical capacity for development in Exning of 1,240 to 2,170 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Kentford

6.58 Fundamental constraints surrounding the existing settlement of Kentford limit extent of the potential growth to both north and west. However, potential for small scale infill or minor extension exists to the south, and between the existing settlement and the A14, providing impact on landscape character can be mitigated.

There are limited facilities in Kentford indicating that it is currently not a sustainable settlement and as such not a preferred location for growth from a highways perspective. Development around the existing cross roads in the centre of Kentford may also result in highways safety issues due to potential additional traffic generated from development around Red Lodge using Kentford to cut through to Bury. Despite the proximity of Kennet rail station significant development in Kentford is likely to put pressure on the rural road network and approach roads to Newmarket due to a lack of existing facilities in Kentford itself.



Fig 10 Opportunities and Constraints around Kentford

6.60 Opportunities in Kentford are primarily on strategic sites which form small scale fringe development on the periphery of the existing village. Based on this analysis, a theoretical capacity for development in Kentford of 480 to 840 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

West Row

- 6.61 Potential growth at West Row is fundamentally constrained by buffer zones to coalescence with Mildenhall and Thistley Green. The relatively remote nature of the settlement and potential knock on effect on infrastructure within Mildenhall means that only small scale settlement optimising development is likely to be appropriate in this location.
- 6.62 West Row has a reasonable network of existing infrastructure for a Primary Village of its size. The primary school has a reasonable level of capacity for new pupils and it has retained services such as a local convenience store, a post office and a café.
- 6.63 Development within West Row should be considered in combination with proposals for Mildenhall. Although the scale of development proposed is relatively small the cumulative impacts of development on the congestion within Mildenhall means that adequate sustainable travel options need to be in place prior to significant new development proposals coming forward.



Fig 11 Opportunities and Constraints around West Row and Mildenhall

6.64 Within West Row primarily strategic sites on the periphery of the settlement have been identified for small scale development. Based on this analysis, a theoretical capacity for development in West Row of 140 to 250 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Mildenhall

6.65 Fundamental landscape constraints to the east and south of the existing settlement of Mildenhall limit potential growth. There are few fundamental constraints to development to the west of Mildenhall, however, it has been noted that limitations of infrastructure capacity may reduce this potential, particularly with regard to the road network. In general social infrastructure provision is very good, with a good local school network, good health facilities and a range of local services.

6.66 Very small scale extension to the east of the existing settlement has been identified as an opportunity due to a lack of available Brownfield land in the existing settlement. However as this Opportunity Area will need to first establish the principle of release of SPA designated forest and mitigation through creation of replacement habitats away from the urban fringe it is considered to be a very long term potential, if pursued at all.



Fig 12 Opportunities and Constraints around Mildenhall showing SPA to east of the settlement

6.67 Mildenhall's potential growth is based on a number of Opportunity Areas. Most notably to the west. In the existing settlement the infill sites identified are all likely to be brownfield development. In the east, strategic Greenfield land would be required for development. Based on this analysis, a theoretical combined capacity for development in Mildenhall of 3,340 to 5,860 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Red Lodge

6.68 Fundamental constraints limit potential development of Red Lodge but do not prohibit all available land surrounding the settlement. Small scale development
potential may exist particularly to the north and south and to the west where development proposals have not already been put in place.

- 6.69 There are also key infrastructure constraints to be overcome with Kennet Substation currently nearing capacity and Tuddenham Wastewater Treatment Works also identified as having limited headroom capacity to accommodate much future growth, with further constraints on upgrading the treatment works.
- 6.70 Land is available within Red Lodge, however, the settlement's current low level of facilities and the slow uptake of employment generating development would result in more residential growth creating a very unsustainable pattern of development. It is considered that development around Red Lodge should only be considered once the existing masterplan has been fully completed and supporting facilities and employment uses are given opportunity to establish in order for the wider cumulative impacts on further growth in this location to be properly evaluated.



Fig 13 Opportunities and Constraints around Red Lodge

- 6.71 Notwithstanding the above, development opportunities at Red Lodge identify strategic sites beyond the extent of the existing masterplan. A current under provision of employment would need to be addressed alongside potential future development, with the need to ensure that land allocated for employment purposes in Red Lodge comes forward, with the balanced growth of housing and employment to reduce commuting.
- 6.72 Based on this analysis, a theoretical capacity for development in Red Lodge of 1,140 to 2,000 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Beck Row

- 6.73 Beck Row forms an unusual development pattern elongated over the perimeter of the Airbase. Development within the settlement requires consultation with the MOD and faces potential restrictions on development within the white consultation zone. Flooding constraints and coalescence issues existing to the north however potential exists for small scale strategic infill in this direction providing a defensible settlement boundary can be established. Development to the east is limited by potential coalescence with Holywell Row and to the west through unsustainable separation from the existing services within the settlement.
- 6.74 Small scale settlement optimising development identified for Beck Row should be considered in relation to cumulative impacts on the infrastructure around Mildenhall. Any transport mitigation, including potential highway works or a new relief road, at Mildenhall would significantly reduce the impacts of additional growth within Beck Row and therefore consideration should be given to phasing any proposed development in this location in conjunction with growth in Mildenhall.
- 6.75 Beck Row has poor provision of health infrastructure although the primary school helps to minimise the need to travel to Mildenhall for school functions. There is only a small amount of capacity off of Mildenhall substation, which cumulative development around the Airbase is likely to take, although the Wastewater Treatment Works has significant headroom.



Fig 14 Opportunities and Constraints around Beck Row

- 6.76 Opportunities within Beck Row include small infill on brownfield and strategic sites around the settlement.
- 6.77 Based on this analysis, a theoretical capacity for development in Beck Row of 240 to 420 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

St Edmundsbury

Bury St Edmunds

- 6.78 Several areas of potential growth without any fundamental constraints exist around Bury St Edmunds. Development potential of these locations is limited to a greater and lesser extent by buffer zones to surrounding sensitive landscape and historical features as well as neighbouring settlements. Conversely, Opportunity Areas for growth will be sensitive to existing industrial uses such as the Sugar Beet factory to the north of the settlement or proposed large industrial estate to the east.
- 6.79 The railway and A14 are major accessibility barriers in Bury St Edmunds with few crossing points, especially for pedestrians and cyclists. This creates a physical barrier, detaching the north areas of Bury St Edmunds from the town centre. This is an important consideration and an issue that will need to be addressed if development takes place in the north of the town.
- 6.80 Opportunity Areas to the north and east of the settlement provide clear opportunities to minimise any potential impact on sensitive landscapes, however, development to the south east and the west have benefits of better opportunities for creating sustainable links into the facilities of the town centre. The town centre has a distinctive character and there is a need to maintain the quality of the historic environment. There is limited capacity within the town centre for additional car parking and an important part of growth in Bury St Edmunds will be providing suitable access options from surrounding urban areas and other settlements. This could include walking and cycling routes, bus services and other traffic management systems, such as park-and-ride, which would minimise the risk of additional impacts to the town centre from congestion. There is also the opportunity to improve the public realm in the future to increase pedestrian capacity in the town centre.
- 6.81 The sensitivity of Bury St Edmunds town centre to accommodate additional activity should be considered in selecting preferred Opportunity Areas for development. Sustainable links to the town centre, possibly through increased bus services, cycle and walking routes, are a significant tool in reducing the impact of growth and the impacts this can have on historic centres. Opportunity Areas which facilitate new robust sustainable transport links should be brought forward as a priority.

6.82 Bury St Edmunds has a comprehensive network of existing infrastructure. There are reasonable levels of existing capacity in both energy and wastewater networks. Generally levels of social infrastructure provision is very good, although regard must be had to spatial coverage within Bury St Edmunds, ensuring it provides services at a neighbourhood level to allow for access by foot. The Opportunity Areas on the edge of Bury St Edmunds will need to have regard to this with a potential requirement for new local centres to accommodate key services. However, a key constraint identified in the current infrastructure network is the ability of the A14 junctions to accommodate increased traffic.

Potential Hospital Relocation

6.83

In addition to the Opportunity Areas identified for Bury St Edmunds, consideration needs to be given to the potential relocation of the West Suffolk Hospital. Should the Hospital relocate within the timespan of this Study, then there will be implications for the distribution of residential growth within Bury St Edmunds, dependent on the location of the site used for any relocation. This may reduce capacity for growth on an identified Opportunity Area. The current hospital site may provide an opportunity for redevelopment, being brownfield land, although there are significant environmental constraints on the site including TPO's and the adjoining Special Landscape Area, as well as any elements of the site which remain in use, which will need to be considered.



Fig 15 Opportunities and Constraints around Bury St Edmunds.

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6.84 Potential growth opportunities for Bury St Edmunds include both strategic and brownfield infill and urban extensions on strategic sites. Based on this analysis, a theoretical capacity for development in Bury St Edmunds of 11,800 to 20,670 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Haverhill

- 6.85 There are fundamental constraints to development along the entire southern boundary of this settlement and the majority of the area to the west and north west. Small scale extension to the north east and east could be considered providing appropriate buffers or suitable mitigation in development can be provided to the Scheduled Ancient Monument and that development doesn't breach the visual boundary of the ridge between Kedington and Haverhill.
- 6.86 Haverhill is not constrained in terms of its built heritage to the extent of Newmarket and Bury St Edmunds. It is considered that medium to high levels of growth can be supported within the town without significant impact to either historical or natural features. Any development, however, should be closely linked with the employment development to the south and east of the settlement encouraging sustainable links between new residential development and employment uses.
- 6.87 Haverhill has a good provision of infrastructure. There appears to be emerging capacity in the energy infrastructure and wastewater treatment has some existing headroom. One key issue in Haverhill is the current under provision of GPs. Although temporary provision is being made, further scoping work to assess current GP lists and how current GP services are coping should be considered to secure a long term option. The A1307 is also a key constraint with high levels of congestion, which will need addressing in line with growth at Haverhill.



Fig 16

- Growth opportunities for Haverhill have been identified in two locations, fringe 6.88 sites and brownfield land within/on the peripheral of the settlement and on urban expansion on strategic sites to the north east. Reflecting the strategic perspective of this Study, this has been identified on a pre-cautionary basis with a buffer around Great Wilsey Farm and the Scheduled Ancient Monument (SAM) designation. However, if the buildings at Great Wilsey, including the SAM designation, are integrated (protecting the SAM as appropriate) as part of the development through appropriate site-specific master planning, this Opportunity Area could theoretically be expanded, potentially for a further circa 1,500-2,000 units although this has not been tested as part of this Study and would need to be considered on a site specific basis.
- Based on this analysis, a theoretical composite capacity for development in 6.89 Haverhill of 1,480 to 2,600 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section. However, depending on the site specific design and masterplanning of any north east urban expansion area, this capacity could be increased, subject to mitigation or avoidance of any issues arising.

Kedington

Topographical features combined with flooding are fundamental constraints to 6.90 extensive development around the majority of this settlement. Small scale settlement optimising development should be investigated to support the existing services, such as the GP surgery and the primary school, in the settlement. This Opportunity Area should be encouraged to develop as part of a strategy for strengthening local employment opportunities within Kedington and

the adjacent settlement of Haverhill and enhancing sustainable travel links between the two.



Fig 17 Opportunities and Constraints around Kedington, including flood zone and changes in level to the north east and south west

Kedington has potential growth identified as settlement optimising development on available infill, fringe and brownfield sites. Based on this analysis, a theoretical capacity for development in Kedington of 130 to 220 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Barrow

- 6.92 Growth in this settlement is fundamentally constrained to the north by the need to protect the setting of the adjacent Scheduled Ancient Monument. Buffers between Barrow and Burthorpe to the east and Denham End to the south west create fundamental constraint to growth of the settlement. With additional consideration being given to the impact on views from the west of the settlement around Denham Castle. Although a buffer is required to the County Wildlife Site to the south there may be potential to extend the settlement in this direction providing suitable mitigation can be achieved and a defensible boundary to further development formed.
- 6.93 The key infrastructure constraints for Barrow are the provision of GPs which is nearing a tipping point and the consideration of improving public transport accessibility to ensure sustainable travel patterns where possible. Development of the Opportunity Area would support existing facilities and

6.91

support continuation of a bus service reducing the impact of the growth. In addition Barrow wastewater treatment works has very little headroom to accommodate growth, which is a critical infrastructure constraint that will need to be overcome.



Fig 18 Opportunities and Constraints around Barrow

- 6.94 The compact nature of Barrow, identified little potential for edge of settlement and brownfield sites. All potential growth has therefore been identified to the south east and south west of the settlement and constitutes an urban expansion albeit of limited size.
- 6.95 Based on this analysis, a theoretical capacity for development in Barrow of 420 to 740 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Risby

- 6.96 Development to the west, north and east of the settlement would impact on designated areas of wildlife protection. There would also be an additional impact on the setting of the conservation area from development to the north east of the settlement. Development of a small scale to the south of the village would have least impact on the landscape character surrounding the settlement due to the existing relationship to the A14 and railway.
- 6.97 The Opportunity Area's proximity to existing employment opportunities and bus links into Bury offer the potential to increase sustainable links from the Opportunity Area. However, detailed investigation would be necessary of the

limits to growth from the settlement's close proximity to a protected Stone Curlew habitat.

6.98 Risby has a number of social infrastructure pressures. Risby Primary School is currently over-subscribed and this will mean that there may be significant up front infrastructure required to support development. It also lacks provision of health facilities and has a poor selection of key local services, particularly lacking a local convenience shop.



Fig 19 Opportunities and Constraints around Risby highlighting buffer to SPA and Calor Gas storage works HSE consultation zone.

6.99 Opportunity for growth within Risby, similar to Barrow, is focused in one location and is in the form of a small urban extension. Constraints to the north, east and west limit locations for potential growth and the lack of existing facilities needs to be considered alongside implications for sustainable travel. Based on this analysis, a theoretical capacity for development in Risby of 440 to 770 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Ixworth

6.100 Ixworth is severely constrained by existing defensible boundaries and flood risk to the south and west. Extension to the existing settlement is likely to be feasible to the north and east up to the defensible barriers created by the A143 and A1088. The identified Opportunity Area in Ixworth is considered appropriate for additional growth subject to detailed site investigation. Land at the southern end of the Opportunity Area is already allocated in the Local Plan for housing. 6.101 Ixworth has a good provision of infrastructure with several GPs and a significant capacity within the middle school. Currently the primary school is nearing capacity, although the School Reorganisation may alter capacity.



Fig 20 Opportunities and Constraints around Ixworth including Conservation Area and Listed Buildings and flood zone to the south

6.102

Potential growth in Ixworth is in the form of small urban extensions, not classified as infill due to their size. However, characteristically the sites infill to the existing defensible boundary of the settlement formed by the A143 and A1088. Based on this analysis, a theoretical capacity for development in Ixworth of between 600 to 1,000 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Stanton

- 6.103 Development potential around Stanton is limited by landscape designations to the east, south and south west. However, to the east and south west there is potential for small scale extension without impacting on a protective buffer around the landscape designations. Development potential to the north is fundamentally constrained by the A143.
- 6.104 The identified Opportunity Areas in Stanton are considered appropriate for additional growth as a preferred location on an existing bus corridor along the A143. Development in both Opportunity Areas will however be subject to detailed design mitigating any potential impacts on adjacent landscape and heritage designations. The Opportunity Area to the east of the settlement, although small, is likely to have the least significant impact and should be

investigated as a preferred location. Land is already allocated for housing in the Local Plan in this location.

6.105 Stanton has a very good network of existing infrastructure for a Key Service Centre of its size. Particularly it is well served currently by its local services, with existing capacity in its primary school and middle school to support a reasonable level of development. There is an excellent provision of GPs in Stanton, although there are currently no dentists.



Fig 21 Opportunities and Constraints around Stanton identifying protected green corridor and buffers to SSSI designations

6.106 Potential growth opportunities for Stanton are based on two urban extensions on strategic sites to the east and south west. Based on this analysis, a theoretical capacity for development in Stanton of approximately 1,000 to 1,700 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Clare

- 6.107 Significant flooding constraint limits potential development to the northeast and southern boundaries of the settlement. Development is further limited to the east through a rise in the land and to the west from the requirement to protect the character of the conservation area and landscape setting of the settlement. Any large scale development is likely to negatively impact on the character of the settlement, however small scale peripheral extensions may be possible.
- 6.108 All three Opportunity Areas identified will require a sensitive design approach to ensure the character of the Clare Conservation Area is not affected.
- 6.109 Overall infrastructure provision is good. The Key Infrastructure constraints for Clare are the provision of dentists which is nearing a tipping point and the

consideration of transport issues if high levels of growth are to be accommodated. There is also only a small level of pupil capacity in the settlements existing schools, but capacity may change as a consequence of the School Organisation Review.



Fig 22 Opportunities and Constraints around Clare including inclusion of common land within the conservation area, green corridor along the disused railway and flood zone

6.110 Potential opportunities for growth at Clare comprise three small extensions on primarily strategic sites. Based on this analysis, a theoretical capacity for development in Clare of approximately 500 to 900 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Wickhambrook

6.111 The settlement pattern, including the close proximity to the outlying hamlets which form part of Wickhambrook, mean that new residential development and the growth of the village will require a sensitive design approach to ensure the character of the village is respected and coalescence with nearby hamlets is avoided. The fundamental constraint of the flood zone to the east of the existing settlement means that any small scale fringe development should be located towards the western edge of the settlement near the B1063. Development should be considered as a means of supporting local facilities. However, due to the settlement's lack of sustainable links to significant employment opportunities, development within Wickhambrook should be limited to infill and small scale fringe development only, unless provision of such links can be secured.

6.112 Wickhambrook has a three GP surgery providing an important service and the primary school has a reasonable level of capacity for new pupils. Further investigation into the capacity of water and wastewater networks to support growth should be undertaken to underpin future development as this information has not been identified in the Water Cycle Study.



Fig 23 Opportunities and Constraints around Wickhambrook highlighting relationship of the settlement to surrounding villages

- 6.113 Growth opportunities for Wickhambrook are based on infill development on brownfield and fringe sites resulting in very limited change to the existing extent of built form of the settlement. The areas most suitable for this will be within and on the fringe of the main centre of Wickhambrook, to minimise impacts growth could have on the character of the outlying hamlets.
- 6.114 Based on this analysis, a theoretical capacity for development in Wickhambrook of 240-420 units is identified as a baseline figure against which the cost and capacity of infrastructure can be tested in the following section.

Summary of Capacity Ranges

6.115 The outputs in the mapping and schedule below are a baseline of fundamental constraints and opportunities used in stakeholder discussion and intended for further analysis through the planning process, including in terms of infrastructure thresholds and requirements outlined in this Study.

- 6.116 These test capacity figures are used in the following section (Section 7) as a guide for identifying the infrastructure costs through a range of development potential for each settlement. The figures do not represent the probable actual level of growth in each settlement or overall in the Study Area. Instead they identify maximum capacity figures of the Opportunity Areas based on physical constraints, consideration of the settlement structure and relationships with existing infrastructure. They have been identified through an analysis of strategic opportunities for growth, applying a dwelling yield range to the potential areas for growth identified through this Study, to provide a low and high dwelling capacity.
- 6.117

The following schedule summarises the outputs in terms of dwelling yield to present a settlement by settlement picture.

Settlement	Growth Opportunity ID: Name	Approximate Dwe	Iling Yield Range
		Low	High
FHDC: 2008-2021 Overa The strategic split acros	all growth figure 4770 to 2021 based as the districts is currently unknown	on RSS	
Town: Brandon	1: Brandon Central	630	1,000
Town: Newmarket	6: Newmarket Central	540	950
	7 Newmarket East	1,200	2,100
	Total:	1,740	3,050
Town: Mildenhall	11 Mildenhall West	3,000	5,260
	12 Mildenhall Central	240	420
	13 Mildenhall East	100	180
	Total:	3,340	5,860
Key Service Centre:	2: Lakenheath Central	600	1,050
Lakenheath	3: Lakenheath North	1,220	2,140
	4: Lakenheath East	640	1,120
	5: Lakenheath South	200	350
	Total:	2,660	4,660
Key Service Centre:	14: Red Lodge West	600	1,050
Red Lodge	15 Red Lodge North	200	350
	16 Red Lodge South	340	600
	Total:	1,140	2,000
Primary Villages:	8: Exning	1,240	2,170
	9: Kentford	250	440
	10: West Row	140	250
	17: Beck Row	240	420
	Total:	1,870	3,280
Forest Heath:	Overall Total:	11,380	19,850

 Table 15
 Summary of Preliminary Dwelling Yield for Forest Heath

Settlement	Growth Opportunity ID: Name	Approximate Dwe	elling Yield Range
		Low	High
SEBC: 2008-2021 Overa identified within the Cor Circa 20% in the remain	all residual growth figure to 2021 base e Strategy Issues and Options Docum ing area	ed on RSS - 6,960 wher ent is Circa 40% Bury C	e the strategic split irca 40% Haverhill
Town: Bury St	18: Bury St Edmunds Central	360	630
Edmunds	19: Bury St Edmunds West	3,440	6,020
	20: Bury St Edmunds North West	980	1,720
	21: Bury St Edmunds North	4,340	7,600
	22: Bury St Edmunds East	980	1,720
	23: Bury St Edmunds South East	1,900	3,330
	Total:	12,000	21,020
Town: Haverhill	24: Haverhill Central	60	110
	25: Haverhill North	1,420	2,490
	Total:	1,480	2,600
Key Service Centre:	26 Kedington	130	220
	27 Barrow	420	740
	28 Risby	440	770
	29 Ixworth	560	980
	30 Stanton South West	640	1,120
	31 Stanton East	380	670
	32 Clare North	80	140
	33 Clare East	240	420
	34 Clare South	200	350
	35 Wickhambrook	150	250
	Total:	3,240	5,660
St Edmundsbury:	Overall Total:	16,720	28,280

 Table 16
 Summary of Preliminary Dwelling Yield for St Edmundsbury

6.118 The above summary analysis identifies is a total initial capacity, after the application of the fundamental constraints identified in this section, with benchmark density assumptions, but before the application of infrastructure thresholds, or policy judgements on housing allocations of around 11,000 – 20,000 dwellings in the FHDC area and 16,500 – 29,000 for the SEBC area. These figures take no account of market or delivery capacity or viability in either area and, quite clearly, would not be capable of being brought forward in totality. To be clear, it is not the conclusion of this Study that this is the total amount of development that should be planned for in the Local Development Frameworks. Nevertheless, this initial capacity is clearly in excess of the total identified housing requirement between 2008-2021 to meet RSS minimum requirements in each location of 4,770 and 6,960 respectively, indicating that there is scope to:

- a ensure that infrastructure thresholds and identified requirements are focused on achieving, as far as possible, the optimum outcomes and, where appropriate, value for money in utilising existing infrastructure;
- apply greater weight and priority to further environmental and infrastructure considerations in defining the most appropriate locations for development; and
- c if appropriate, test, in the case of St Edmundsbury, the indicative strategic split of housing allocations (of c. 40:40:20 between Bury St Edmunds, Haverhill and remaining rural area identified in the Core Strategy Preferred Options) and consider, in the case of Forest Heath, how capacity might shape the strategic focus of growth.

Appraisal of Indicative Development Patterns

- As discussed above, many of the constraints identified are based on clear 6 1 1 9 identified barriers to development. Many are formal designations. Others are an attempt to capture clear policy objectives (e.g. around focusing growth in locations with services; avoiding development in visually prominent locations, preventing coalescence of settlements, maintaining 'buffers' around sensitive locations) where there is always a matter of judgement being applied, drawing on both policy and accepted practice. A significant degree of confidence can be attached to the robustness of this analysis and any proposal for development outside these areas would need to present compelling evidence to justify it. Ultimately, there is always the possibility that there may be scheme-specific reasons that justify development in what has been identified as a strategically inappropriate location. In the majority of cases the fundamental environmental and policy designation constraints identified by the Study will rule out any additional sites except in exceptional circumstances. However, it is not for this Study to pre-empt such possibilities.
- 6.120 The Opportunity Areas have been identified carefully to avoid locations with potential significant impact on fundamental constraints to development. However, there is also a need to recognise that whilst individual development may avoid impact on sensitive features, the cumulative impact of development within the various Opportunity Areas will also need to be considered. The potential for cumulative impacts to arise has been factored into the identification of Opportunity Areas where appropriate, (referenced in Appendix 3) but there is still a need to recognise that in totality, certain combined levels of growth over a sustained period of time (even in locations that in themselves are appropriate) may present significant issues around the way in which settlements function, and in the demands placed on the built and natural environment.
- 6.121 The analysis has therefore essentially identified the key environmental constraints on the settlements within the two districts. These identified capacities are considered to be broad environmental tipping points beyond which there would be significant environmental impacts (commonly referred to

as Environmental Capacity). These test capacities are identified in order to examine the infrastructure issues in more detail which will necessarily provide ranges of development scales within each settlement. It should however be recognised that all development has the potential to damage the environment if not carried out to a high quality and if consideration of site specific issues are not included in the detail design process (for example the Sustainability Appraisal process).

- 6.122 Given this context, NLP have identified two key areas where there is a greater risk of 'Environmental Capacity' impacts that should be subject to more detailed appraisal at a site and scheme specific level as a strategy for development emerges and is tested:
 - landscape and natural features; and,
 - conservation and heritage features.
- 6.123 This will ensure that the impact of individual development schemes does not adversely affect these features and also that the cumulative impact of particular developments does not adversely affect the environment they will sit within.

Landscape and Natural Features

- 6.124 Increased development near open access land (particularly likely in Forest Heath) will have a general landscape value impact from increased leisure activity, for example cycling and walking, which will require in the short term greater expenditure on localised management and facilities such as upkeep to paths and cycle ways. In the long term, significant increase in leisure use of natural areas may affect wildlife habitats of value and therefore wider scale management practices such as restricting access to certain areas may need to be undertaken.
- 6.125 Whilst the Opportunity Areas have been carefully identified to ensure that there are no direct impacts on natural features, the wider indirect impacts of additional growth may have to be assessed through the use of a Habitat Regulations Assessment (HRA).

Conservation and Heritage Capacity

6.126 In terms of the capacity of historic settlements, particularly Newmarket and Bury St Edmunds (which contain significant concentrations of heritage value) but also in smaller historic rural settlements, the impacts of cumulative residential growth are formed by a complicated relationship between the level of activity, the existing infrastructure and the policy approach to locating and linking new development with the settlement. Types of impact include:

- Pressures associated with traffic flows, including the potential requirement to widen arterial and circulatory routes into the settlement;
- The pressure to provide increased levels of car parking in and around the historic town centre;
- The pressures to provide increased pedestrian space and balance town centre public realm between pedestrians and vehicles;
- The pressures that flow from increased resident demand for economic, retail and leisure activity, which leads to demands for development in central locations, notably retail premises with large footplates, which can pose challenges for historic locations (the City of Durham is a good example of a town that has faced these pressures, for example the Prince Bishop Shopping Centre);
- Pressures from specific activities need to be individually considered and assessed to generate bespoke solutions, for example race days in Newmarket which requires large volumes of additional visitors to be accommodated. Adverse impact on this unique function of Newmarket could potentially damage the horse racing industry and have knock on effects on the economy and character of Newmarket, although this will have to be assessed on a scheme specific basis. There is no evidence of a particular strategic tipping point, although there are constraints on land supply and potential localised effects.

Retail and Town Centre Issues

- 6.127 For Bury St Edmunds, growth will undoubtedly generate further retail expenditure and in turn place additional pressure on retailing in the town centre. Unconstrained or uncontrolled, this could risk detrimental impacts on the historic core of the settlement. Figures from the Bury St Edmunds and Haverhill Retail, Leisure and Offices Study 2007 ('Retail Study') forecast that a 12,000 estimated increase in population in and surrounding Bury St Edmunds (Zones 1 and 2) to 2021 would yield a requirement of 22,100 sq m of comparison shopping floor space within the town centre and 17,550 sq m of non-central comparison shopping floor space. There is no evidence within the NLP work on environmental capacity and infrastructure that suggests this is not an appropriate basis for planning – this is a matter for the spatial planning process.
- 6.128 Looking beyond this, the environmental capacity identified in this Study for Bury St Edmunds, at a high yield, is circa 20,000 new homes (48,400 new residents) although if this growth were to happen, it would only occur substantially beyond 2031. A simplistic application of the earlier ratio might suggest significant further increases, but to do so would not be appropriate. Long term forecasts of retail expenditure and hence floor space become substantially less reliable as the time horizon lengthens beyond the medium term and NLP would caution against applying ratios of population, expenditure and floor space associated with the period to 2021 (as defined by the existing Retail Study) beyond this.

- 6.129 There are a number of factors that could shape the potential future demand for retail and floor space beyond the 2021 time horizon of the current retail analysis:
 - Underlying patterns of household expenditure may change;
 - The Comparison/convenience split may change;
 - Changing trends in retailing, including the growth in multi-channel (e.g. online) shopping;
 - The growing move by larger brands (who had previously been moving to larger formats) to a mix of smaller stores; and
 - Changing patterns in the supply chain and in storage and distribution of goods meaning changes in sales densities and gross-net ratios in stores.
- 6.130 These and other factors may mean that future demand for floor space will not equate to population growth in the way that it has in the past or is projected to do so to 2021.
- 6.131 Nevertheless, it is reasonable to assume that further growth in the long term will generate further demand for retail floor space in the town. However, there is no evidence to suggest that Bury St Edmunds town centre cannot accommodate some new retail development or that points to a defined threshold of population growth linked to retail demand that must not be exceeded. The ability of Bury St Edmunds town centre to accommodate further demand without this prejudicing its historic core will depend on the following:
 - The availability of sites for new development capable of being developed taking account of draft PPS4 and other policy although NLP has not carried out a retail assessment as part of this Study there is some initial evidence of sites being available that could do this;
 - The application of appropriate design and conservation policies to ensure that scale, massing, and detailed design are adequately controlled to respect and reflect the historic character of the town. This may result in retail operators being required to deviate from their typical footprints and operating models. There are examples of successful developments in other historic centres that have achieved this.
 - Other factors, including car parking, public realm and other ancillary aspects of town centre management continuing to be aligned to preservation of the historic core alongside the maintenance of a thriving town centre.
- 6.132 There are other factors that will be relevant, drawing on experience of how other towns with constrained land use/conservation issues have met the retail needs of their growing population (some more or less successful), and which give confidence that Bury St Edmunds can accommodate further retail demand:
 - Floorless retail growth through increased sales densities in existing shops (i.e. the consumer expenditure per square metre in the town increases). The current comparison sales density for Bury St Edmunds is low (£5,800 per m² in 2006) compared to other locations;

- Innovative development and forms of retailing maximising the use of sites that do come forward through good design;
- Use of upper floors for retail which may occur if the pressure on retail development cannot be met at ground floor levels – current indications are that there may be significant scope for further upper floor use in Bury St Edmunds, subject to the ability of the many listed buildings to satisfactorily accommodate such uses; and
- Dispersal of some retail floorspace to district centres outside of the town centre recognising the planning implications of this.
- 6.133 In light of the potential additional growth of Bury St Edmunds (to 2031 and beyond) an update to the Retail Study might provide more definitive levels of retail capacity and the ability of the town to accommodate it, although longer term estimates should be treated with caution. It is also the case that strategies for growth in historic settlements need to be accompanied by proper consideration of the future of key transport solutions, and the function and future role of the town centres within their historic contexts.
- 6.134 These issues and opportunities are also applicable to other historic town cores, such as Newmarket and Haverhill. Haverhill is subject to a significant regeneration initiative and a Haverhill Town Centre Masterplan is in place to support this.
- 6.135 Although Newmarket does not have the same role in the retail hierarchy as Bury St Edmunds, there could still be risks to its historic core from related town centre retail growth. The Forest Heath Retail and Town Centres Study (2006) identifies that a 2,766 increase in population to 2021 in or around Newmarket (Zone 2) alongside other growth elsewhere (of which Newmarket attracts only limited amounts of available expenditure from) would lead to a comparison floorspace requirement of 10,766 sq m net. Potential growth in Newmarket and Exning of circa 5,000 new homes (12,500 new residents) could generate further requirement for retail floorspace.
- 6.136 As with Bury St Edmunds, if there is the demand for additional retail floorspace in Newmarket in the future, this could be accommodated in a variety of ways, including through use of upper floors or dispersal of retail floorspace to other locations. In particular, Newmarket could accommodate floorless retail growth with increased sales densities which in 2006 were as low as £4,136 per m² compared with £8,545 per m² in Cambridge (Cambridge Sub-Region Retail Study 2008).

Transport and Movement Issues

6.137 It is also the case that strategies for growth in historic settlements need to be accompanied by proper consideration of the future of key transport solutions, and the function and future role of the town centres within their historic contexts.

- 6.138 To avoid the cumulative impacts and avoid creating or exceeding thresholds for growth in the settlement (within the ambit of the physical capacity identified earlier in this section), the following criteria should be applied when examining the spatial pattern of development for growth in order to assess the cumulative impact of growth opportunities on a historic or sensitive settlement:
 - To what extent does the proposed development allow for linkages into (or enhance) the existing or planned sustainable travel network?
 - Do opportunities for growth allow for strengthening and supporting local centres within the larger settlement?
 - Are proposed opportunities well located in relation to major public transport hubs such as train stations and bus stations?
 - Would increase pedestrian space in the core area of the town have a detrimental impact on retail activity or would it improve the quality of the pedestrian environment particularly during peak traffic times?
 - What opportunities arise from developments to contribute to the addition of new sustainable infrastructure facilities, for example investment in sustainable transport solutions (e.g. park and ride sites if appropriate or priority bus routes?) and the public realm?
- 6.139 In Newmarket, particular consideration should be made on the possible impact that increased traffic could have on the horse racing industry, with the suggestion having been made that there is an increasing risk to easy movement of horses between studlands that require crossing roads. Opportunities such as horse crossings or further traffic management may help to mitigate such risks and these should be explored further in conjunction with the relevant stakeholders. In general terms, beyond some anecdotal suggestion, there was limited evidence at this stage of any measurable impacts of future traffic growth upon the horse racing industry. For this reason, this study can do no more than hypothesise the potential impact and highlight the need for future consideration of economic and/or cultural impacts.

Summary on Conservation and Heritage

- 6.140 In summary, there is no evidence that points to there being a defined tipping point for when the impacts of these manifest themselves in a way that cannot be mitigated. Ultimately, there is no evidence that sensible planning and appropriate mitigation will not be able to ensure that such impacts are avoided in both large settlements already dealing with high volumes of traffic and pedestrians and smaller historic settlements which may experience proportionately larger levels of growth.
- 6.141 For example, proposed growth, whilst increasing activity and pressures, may also allow for funding to mitigate the impacts of damaging activities such as heavy congestion within historical centres. Examples include public realm investment, demand management, park and ride and sensitive design of infrastructure and development. The recent and proposed scale of growth in Cambridge is a case in point, whilst the cities of York and Bath also seek to

tackle these pressures (with inevitable tensions, some successes and some less positive outcomes). Ultimately, any impacts need to be traded-off against the potential benefits of growth, including the meeting of housing needs and opportunities for employment.

Conclusions

- 6.142 This section has identified the key environmental constraints, defined and quantified the Opportunity Areas for development in and around each settlement and summarised the environmental capacity issues that will need to be considered moving forward.
- 6.143 The next section outlines the infrastructure that will be required for different levels of growth in each settlement to inform how infrastructure does need to be reflected in determining the distributions of development. It also estimates the total costs of infrastructure required for the period to 2021 and 2031 based on the growth levels set out in Section 4.0.

7.0 Infrastructure to Support Growth

Introduction

- 7.1 Growth will create a requirement for infrastructure to support development. This section tests the infrastructure requirements of the environmental capacity upper range limits, set out in Section 6.0, to identify what infrastructure would be required in each settlement at that level of growth and the cost implications of this. The testing reflects long term opportunities for growth and looks at the relative marginal benefits of growth in relation to infrastructure in different types of settlement. This section also seeks to identify the level of infrastructure provision required to support the housing growth proposed by the RSS and to identify, at a high level, the potential scale of costs associated with provision of that infrastructure. As part of this an analysis of the infrastructure requirements to support the likely levels of growth to 2021 and 2031 has been undertaken, also allowing consideration of the required funding and delivery mechanisms in Section 8.0.
- 7.2 Identifying infrastructure requirements has been done with an infrastructure model using a system of benchmarking, as introduced in Section 5.0, whereby existing provision is measured against locally or nationally identified ratios or standards to give an overview of the existing level of provision of an infrastructure type. This baseline position seeks to understand whether there are existing levels of 'under provision' that will need to be considered and accounted for or 'surplus' provision which may meet some future demand without the need for additional infrastructure. The baseline position also helps to provide a context for the existing quality of provision, particularly for public services such as health and emergency services which will require additional infrastructure to maintain and improve standards as the areas they serve grow. Where a baseline requirement is identified, it is included in the required infrastructure levels for 2021 and 2031.
- 7.3 These standards can then be applied to housing growth to yield a theoretical requirement for additional infrastructure that will accompany an identified level of development. We have used standards of provision either promoted through local or national policy or guidance, or where these are not suited, an approach to maintain the existing status quo of provision is adopted. Once a requirement is identified it is possible to apply a unit cost to the infrastructure requirement to gain an indication of the likely capital costs associated with provision of that infrastructure.
- 7.4 There are two aspects to the estimate of infrastructure requirements:
 - a The infrastructure required within each settlement to reflect different levels of growth within the 'test range' defined in Section 6.0. This analysis is settlement focused.

- b The infrastructure required district/borough-wide to deal with overall growth levels to 2021 and 2031. This analysis is carried out district-wide.
- A full summary of the infrastructure model outputs and rationale behind the identified levels of required provision to support housing growth are included in Appendix 4. A full summary of the baseline analysis is provided on a settlement by settlement basis in Appendix 5.

Limitations of a Benchmarking Approach

- 7.6 There are numerous limitations to using a benchmarking approach, although such an approach is very useful in providing an overview of current provision and future requirements as a starting point for more in-depth analysis. In this context a benchmarking approach should not be used as a substitute for sitespecific analysis that can provide a much more in-depth assessment of the quantitative and qualitative provision.
- The levels of infrastructure identified are broad level requirements based on 7.7 either identified standards, the ratio of existing provision or average levels of provision across varying spatial scales. In each case the standards used are based on a sound rationale and also rely on information obtained from stakeholder consultation on specific infrastructure characteristics and issues within the Study Area. However, the identified requirements are not to be taken as a definitive level of requirement, recognising that location specific issues may present themselves, and that certain infrastructure classes are undergoing reviews of provision and operational models that will have an impact. However, it can be used as a strategic tool in assessing the total level of infrastructure requirement that would reasonably be required to support such levels of growth. Similarly, the costings for buildings are estimates based either on comparable schemes or identified build costs and should not be used as a definitive level of capital cost in advance of a precise specification, merely an indicative amount to give an estimate of the likely level of costs. These should not be used as a basis for s.106 negotiations on individual sites without validating the precise requirement.
- 7.8 A benchmarking approach has not been suitable for all infrastructure themes due to the complexities of certain infrastructure types and where there are gaps in baseline data. Where a benchmarking approach has not been suitable, a fully qualitative approach is taken, using information obtained from our background review and stakeholder consultation to identify key future requirements.

Physical, Social and Community Infrastructure Requirements

The infrastructure types being assessed are grouped into a series of themes around which the analysis infrastructure requirements have been undertaken.
 These are set out as follows:

- Transport (Roads and Highways, Public Transport, Cycle and Public Footpaths);
- Utilities (Waste and Recycling, Water, Wastewater and Energy);
- Retail centres and services;
- Education and Skills;
- Health and Social Care (GP Surgeries, Dentists, Hospitals, Health Centres and Nursing Homes);
- Community Facilities (Village Halls, Community Halls and Libraries);
- Arts, Culture and Leisure (Galleries, Museums and Indoor Sports Provision);
- Community Safety/Emergency Services (Police Services, Ambulance Services, and Fire Services);
- Green Infrastructure and Outdoor Facilities (Parks, Recreational and Amenity Open Space, Sports Pitches, Courts and Nature Reserves);
- Business Support Services; and
- Affordable Housing
- 7.10 Where evidence is available the analysis has quantified likely relevant infrastructure (physical and non-physical) needs and cost by type. However, it is important to recognise that not all infrastructure can be quantified and therefore qualitative assumptions have been made in assessing the potential impact of growth. Where this is the case, relevant and available data, as well as stakeholder consultations, have been utilised to provide an overall picture of infrastructure provision and requirements, although due to a lack of quantitative data, costs have not always been identified. Transport is a key area where, although preliminary thoughts on potential transport solutions to growth have been identified, worked through costs have not. Transport issues are currently being considered by the County Council in a separate assessment, the results of which were not available in the timeframe for this Study.
- 7.11 It should also be recognised, in respect of education that this is subject to a strategic review that is moving the structure of provision from three to two tiers. At the current time, there is no evidence on how this process will manifest itself in the Study Area, beyond the general observation that in many cases, the proposal is for middle schools to close and for first and upper schools to be expanded to primary and secondary schools respectively. This presents opportunities for synergy with the investment needed to take account of future housing growth, but it means the analysis of existing capacity, particularly in first schools, in individual settlements needs to be qualified by the fact that the restructuring programme is likely to change what is available.

Infrastructure Requirements by Settlement

7.12 In producing a pattern of development for the Study Area regard has been made to the baseline infrastructure position and infrastructure requirements derived from future housing growth. This has enabled NLP to undertake an analysis of the overall infrastructure requirements to support the new housing development at the three identified growth levels as well as providing overall costs.

- 7.13 To identify infrastructure requirements on a settlement by settlement basis an analysis of so-called 'tipping points' has been undertaken. This analysis measured existing provision of different infrastructure types in each settlement against identified standards to identify levels of surplus provision or levels of under provision. Where there are levels of surplus provision a 'tipping point' has been identified which gives an estimation of how many more houses can be accommodated within the settlement before an additional unit of any infrastructure type is required. This analysis is identified in Appendix 4 and has been summarised for each settlement in Section 5. Current infrastructure provision identified in the 'tipping point' analysis has been mapped to illustrate the spatial provision of infrastructure and is included in the mapping appendix.
- 7.14 The total infrastructure required to support different levels of growth in each settlement and the cost of this provision is identified in Appendix 6. The table below summarises this to give an idea of likely requirements, costs and phasing of the fundamental and essential infrastructure that is critical to supporting growth. The indicative levels of growth are related to the potential capacities identified through the screening of environmental and locational constraints and are therefore not standardised in this summary, but respond to the levels of growth that may occur in each settlement based on the test range of the Opportunity Areas defined in Section 6.0. Other levels of growth from those listed below may be possible.

	New Homes	Fundamental and Essential Infrastructure Required for Level of Growth	Cost	Partners with Council
Forest	Heath			
_	100	Local Highway Works 3 GPs (existing deficit) 1 Dentist (existing deficit)	£40k £1.6m £545k	Highways Agency; SCC NHS/PCT; Private Sector NHS/PCT; Private Sector
Brandor	250	Local Highway Works 4 GPs 2 Dentists	£100k £2.2m £1.1m	Highways Agency; SCC NHS/PCT; Private Sector NHS/PCT; Private Sector
	500	Local Highway Works 4 GPs 2 Dentists	£200k £2.2m £1.1m	Highways Agency; SCC NHS/PCT; Private Sector NHS/PCT; Private Sector
	250	Local Highway Works New/Upgraded Wastewater Treatment 2 Dentists (existing deficit)	£100k £n/a £1.1m	Highways Agency; SCC Anglian Water NHS/PCT; Private Sector
Lakenhea	1,000	Local Highway Works New/Upgraded Wastewater Treatment 4 Dentists 1 GP New Primary School	£400k £n/a £2.2m £545k £4.9m	Highways Agency; SCC Anglian Water NHS/PCT; Private Sector NHS/PCT; Private Sector SCC; Learning Skills Council
th	2,000	Local Highway Works New/Upgraded Wastewater Treatment 5 Dentists 3 GP New Primary School	£800k £n/a £2.7m £1.6m £4.9m	Highways Agency; SCC Anglian Water NHS/PCT; Private Sector NHS/PCT; Private Sector SCC; Learning Skills Council
Nev art	250	Local Highway Works Upgrade to Substation	£100k £n/a	Highways Agency; SCC EDF; National Grid
wm ‹et	500	Local Highway Works Upgrade to Substation	£200k £n/a	Highways Agency; SCC EDF; National Grid

	New	Fundamental and Essential	Cost	Partners with Council
	Homos	Infractive Dequired for Level	UUSt	r artificis with oounon
	nomes	of Growth		
		of Growth		
	2,000	Local Highway Works	£100k	Highways Agency; SCC
		Upgrade to Substation	£n/a	EDF; National Grid
		Traffic Calming & Traffic Flow Works	c£1m	Highways Agency; SCC
		A14 Junction Improvements	c£2m	Highways Agency; SCC
		New Local Convenience Shop	£n/a	Private Sector; SCC
	250	Local Highway Works	£100k	Highways Agency; SCC
		1 GP (existing deficit)	£545k	NHS/PCT; Private Sector
	500	Local Highway Works	£200k	Highways Agency; SCC
		2 GPs	£1.1m	NHS/PCT; Private Sector
ж		Newmarket Cycle Connection	£500k	Highways Agency; SCC
ni	2,000	Local Highway Works	£800k	Highways Agency; SCC
26		4 GPs	£4.4m	NHS/PCT; Private Sector
		Newmarket Cycle Connection	£500k	Highways Agency; SCC
		New Primary School	£2.5m	SCC; Learning Skills Council
		2 Dentists	£1.1m	NHS/PCT; Private Sector
		Upgrade to substation	£n/a	EDF; National Grid
	100	Local Highway Works	£40k	Highways Agency; SCC
	500	Local Highway Works	£200k	Highways Agency; SCC
		1 GP	£545k	NHS/PCT; Private Sector
		1 Dentist	£545k	NHS/PCT; Private Sector
7		Upgrade to Substation	£n/a	EDF; National Grid
ent	1,000	Local Highway Works	£400k	Highways Agency; SCC
ffo		2 GPs	£545k	NHS/PCT; Private Sector
rd		2 Dentists	£545k	NHS/PCT; Private Sector
		Upgrade to Substation	£n/a	EDF; National Grid
		T-Junction upgrade on Newmarket Rd	£500k	Highways Agency; SCC
		Off-Road Cycle Connection to Station	£1m	Highways Agency; SCC
		New Primary School	£2.5m	SCC; Learning Skills Council
	100	Local Highway Works	£40k	Highways Agency; SCC
_		1 GP (existing deficit)	£545k	NHS/PCT; Private Sector
Š		1 Dentist (existing deficit)	£545k	NHS/PCT; Private Sector
est		Mildenhall Transport Mitigation	£500k	Highways Agency; SCC
고	250	Local Highway Works	£100k	Highways Agency; SCC
0 M		1 GP (existing deficit)	£545k	NHS/PCT; Private Sector
		1 Dentist (existing deficit)	£545k	NHS/PCT; Private Sector
		Mildenhall Transport Mitigation	£1.25m	Highways Agency; SCC
	250	Local Highway Works	£100k	Highways Agency; SCC
		Mildenhall Transport Mitigation	£1.25m	Highways Agency; SCC
Ξ	1,000	Local Highway Works	£400k	Highways Agency; SCC
ild		Mildenhall Transport Mitigation	£5m	Highways Agency; SCC
en		Upper School	£14.8m	SCC; Learning Skills Council
ha	2,000	Local Highway Works	£800k	Highways Agency; SCC
=		Mildenhall Transport Mitigation	£10m	Highways Agency; SCC
		Upper School	£14.8m	SCC; Learning Skills Council
		1 Dentist	£545k	NHS/PCT; Private Sector
	250	Local Highway Works	£100k	Highways Agency; SCC
		1 Dentist (existing deficit)	£545k	NHS/PCT; Private Sector
T	1,000	Local Highway Works	£400k	Highways Agency; SCC
ec		2 Dentists	£1.1m	NHS/PCT; Private Sector
		1 GP	£545k	NHS/PCT; Private Sector
od		Cycle Network	£500k	Highways Agency; SCC
ge		Rural Road Network Improvements	£1m	Highways Agency; SCC
		Upgrade to Substation	£n/a	EDF; National Grid
		New Wastewater Treatment	£n/a	Anglian Water
		New Primary School	£4.9m	SCC; Learning Skills Council

	New	Fundamental and Essential	Cost	Partners with Council
	Homes	Infrastructure Required for Level		
		of Growth		
	2,000	Local Highway Works	£800k	Highways Agency; SCC
		3 Dentists	£1.6m	NHS/PCT; Private Sector
		3 GP	£1.6m	NHS/PCT; Private Sector
		Cycle Network	£500k	Highways Agency; SCC
		Rural Road Network Improvements	£2m	Highways Agency; SCC
		Upgrade to Substation	£n/a fn/a	EDF; National Grid
		New Primary School	$f_{4} \text{ Qm}$	SCC: Learning Skills Council
	100	Local Highway Works	£40k	Highways Agency: SCC
		2 GPs (existing deficit)	£1.1m	NHS/PCT; Private Sector
		1 Dentist (existing deficit)	£545k	NHS/PCT; Private Sector
		Mildenhall Transport Mitigation	£500k	Highways Agency; SCC
	250	Local Highway Works	£100k	Highways Agency; SCC
B		2 GPs (existing deficit)	£1.1m	NHS/PCT; Private Sector
ċk		2 Dentists (existing deficit)	£1.1m	NHS/PCI; Private Sector
ਨ	500	Mildennali Transport Milgation	£1.25m	Highways Agency; SCC
Ň	500	3 GPs (existing deficit)	£200k	NHS/PCT: Private Sector
		2 Dentists (existing deficit)	£1.1m	NHS/PCT: Private Sector
		Mildenhall Transport Mitigation	£2.5m	Highways Agency; SCC
		Cycle Connection	£500k	Highways Agency; SCC
		Extension to/new Primary School	£1.8m	SCC; Learning Skills Council
		Upgrade to substation	£n/a	EDF; National Grid
St Edn	nundsbury	,		
	5,000	Local Highway Works	£2m	Highways Agency; SCC
		New Link Roads	£1.5m	Highways Agency; SCC
		New Primary School	£7.3m	SCC; Learning Skills Council
		New Upper School	£14.8m	SCC; Learning Skills Council
		Upgrade to substations	£n/a	EDF; National Grid
		East Dedicated Bus Route	£1m	Highways Agency; SCC
		New Local Convenience Shop	fn/a	Private Sector: SCC
		Cycle Network	£1m	Highways Agency; SCC
	10,000	Local Highway Works	£4m	Highways Agency; SCC
		New Link Roads	£1.5m	Highways Agency; SCC
œ		3 New Primary Schools	£21.9m	SCC; Learning Skills Council
ury		2 New Upper Schools	£29.6m	SCC; Learning Skills Council
Š		Upgrade to substations	£n/a	EDF; National Grid
Ē		East Dedicated Bus Route	£1m	Highways Agency; SCC
dm		New Local Convenience Shops	fn/a	Private Sector: SCC
un		4 New GPs	£2.2m	NHS/PCT: Private Sector
ds		Cycle Network	£2m	Highways Agency; SCC
	15,000	Local Highway Works	£6m	Highways Agency; SCC
		New Link Roads	£1.5m	Highways Agency; SCC
		5 New Primary Schools	£36.5m	SCC; Learning Skills Council
		2 New Upper Schools	£29.6m	SCC; Learning Skills Council
		Upgrade to substations	£n/a	EDF; National Grid
		Penlacement Junction 43 on 414	£10m	Highways Agency; SCC
		New Local Convenience Shops	£n/a	Private Sector: SCC
		New Wastewater Treatment	£n/a	Anglian Water
		7 New GPs	£3.8m	NHS/PCT; Private Sector
		Cycle Network	£3m	Highways Agency; SCC
-	250	Local Highway Works	£100k	Highways Agency; SCC
Ha∧ hil		8 GPs (existing deficit)*	£4.4m	NHS/PCT; Private Sector
l /er		1 Dentists (existing deficit)	£545k	NHS/PCT; Private Sector
		Upgrade to substation	£n/a	EDF; National Grid

	Now	Fundamental and Eccential	Cost	Partners with Council
	New		COSL	Partners with Council
	Homes	Infrastructure Required for Level		
		of Growth		
	1 000	Loool Highway Works	£400k	Highwaye Adapay: SCC
	1,000	C.C.D. (aviating deficit)*	£400k	NHS (DCT: Drivete Sector
		2 Dentiete (existing deficit)	£4.9111	NHS/PCT, Private Sector
		2 Dentists (existing dencit)	£1.1111	EDE: National Grid
	2.000			Lighwaya Aganay 200
	2,000	11 CDs (aviating deficit)*	£800K	Highways Agency; SCC
		2 Deptiete (existing deficit)	£0III	NHS/PCT; Private Sector
		S Dentists (existing dencit)	£1.0III	EDE: National Crid
		New Westewater Treatment	£n/a	EDF, National Grid
		New Wastewater Treatment	LI/d	Anglian water
		New Logal Convenience Shon	£14.011	Drivete Sector: SCC
		New Local Convenience Shop		Highwaya Agapay SCC
	100		£500k	Highways Agency, SCC
	100	Local Highway Works	£40K	Highways Agency; SCC
	500	Local Highway Works	£200K	Highways Agency; SCC
		1 GP	£545K	NHS/PCT; Private Sector
-		1 Dentist	£545K	NHS/PCI; Private Sector
Bai		New/Extended Wastewater Works	±n/a	Anglian Water
TO	1 000	Extension to/ New Primary School	£1.8m	SCC; Learning Skills Council
٤	1,000	Local Highway Works	£400k	Highways Agency; SCC
		1 GP	£545K	NHS/PCT; Private Sector
		2 Dentist	£1.1m	NHS/PCI; Private Sector
		New/Extended Wastewater Works	£n/a	Anglian water
	100	Extension to/ New Primary School	£1.8m	SCC; Learning Skills Council
	100	Local Highway Works (±40k)	£40k	Highways Agency; SCC
	500	Extension to/New Primary School	£1.8m	SCC; Learning Skills Council
	500	Local Highway Works	£200k	Highways Agency; SCC
		Extension to/New Primary School	£1.8m	SCC; Learning Skills Council
Ri		1 Dentist	±545k	NHS/PC1; Private Sector
sb	1.000		±545k	NHS/PC1; Private Sector
~	1,000	Local Highway Works	£400k	Highways Agency; SCC
		Extension to Primary School and New	£6.7M	SCC; Learning Skills Council
		Primary School	64.4	
		2 Dentists	£1.1m	NHS/PCT; Private Sector
	100	2 GPS	£1.1m	NHS/PCT; Private Sector
	100	Local Highway Works	£40K	Highways Agency; SCC
⋝	250	1 Dentist (existing dencit)	£343K	NHS/PCT; Private Sector
ed	250	Local Highway Works	£100k	Fighways Agency, SCC
İng		1 Deptiet (existing deficit)	£1.8111	NHS (PCT: Private Sector
l gt	500		£343K	NHS/PCT; Private Sector
ň	500	Local Highway Works	£200K	Highways Agency; SCC
		1 Dentiet (existing deficit)	£1.8111	SUC; Learning Skills Council
	100	1 Dentist (existing dencit)	£345K	NHS/PCT; Private Sector
	100	1 Dentiet (existing deficit)	£40K	Highways Agency; SCC
	500	1 Dentist (existing dencit)	£343K	NHS/PCT; Private Sector
X	500	Local Highway Works	£200K	Fighways Agency, SCC
No No		1 Deptiet (existing deficit)	£1.8111	NHS (PCT: Private Sector
Ę	1.000		£343K	NHS/PCI, Plivate Sector
_	1,000	Local Highway Works	£400K	Fighways Agency, SCC
		2 Deptiete	£1.011	NHS (DCT: Drivete Sector
	250	2 Denilists	£1.111	Highwove Agenesis COC
	200	Local Figure Works	TTOOK	nighways Agency; SCC
St	1.000		±545K	INDS/PCI; Private Sector
an	1,000	Local Highway Works	±400k	Highways Agency; SCC
to		∠ Dentists	±1.1m	NHS/PCT; Private Sector
3		Extension to/New Primary School	£1.8m	SCC; Learning Skills Council
		Upgrade to substation	£n/a	EDF; National Grid

	New Homes	Fundamental and Essential Infrastructure Required for Level of Growth	Cost	Partners with Council
	2,000	Local Highway Works 3 Dentists Extension to Primary School and New Primary School	£400k £1.6m £6.7m	Highways Agency; SCC NHS/PCT; Private Sector SCC; Learning Skills Council
		Upgrade to substation New Local Convenience Shop New/Extended Wastewater Works	£n/a £n/a £n/a	EDF; National Grid Private Sector; SCC Anglian Water
	100	Local Highway Works 1 Dentist	£40k £545k	Highways Agency; SCC NHS/PCT; Private Sector
Clare	500	Local Highway Works 1 Dentists Extension to/New Primary School	£200k £545k £1.8m	Highways Agency; SCC NHS/PCT; Private Sector SCC; Learning Skills Council
Ū	1,000	Local Highway Works 2 Dentists Extension to/New Primary School	£400k £1.1m £1.8m	Highways Agency; SCC NHS/PCT; Private Sector SCC; Learning Skills Council
_	100	Local Highway Works	£40k	Highways Agency; SCC
Wick bro	250	Local Highway Works 1 Dentist	£100k £545k	Highways Agency; SCC NHS/PCT; Private Sector
ham- ok	500	Local Highway Works 1 Dentist Extension to/New Primary School	£200k £545k £1.8m	Highways Agency; SCC NHS/PCT; Private Sector SCC; Learning Skills Council

Table 17 Infrastructure to Support Growth by Settlement

7.15

*Haverhill GPs doesn't account for the temporary polyclinic provision recently approved as this will in the long term need to find a permanent site and suitable funding.

Table 17 summarises the key infrastructure required to support different levels of growth in each settlement. It should be noted that highways infrastructure costs are proxies related to the relative risks associated with each project as identified in consultation with Suffolk County Highways. In addition funding for transport works around Mildenhall could be included as a funding pot, which may be used to fund any works identified as being required to enable growth of that scale, with s.106/CIL receipts from developers contributing. Substation and wastewater treatment works upgrades have not been costed due to the inherent problems associated with projecting the costs of future provision as they are dependent on so many variables. The funding streams for upgrades to utilities tend to be raised through utilities companies' agreements with developers to enable network connections and much of this funding will not come through public sources. However, consideration must be given to impact on development viability in providing upgrades to these services and we have sought to build this into our analysis.

7.16 Certain types of social infrastructure and public service provisions are based on benchmarks rather than detailed proposals. It does not take account of the potential for economies of scale that might be possible if, say, two smaller settlements pooled their requirement for medical provision and provided one large facility instead of two smaller ones.

Total cost of infrastructure to deliver growth to 2021 and 2031

- 7.17 In order to give a figure for the total infrastructure costs to deliver growth to the levels set by RSS to 2021 and potential future growth to 2031, the total level of infrastructure required to support growth has been estimated. The benefit of this approach is that it gives an overall quantity of the infrastructure required to support growth taking into account populations in rural areas that utilise infrastructure types within towns and the larger settlements which serve a rural hinterland. This should then be located at an appropriate spatial scale and in relation to areas of existing deficiency and areas of identified growth in order to support development.
- The following table identifies the overall infrastructure requirements and costs associated with the three identified levels of housing growth defined in Section 4.0. It also provides a summary of the key issues for each infrastructure type and potential delivery issues.
- This table does not provide a summary of the cost per dwelling for each 7.19 infrastructure type, as costs per dwellings would include costs associated with existing infrastructure deficits, or may equal nothing where there is existing surplus provision against a benchmark. Such an exercise would therefore be of limited benefit. However, an estimate could be identified by considering the growth level from the relevant scenario against the cost identified in the table. Similarly, unit prices for infrastructure provision, standards for provision against population and the average occupation rate for dwellings are identified in Appendix 4 allowing absolute costs per dwelling for infrastructure type requirements to be identified, without taking into account deficits or surplus in provision. For the majority of infrastructure types, costs will be met by a range of funding sources (recognising the significant capital sums being made by Government, often through standard funding formulae unrelated to development), and as such the cost per dwelling does not necessarily indicate a cost to be levied against that dwellings development (i.e. through commuted sums), but will depend on what funding elements are available at any such time.

Infrastructure and Environmental Capacity Appraisal

Infrastructure	Forest Heath			St Edmundsbury			
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	Commentary & Key Delivery Issues
Green Infrastructu	ire & Outdoor Sport						
	2021: 11.5ha (£2.3m)	2021: 13.9ha (£2.8m)	2021: 17.8ha (£3.6m)	2021: 16.8ha (£3.4m)	2021: 20.3ha (£4.1m)	2021: 26ha (£5.2m)	There are significant differences in specifications for types and forms of parks and open spaces. Further detailed work would
Amenity Open Space and Parks	2031: 20.5ha (£4.1m)	2031: 24.7ha (£4.9m)	2031: 31.6ha (£6.3m)	2031: 29.9ha (£6m)	2031: 36ha (£7.2m)	2031: 46.1ha (£9.2m)	need to be considered on a scheme by scheme basis. Responsibility lies on developer if provision is required as part of new development, however contributions could still be part of s106 agreement to local authority led provision.
Nature Reserves	2021: 0.8ha 2031: 9.7ha	2021: 3.1ha 2031: 13.9ha	2021: 7.0ha 2031: 20.9	2021: 87.9ha 2031: 100.9ha	2021: 91.3ha 2031: 107.1ha	2021: 97ha 2031: 117.2ha	English Nature's Accessible Green Space Model advocates that there should be a minimum of 1 hectare of Local Nature Reserve per 1,000 population with a site within 2km of home. Nature reserves are not necessarily a type of infrastructure that can just be developed; however, consideration should be given to provision and the potential for habitat creation. Cost estimates are not appropriate as it will depend on the existing condition of potential nature reserves.
Play Areas	2021: 9.2ha (£740k) 2031: 16.4ha (£1.3ha)	2021: 11.1ha (£900k) 2031: 19.7ha (£1.6m)	2021: 14.2ha (£1.1m) 2031: 25.3ha (£2m)	2021: 16.8ha (£1.4m) 2031: 29.9ha (£2.4m)	2021: 20.3ha (£1.6m) 2031: 36ha (£2.9m)	2021: 26ha (£2m) 2031: 46.1ha (£3.7m)	Children's play areas encompass local areas of play as well as equipped areas of play. They may be sought as part of development proposals or be brought forward by the local authority through use of s106 negotiations.
Allotments	2021: 2.3ha (£1.5m) 2031: 4.1ha (£2.7m)	2021: 2.8ha (£1.9m) 2031: 4.9ha (£3.3m)	2021: 3.6ha (£2.4m) 2031: 6.3ha (£4.2m)	2021: 3.4ha (£2.2m) 2031: 6ha (£4m)	2021: 4.1ha (£2.7m) 2031: 7.2ha (£.4.8m)	2021: 5.2ha (£3.5m) 2031: 9.2ha (£6.2m)	Allotments are an important local facility, particularly in more urban areas where people may not have sufficient garden space. Full allotments with running water and full amenities are often provided by the council or town/parish councils.

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Infrastructure	Forest Heath			St Edmundsbury			
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary a vey penvery issues
	2021: 35.9ha Pitch, 4.6ha Non-	2021: 38.7ha Pitch, 5.6ha Non-	2021: 43.4ha Pitch, 7.1ha Non-	2021: 26.9ha Pitch, 5.7ha Non-	2021: 38.7ha Pitch, 5.6ha Non-	2021: 41.6ha Pitch, 10.4ha	Fit/NPFA standards ('The Six Acre Standards') advocates' provision of both pitch and non-
Outdoor Sports	Pitch (£12.1m)	Pitch (£13.5m)	Pitch (£15.7m)	Pitch (£11.5m)	Pitch (£13.5m)	Non-Pitch (£17.8m)	pitch sports facilities. This can either be provided by developers as part of a scheme, or
(Pitch & Non-	2031: 46.6ha	2031: 51.7ha	2031: 60ha	2031: 47.8ha	2031: 51.7ha		through local authority led provision funded
Pitcn)	Pitch, 8.2ha Non- Pitch (£17.3m)	Pitch, 9.9ha Non- Pitch (£19.8m)	Pitch, 12.6ha Non-Pitch	Pitch, 12ha Non- Pitch (£20.5m)	Pitch, 9.9ha Non- Pitch (£24.7m)	2031: 73.8ha Pitch, 18.4ha	paruy by stoo agreements.
			(£23.9m)			Non-Pitch (£31.6m)	
Health							
	West Suffolk Hospit beyond just Bury St	tal is the main hospit Edmunds. Identified	al which serves mos I requirements are th	t of the Study Area, a lerefore done on a S	and therefore serves tudy Area-wide basis.	an area far	NLP have used an average costing of £400,000 per bed which includes all construction and equipment costs.
	Low Growth – 2021	: 80 New Beds (£31.	.7m) – 2031: 141 Ne	ew Beds (£56.4m)			West Suffolk Hospital is understood to be
Hospitals	Medium Growth – 2 High Growth – 2021	2021: 96 New Beds (1 1 - 1 23 New Reds (F4	E38m) – 2031: 170 9m) – 2031· 218 Ne	New Beds (£68m) w Reds (£87m)			capable of accommodating growth for the foreseeable future, although long term a new
							hospital is planned.
							Collaborating with NHS Suffolk IS recommended to ensure strategic planning of
	2021 · 13 5 GDs	2021-17 0 GPc	2021-17 2 GPs	2021 - 8 8 GDe	2021-10 9 GPs	2021-14 2 GPc	NI D have used a standard ratio of 1 GD ner
	(£7.3m)	2021. 14.3 GFS (£8.1m)	(£9.4m)	2021. 0.0 GFS (£4.8m)	2021. 10.3 GFS (£5.9m)	(£7.7m)	1,700 population. There is current surplus provision in SEBC and a shortfall in FHDC. GP
	2031: 18.8 GPs	2031: 21.3 GPs	2031: 25.4 GPs	2031: 16.5 GPs	2031: 20.1 GPs	2031: 26.1 GPs	surgeries are usually funded privately or rented
GP's	(£10.2m)	(#D.T.T.am)	(#13.8M)	(TAM)	(TTTM)	(エエ4.∠M)	renting rooms in PCT owned Health Centres.
							Thus cost's of providing GP surgeries does not necessarily fall on the public purse. There
							may be occasions where it is prudent to
							secure sites surtable for an surgeries trifough section 106 agreements.
	2021: 14.9	2021: 16.1 Dontiete (f8 7m)	2021: 18 Dontiete (f0 8m)	2021: 5.2 Dontiete (f2 8m)	2021: 6.9	2021: 9.8	NLP have used a standard ratio of 1 dentist
Dosticto							generally provided on a private basis and the
	2031: 19.3 Dentists (f10 5m)	2031: 21.4 Dentists (f11 6m)	2031: 24.9 Dentists (f13.6m)	2031: 11.7 Dentists (£6.4m)	2031: 14.8 Dentists (£8.1m)	2031: 19.9 Dentists (f10 8m)	cost of provision does not fall on public purse , working on a similar basis as GPs.
		(((1110-07-7-)	

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Infrastructure	Forest Heath			St Edmundsbury			-
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary & Ney Delivery Issues
	Nursing Homes are have assessed prov	provided on a comm vision on a Study are	ercial basis and are r a-wide basis.	not necessarily requi	red to be locationally	specific. We	Costs do not fall on the public purse as nursing homes are provided on a commercial basis,
Residential Care							although is subsidised through means tested
Homes	Low Growth – 2021 Medium Growth – 2	.: 185 New Spaces - 2021: 223 New Space	- 2031: 329 New Spa es - 2031: 396 New	aces / Spaces			grants to individuals. The provision required is to maintain provision for the national average
	High Growth – 202	1: 286 New Spaces -	- 2031: 508 New Spa	aces			of people in residential care.
Emergency Servic	SƏ						
	2021: 29 Officers (f1 3m)	2021: 35 Officers (f1 6m)	2021:45 Officers	2021: 42 Officers (£1 9m)	2021: 51 Officers (f 2 3m)	2021: 65 Officers (f2 9m)	Requirements represent the numbers of officers to maintain the existing status run of
							officers per population in Suffolk. Costs
Police	2031: 51	2031: 62	2031: 79	2031: 75	2031: 90	2031: 115	represent equipment and building costs per
	Officers (±2.3m)	Offlicers (£2.7m)	0tticers (±3.5m)	0tticers (±3.4m)	0fticers (±.4.1m)	Officers (±5.2m)	mechanisms are often utilised for delivery of new police stations.
	2021: 0.8	2021: 1	2021: 1.3	2021: 1.2	2021: 1.5	2021: 1.9	Suffolk Fire and Rescue performance is
	Engines/Bays	Engine/Bay	Engines/Bays	Engines/Bays	Engines/Bays	Engines/Bays	considered to be strong. NLP have adopted
1	(£435k)	(£524k)	(£980k)	(£635k)	(£765k)	(£980k)	maintaining proportionate level of service
Fire & Rescue							provision. Suffolk has also recently agreed a
	2031: 1.5	2031: 1.8	2031: 2.3	2031: 2.1	2031: 2.6 5	2031: 3.3 5	many fire stations throughout the county Posts
	Engines/Bays (£773k)	Engines/ Bays (£931k)	Engines/ Bays (£1.2m)	Engines/ Bays (£1.1m)	Engines/Bays (£1.4m)	Engines/ Bays (£1.7m)	represent equipment and building costs.
	2021: Less than	2021: Less than	2021: Less than	2021: Less than	2021: Less than	2021: 1 of each,	Provision of ambulance services includes
	one whole	one whole	one whole	one whole	one whole	plus part of	emergency ambulances, non-emergency
	vehicle (£273k)	vehicle (£329k)	vehicle (£421k)	vehicle (£398k)	vehicle (£480k)	additional vehicles	ambulances and response vehicles. Costs are identified on the basis of vehicle costs and
	2031: 1	2031: 1.2	2031: 1.6	2031: 1.6	2031: 1.6	(£615k)	building costs. NLP have adopted maintaining
	Emergency	Emergency	Emergency	Emergency	Emergency		proportionate level of service provision,
	Ambulance, Less	Ambulances, 1	Ambulances, 1.2	Ambulances, 1.2	Ambulances, 1.2	2031: 1 of each,	although requirements are very low.
Ambulance	than one whole vehicle for other	Response Vahirla 1 1 Non-	Response Vehicle 1 4 Non-	Response Vehicle 1 4 Non-	Response Vahicla 1 4 Non-	plus part of additional	
	tynes (f485k)	Emergency	Fmergency	Fmergency	Fmergency	vehicles	
		Ambulance	Ambulance	Ambulance	Ambulance	(£1.1m)	
		(£584k)	(£749k)	(£708k)	(£853k)		

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Infrastructure	Forest Heath			St Edmundsbury			Commentary 8. Key Delivery lectice
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary a ver penter i soues
Education							
	2021: 0 Pupil Places	2021: 0 Pupil Places	2021: 0 Pupil Places	2021: 0 Pupil Places	2021: 0 Pupil Places	2021: 157 Pupil Places (£1.9m)	There is current surplus provision thus across the Study Area the cost of infrastructure for new pupil places is minimal up until 2021 due
Primary School	2031: 0 Pupil Places	2031: 144 Pupil Places (£1.8m)	2031: 389 Pupil Places (£4.8m)	2031: 360 Pupil Places (£4.4m)	2031: 679 Pupil Places (£8.3m)	2031: 1,202 Pupil Places (£14.7m)	Reorganisation Review is due to published Spring 2009 where it is expected that the requirements for school places and existing surplus should have been adjusted and therefore be in a clearer position to plan for growth. It is likely much capacity will be taken as middle schools close and migration to a two tier system is begun.
Middle School	2021: 74 Pupil Places (£913k) 2031: 346 Pupil Places (£4.2m)	2021: 146 Pupil Places (£1.8m) 2031: 473 Pupil Places (£5.8m)	2021: 265 Pupil Places (£3.2m) 2031: 683 Pupil Places (£8.4m)	2021: 360 Pupil Places (£4.4m) 2031: 1,002 Pupil Places (£12.2m)	2021: 530 Pupil Places (£6.5m) 2031: 1,304 Pupil Places (£16m)	2021: 809 Pupil Places (£9.9m) 2031: 1,800 Pupil Places (£22.1m)	There is current surplus provision thus across the Study Area the cost of infrastructure for new pupil places is minimal up until 2021 due to existing capacity. As per primary schools the Schools Reorganisation review may remove some capacity, though it is expected some middle schools will become lower tier schools and will not close.
Secondary School	2021: 37 Pupil Places (£674k) 2031: 272 Pupil Places (£5.0m)	2021: 99 Pupil Places (£1.8m) 2031: 383 Pupil Places (£7.1m)	2021: 202 Pupil Places (£3.7m) 2031: 565 Pupil Places (£10.4m)	2021: 385 Pupil Places (£7.1m) 2031: 926 Pupil Places (£17.1m)	2021: 528 Pupil Places (£9.8m) 2031: 1,180 Pupil Places (£21.8m)	2021: 763 Pupil Places (£14.1m) 2031: 1,598 Pupil Places (£29.5m)	There is current surplus provision thus across the Study Area the cost of infrastructure for new pupil places is minimal up until 2021 due to existing capacity. Despite this there has been a recent requirement for a new secondary school site in Bury St Edmunds due to existing site constraints. As per other schools the Schools Reorganisation Review will provide a better understanding of school capacity. For all school provision collaboration with Suffolk County Schools is important in developing a strategy for housing growth.
Community Facili	ties						

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Infrastructure	Forest Heath			St Edmundsbury			-
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary & Ney Delivery issues
	2021: 703 sq m (£1.2m)	2021: 848 sq m (£1.4m)	2021: 1,086 sq m (£1.9m)	2021: 1,027 sq m (£1.8m)	2021: 1,238 sq m (£2.2m)	2021: 1,584 sq m (£2.8m)	There is currently reasonable provision of community facilities across Study Area.
Community Centres	2031: 1,249 (£2.2m)	2031: 1,505 sq m (£2.6m)	2031: 1,928 sq m (£3.4m)	2031: 1,823 sq m (£3.2m)	2031: 2,198 sq m (£3.8m)	2031: 2,813 sq m (4.9m)	Therefore NLP have adopted a standard ratio and applied it to future population forecasts and identified a requirement for 6 large community centres for high growth to 2031.
	2021: 346 sq m (£1m) 2031: 614 sq m	2021: 417 sq m (£1.25m) 2031: 740 sq m	2021: 534 (£1.6m) 2031: 948 sa m	2021: 505 sq m (£1.5m) 2031: 897 sq m	2021: 609 sq m (£1.8m) 2031: 1.081 sq	2021: 779 sq m (£2.3m) 2031: 1.383 sq	Standard ratio of 30 sq m per 1000 population has been applied. Suffolk County Council provides library services and developer contributions would need to be sought to
LIDIALES	(£1.8m)	(£2.2m)	(£2.8m)	(£2.7m)	m (£3.25m)	m (£4.15m)	support new development. Generally settlements need to be of a sufficient size (5,000+ population) to effectively support a library.
Leisure, Culture &	Indoor Sport						
Cinemas	Cinemas are provid Area and potentially Low Growth – 2021 Medium Growth – 2 Hich Growth – 2027	y beyond. y beyond. :: 0 New Seats - 20: :021: 0 New Seats - 20:	basis and have a lar 31: 431 New Seats 2031: 582 New Seats	ge catchment area, d ats	rawing visits from ac	ross the Study	There is currently surplus provision based on existing visitation rates in the Study Area, which will ensure sufficient provision to 2021. By 2031 there is small requirement. Costs for cinema provision do not fall on the public purse.
Theatres	Theatres are provid Area and potentially Low Growth – 2021 Medium Growth – 2 High Growth – 2023	y beyond. 1: 0 New Seats - 20: 2:01: 0 New Seats - 20: 1:11 New Seats - 20: 1:11 New Seats - 20:	basis and have a lar ₁ 31: 26 New Seats 2031: 50 New Seats)31: 90 New Seats	ge catchment area, d :s	rawing visits from ac	ross the Study	There is currently surplus provision based on existing visitation rates in the Study Area, which will ensure sufficient provision to 2021. By 2031 there is small requirement. Costs for theatre provision do not fall on the public purse.

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Infrastructure	Forest Heath			St Edmundsbury			Commentant & Koy Polynov Incore
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary & vey ventery issues
	2021: 149 sq m (£1.5m)	2021: 173 sq m (£1.7m)	2021: 214 sq m (£2.1m)	2021: 0 sq m	2021: 0 sq m	2021: 0 sq m	There are currently 12 swimming pools across Study Area which is sufficient to accommodate
	2031. 242 ed m	2031. 285 ed m	2031.357 54 m	2031: 0 sq m	2031: 0 sq m	2031: 0 sq m	further growth. St Edmundsbury is particularly well served with surplus in comparison to Sport
Swimming Pools	(£2.4m)	(£2.8m)	(£3.5m)				England's recommended standards, however, there is an emerging requirement in EHDC by
							2021. This could potentially be provided by the
							local authority or alternatively one of the private health and fitness providers, as part of a new
							commercial gym.
	2021: 6.3	2021: 7 Courts	2021: 8.1	2021: 0 Courts	2021: 0 Courts	2021: 0 Courts	St Edmundsbury is currently very well served for
	Courts (£4.2m)	(£4.6m)	Courts (£5.4m)				sports halls, although there is a requirement
				2031: 0 Courts	2031: 0 Courts	2031: 0 Courts	tor additional provision in Forest Heath in
	2031: 8.9 Courte /FE 0m)	2031: 10.1 Courts (f.G. 7m)	2031: 12.2 Courts (f8 1 m)				comparison with Sport England S recommended standards. Taken as whole the Study Area
Sports Halls							generally is well provided with only a small
							requirement equivalent for two 3 court sports
							halls at the high growth level by 2031. This
							requirement may be satisfied by bringing school facilities into community use.
	2021: 0 Bowls	2021: 0 Bowls	2021: 0 Bowls	2021: 0 Bowls	2021: 0 Bowls	2021: 0.1 Bowls	Both areas are currently very well served for
	Rinks	Rinks	Rinks	Rinks	Rinks	Rinks (£37k)	indoor bowls rinks in comparison with Sport
							England's recommended standard. There is
	2031: 0 Bowls	2031: 0 Bowls	2031: 0 Bowls	2031: 0.4 Bowls	2031: 0 .8	2031: 1.4 Bowls	only enough requirement for additional
Indoor Bowls	Rinks	Rinks	Rinks	Rinks (£98k)	Bowls Rinks	Rinks (£353k)	provision of rinks at the high growth level in St
					(£195k)		Edmundsbury by 2031, although other smaller
							requirements that do not total a whole new rink
							could use s106 funds to improve the quality of
							existing provision.

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Infrastructure	Forest Heath			St Edmundsbury			
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary & rey benvery issues
Retail & Key Serv	ices						
	2021: 888 sq m	2021: 1,070 sq m	2021: 1,371 sq m	2021: 1,369 sq m	2021: 1,651 sq m	2021: 2,113 sq m	Local convenience retail capacity is based on available expenditure assuming that 20% is spent on top-up shopping in local shops. This
	2031:1,577 sq m	2031: 1,900 sq m	2031: 2,434 sq m	2031: 2,432 sq m	2031: 2,931 sq m	2031: 3,751 sq m	gives additional requirements for convenience shops through growth, and new homes should ideally have a convenience shop within 800m
Convenience Retail							walking distance. These are generally provided on a commercial basis, although the local authority may wish to build/own units to lease
							to operators, to ensure good provision. A local convenience shop is typically 100-200 sq m
							giving an indication of the number of shops potentially required when set against the capacity.
	Key local services al ensure vital and viak walking distance in I	re a very important p ole neighbourhoods. line with urban desig	art of ensuring growth New development sh n guidance, particula	has local amenities ould ideally have a riv in more urban are	s to minimise the neo range of services with tas. Local services s	ed for travel and nin an 800m hould potentially	Costs of Key Services generally do not fall on the public purse and are brought forward on a commercial basis. The local authority may wish
Key Services	include a range such shopping function, a	n as, but not exclusion n newsagent, a haird	ely, a post office, a t essers, a chemist, a	bublic house, a laur	shop capable of prov nderette, a bookmake	iding a top-up ers and a café,	to bring forward provision themselves through ownership of local shopping parades or local
	restaurant or takeav and growth may part advocated that a ful. of any future update	vay. Inere Is a need cicularly help provide I audit of such key lo s to the retail and to	tor a critical mass to this in more rural set cal services across t wn centres studies.	o support such impor tlements. To underp he settlement hierar	tant services such a in development in ru chy is undertaken. T	s a post onice, ral areas it is his may form part	centres, though again this would be provided on a commercial basis.

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Infrastructure	Forest Heath			St Edmundsbury			
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary & rey benvery issues
Transport							
Road Network	The development c a development whi network. It is inher Our stakeholder co needed over the cc Transport upgrades Upgrades Upgrades Lodge, to A14 Junct replacemt Bury St Ec New Link one off of Traffic Cal In many of including: Station oc	of the road network to be are subsequently ently difficult to ident onsultation with Suffo burse of the study per it of the existing road r to rural road network mitigate the increase tion works at Newman ent junction 43. Jmunds Eastern Relie Roads in Bury St Edn Sudbury Road to the Iming measures in Ne f the rural areas cycle orde paths from Exn orde or the from Exn orde or the from Exn	support new growth c adopted, or Suffolk Cc ify the impact of growi Ik County Highways di Kounty Highways di idenhall to reduce con network or a new bypa a around Red Lodge or ad congestion from ea rket and Bury St Edmu of Road nunds potentially inclu nunds potentially inclu and south to th east; and a link to th ewmarket to prevent h e paths and pedestrial from and Maet Dow For	san fall on the devel ounty Council, in the ch on the required p d, however, identify a not identify costs. ngestion around the ss (although SCC hi alternatively an east stbound traffic. nds to accommodal ding: one to the Noi e east of Westley. eavy congestion as n paths are required awmarket; a duel us Mindohall: correl us	oper, in the case of e corse of the wider st rovision of new or up a number of key schr These schemes incl airbase. Potentially ave no specific plans stbound connection to the anticipated growth te anticipated growth th West bypassing Fi a short term measur I to link settlements a se path from Kentford aths in Haven Kentford	estate roads within rategic road grades to roads. emes that may be ude: including either currently) o A14 at Red , potentially a ornham All Saints; e. a key nodes i to Kennet	Road network improvements will generally fall on the public purse although some schemes that will be required to enable new development may be paid for through other funding streams than Council budgets. All development will have an impact on the road network, with most developments likely to require local junction improvements or new junctions, which should be secured through s106 agreements with the developers of individual sites. Development of the road network to support growth areas should be considered in collaboration with Suffolk County Council.
Public Transport	Similarly to the roa consultation with S course of the study Potential - Improved Imter-city c Cambridg Bus loop i which has Bus loop i which has Contributi	d network it is inhere buffolk County Highwa y period, though they for a dedicated bus r rail services from Bu commuter bus links ir e. This may include (in Kedington, which is a reasonably poor si thrent in Lakenheath on to rail improvemer us routes to Newmarl	antive difficult to identify as did, however, identi could not identify cos oute from eastern Bur ry St Edmunds to refle a Haverhill to encourag capital works on the A s currently outside the ervice due to its locati in Newmarket and tket Station from Exnin	k specific infrastruct iffy a number of key is. These schemes y St Edmunds expan ict likely increases i ge people to use alt 1307 to Cambridge main bus corridors on off of the main H Brandon to ensure g	ure requirements. O schemes that may b may include: nsion areas to centra n passenger number ematives to the car, entives to the car, and bus investment laverhill-Bury route. regular services from	ur stakeholder e needed over the l Bury St Edmunds. s from growth. particularly to in Wickhambrook the rail providers.	Public transport is provided on a commercial basis by the bus and rail companies. These may be heavily subsidised and, where routes are not profitable, public funding may need to be utilised to ensure continued service. One key element of public transport is creating enough critical mass to ensure public transport is viable and to help create demand to increase frequency of services. In this context some of the smaller settlements may need levels of growth sufficient to ensure viability for public transport. Development of public transport services to support growth areas should be considered in collaboration with Suffolk County Council and the public transport provider.

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Infrastructure	Forest Heath			St Edmundsbury			
Type	Low Growth	Medium Growth	High Growth	Low Growth	Medium Growth	High Growth	commentary & rey Denvery Issues
Affordable Housin	ba						
	2021: 1,670	2021: 2,013	2021: 2,576	2021: 2,784	2021: 3,356	2021: 4,296	Affordable housing targets in Forest Heath
	units (£77m)	units (£93m)	units (£118m)	units (£128m)	units (£154m)	units (£198m)	(35%) and St Edmundsbury (40%) may impose
							large costs on the provider part of which will
	2031: 2,965	2031: 3,574	2031: 4,575	2031: 4,944	2031: 5,960	2031: 7,628	come forward through the National Affordable
Affordable	units (£136m)	units (£164m)	units (£210m)	units (£227m)	units (£274m)	units (£350m)	Housing Programme (NAHP) (approximately
Housing							half) with the rest to be made up through RSL
							funding and s106 agreements. The Strategic
							Housing Market Assessment provides the
							necessary evidence to support the affordable
							housing needs.

Table 18 Infrastructure Requirements to 2021 and 2031

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- 7.20 Overall costs of infrastructure to support growth have been calculated based on a cost per dwelling of costs reasonably falling on the public purse. This includes costs such as provision of community sports facilities, hospital facilities, emergency services, community facilities and education, but does not include costs associated with GP surgeries, dentists, retail or commercial leisure facilities, which are all provided with costs falling on the operator.
- 7.21 Key utility requirements were scoped with operators and key constraints factored into the analysis in Section 5.0. Investment will be required, notably in hydrology and energy, but NLP were presented with no evidence that this provision was likely to have financing challenges that would act as a barrier to growth.

Infrastructure Type	Low Growth Cost to 2021	Medium Growth Cost to 2021	High Growth Cost to 2021
Green Infrastructure & Outdoor Sport	£35.1 million	£41 million	£51.3 million
Health	£31.7 million	£38 million	£49 million
Emergency Services	£4.9 million	£6 million	£7.6 million
Education	£13.1 million	£19.9 million	£32.8 million
Community Facilities	£5.5 million	£6.7 million	£8.6 million
Leisure, Culture & Indoor Sport	£5.7 million	£6.3 million	£7.9 million
Retail & Key Services	n/a	n/a	n/a
Transport	Overall	transport costs are not a	vailable
Cost Per Dwelling (excl. Affordable Housing)	£4,600	£4,700	£4,900
Affordable Housing	£205 million	£247 million	£316 million
Cost Per Dwelling	£14,450	£14,550	£14,700

Table 19 Overall Costs of Infrastructure to Support Growth to 2021 across the Study Area

7.22

To 2021 the overall cost of infrastructure falling on the public purse (excluding transport, where no costs were able to be identified in consultation with Suffolk County Highways department) is equivalent to between £14,450 and £14,700 per dwelling. The costs identified as per dwelling are across the housing unit numbers and therefore include affordable housing making an equal contribution to all infrastructure types (including affordable housing provision itself). A large proportion of the costs are associated with affordable housing provision, which means that St Edmundsbury is likely to face higher costs than that of Forest Heath, due to the higher affordable housing requirement. Other major costs will fall into the provision of green infrastructure (which may partly fall on developers if promoted as part of scheme), provision of hospitals, (potentially including pooling of funds for a replacement to West Suffolk Hospital in the long term) and education.

A potential cost of circa £14,500 per dwelling, which is likely to rise on account of the costs associated with transport infrastructure, illustrates the overarching costs of providing the infrastructure required to support housing in the two Local Authority areas.

Infrastructure Type	Low Growth Cost to 2031	Medium Growth Cost to 2031	High Growth Cost to 2031
Green Infrastructure & Outdoor Sport	£58.3 million	£69.2 million	£87.1 million
Health	£56.4 million	£68 million	£87 million
Emergency Services	£8.8 million	£10.6 million	£13.5 million
Education	£42.9 million	£60.8 million	£89.9 million
Community Facilities	£9.9 million	£11.9 million	£15.3 million
Leisure, Culture & Indoor Sport	£8.4 million	£9.7 million	£12 million
Retail & Key Services	n/a	n/a	n/a
Transport	Overall	transport costs are not a	vailable
Cost Per Dwelling (excl. Affordable Housing)	£8,900	£9,200	£9,500
Affordable Housing	£363 million	£438 million	£560 million
Cost Per Dwelling	£26,300	£26,600	£26,900

Table 20 Overall Costs of Infrastructure to Support Growth to 2031

To 2031 the overall cost of infrastructure falling on the public purse (excluding 7.24 transport, where no costs were able to be identified in consultation with Suffolk County Highways department) is equivalent to between £26,300 and £27,000 per dwelling. This is higher than the cost to 2021, which reflects the surplus infrastructure capacity which will be utilised to 2021. This is particularly attributed to existing capacity in schools, which is a major cost associated with growth. An analysis of the funding mechanisms available to bring forward the investment required is contained in Section 8.

- The additional costs faced to 2031 in comparison to 2021 highlights a major 7.25 tipping point in infrastructure in the Study Area associated with growth beyond 2021. In effect the infrastructure cost per dwelling for houses built between 2021 and 2031, compared with those built up until 2021, is disproportionately high. This reflects the major investment in infrastructure required to support growth beyond 2021.
- Whilst this analysis provides an overview of the total level of infrastructure 7.26 required to support housing growth over the study period, consideration needs to be given to how and when this is delivered in relation to the Opportunity Areas. The total quantum of infrastructure required will need to be geographically located to meet local needs where there are existing pressure points or gaps in provision. In consideration of how the levels of growth are to

be distributed across the Opportunity Areas identified, regard should be had to how development relates to infrastructure provision and how access to services can underpin a sustainable spatial pattern of growth. In some settlements, even where large levels of growth are not proposed, there may be existing deficits in social infrastructure provision which will need to be addressed.

Phasing Infrastructure and Marginal Costs

7.27

To investigate the phasing of infrastructure and to help formulate a baseline picture of the implications of infrastructure phasing to the potential levels of growth at each settlement, an infrastructure marginal impact assessment has been undertaken. This assessment builds upon the tipping point analysis undertaken, and illustrated in Appendix 5, to build a likely picture of when various infrastructure types will need to be brought forward in relation to the number of new units built, and particularly the marginal cost impact of these. This will allow Forest Heath and St Edmundsbury Council to secure a view on the levels of growth where the best 'economies of scale' in infrastructure provision exist in relation to phasing of requirements.

The analysis is undertaken on a settlement by settlement basis and assumes 7.28 that settlements are wholly contained for provision of the settlement specific infrastructure as identified in the tipping points analysis. This analysis does not seek to quantify phasing in terms of when in the study period infrastructure will need to come forward as this is dependent on build rates and the finalised growth strategy that will come forward through the LDF process. In this context the analysis is undertaken based on the infrastructure requirements at defined levels of housing growth (100, 250, 500, 1,000, 2,000 and 5,000 new homes) for each settlement. This enables the analysis of what impact different housing growth has on different settlements, although it is acknowledged that some settlements do not have the environmental capacity to accommodate the higher numbers of homes and, based on the capacity of our identified Opportunity Areas, these areas of analysis are identified in the tables, but are included for context and comparative value. Essentially these tables build upon the test capacities identified in Section 6 and identified within the broad physical range of potential capacity where infrastructure constraints limit potential, within, up to or over, cost infrastructure tipping points identified in the baseline section (Section 5). The most efficient scale of development for each settlement identified by these tables is summarised in the conclusions section giving a guide to development locations but recognising that the Councils will wish to adjust these recommendations on the basis of further studies being produced throughout the LDF process.

- 7.29 Based on the definitions set out in paragraph 2.15, the infrastructure required is split into two sections:
 - 'fundamental' and 'essential'; and
 - 'required'

- 7.30 This allows a distinction between those infrastructure requirements that are prerequisites and those that add to the liveability and quality of settlements but may not be absolute requirements.
- 7.31 It should be recognised that these do not take account of potential transport costs, which will flow from the more detailed work being undertaken by the County Council.
- 7.32 The full marginal cost impact analysis is included in Appendix 6

Marginal Costs of Additional Infrastructure in Forest Heath

- 7.33 In Forest Heath the settlements are split in terms of their geographic location and the infrastructure pressures in those areas which have created higher marginal costs associated with providing infrastructure at different levels of growth for different parts of the district. This is particularly highlighted by the additional costs that Mildenhall, West Row and Beck Row could potentially face in the funding of improvements to the road network around Mildenhall, potentially in the long term including a relief road/by-pass, although Suffolk County Council do not have any specific plan currently. This would relieve traffic around the whole airbase particularly through Mildenhall where junctions are very close to capacity. This has been taken into account through a Mildenhall transport improvement fund spread across all housing growth, despite likely capital costs coming early on in the growth period to underpin higher levels of growth in the long term.
- 7.34 The marginal costs are identified in Table 21 below. This table highlights the cost per new dwelling for the different levels of growth using a colour coding system to identify costs that are significantly above average (red), costs that are within a reasonable level (amber) and costs that offer the greatest marginal benefit (green). For each settlement housing growth levels that cannot be delivered within Opportunity Areas based on NLP's constraints analysis have been indicated in grey.

		New Homes	100	250	500	1,000	2,000	5,000
		Fundamental & Essential	£400	£400	£400	£1,400	£1,900	£2,000
New- market	Town	Required	£27,300	£22,000	£12,000	£7,200	£4,600	£2,800
		Total:	£27,700	£22,400	£12,400	£8,600	£6,500	£4,800
		Fundamental & Essential	£5,400	£5,400	£5,400	£20,200	£13,000	£10,200
Milden- hall	Town	Required	£22,000	£12,000	£7,800	£4,300	£3,600	£2,700
		Total:	£27,400	£17,400	£13,200	£24,500	£16,600	£12,900

		New Homes	100	250	500	1,000	2,000	5,000
		Fundamental & Essential	£22,000	£13,300	£6,900	£9,600	£11,100	£11,400
Brandon	Town	Required	£20,700	£16,600	£10,500	£6,700	£4,400	£3,000
		Total:	£42,700	£29,900	£17,400	£16,300	£15,500	£14,400
	Key	Fundamental & Essential	£11,400	£4,800	£3,700	£8,000	£5,000	£11,200
Laken- heath	Service Centre	Required	£20,700	£12,400	£7,100	£5,000	£3,900	£3,000
	Contro	Total:	£32,100	£17,200	£10,800	£13,000	£8,900	£14,200
	Kev	Fundamental & Essential	£5,900	£2,600	£3,600	£8,400	£5,700	£5,600
Red Lodge	Service	Required	£5,300	£5,400	£3,900	£4,300	£3,100	£2,500
	Contro	Total:	£11,200	£8,000	£7,500	£12,700	£8,800	£8,100
		Fundamental & Essential	£22,000	£14,000	£15,470	£11,000	£9,000	£9,900
Beck Row	Primary Village	Required	£15,000	£7,300	£7,200	£5,300	£3,800	£2,700
		Total:	£37,000	£21,300	£22,670	£16,300	£12,800	£12,600
		Fundamental & Essential	£400	£4,800	£2,600	£6,600	£4,000	£5,700
Kentford	Primary Village	Required	£5,900	£3,600	£4,000	£2,300	£2,600	£2,200
		Total:	£6,300	£8,400	£6,600	£8,900	£6,600	£7,900
		Fundamental & Essential	£5,850	£2,600	£3,800	£5,100	£3,600	£5,700
Exning	Primary Village	Required	£500	£500	£4,400	£2,700	£2,400	£1,900
		Total:	£6,350	£3,100	£8,200	£7,800	£6,000	£7,600
M/s st	Diam	Fundamental & Essential	£16,300	£9,800	£8,600	£10,600	£8,800	£10,800
Row	Village	Required	£2,900	£1,400	£1,400	£2,200	£2,100	£1,800
		Total:	£19,200	£11,200	£10,000	£12,800	£10,900	£12,600

Table 21 Marginal Costs of Required Infrastructure Provision per Dwelling – Source: NLP

7.35 Infrastructure costs for 'required' infrastructure types are generally high for the larger settlements reflecting current deficits in provision of outdoor sports infrastructure, which is a characteristic across the Study Area. This means that generally for the towns the higher levels of growth provide the most marginal benefit from infrastructure provision, which also reflects the fact that current critical infrastructure that has high associated costs, such as schools, are sufficiently well developed to support further growth before additional provision is required. Development in Mildenhall will particularly need to account for costs of providing a new Secondary School at the identified tipping point of circa 700 new homes, albeit taking account of the restructuring proposals.

- 7.36 The Key Service Centres differ slightly from each other. Lakenheath is identified as particularly needing an improved bus service and combined with a deficit in outdoor sports and dentists currently small amounts of growth will face greater costs, though as more homes are built there is greater marginal benefit, coming from the critical mass to support services that the higher population brings. Red Lodge as an area currently undergoing much development has a reasonably planned approach to infrastructure which means that the marginal costs are kept relatively low, however, the likely impact on rural roads means mitigation will need to be sought. An eastbound connection to the A14 is identified as being potentially prohibitively expensive and is not currently being considered as a viable solution. Therefore, alternative mitigation that is more viable should be sought, which may increase costs at Red Lodge.
- 7.37 Kentford, Exning and West Row can all accommodate reasonably small levels of housing growth within existing infrastructure, meaning that marginal benefit is most at 100-500 new homes. Beck Row would potentially require significant expenditure on health to rectify current deficits meaning the cost per dwelling of infrastructure is relatively high (although there may be limited demand with residents using private medical facilities on the RAF base or using facilities in Mildenhall, which has not been quantified). Figure 24 shows the average infrastructure costs per dwelling for the Towns, Key Service Centres and Primary Villages.



Fig 24 Cost per Dwelling of Infrastructure Provision in Forest Heath

- 7.38 This illustrates the infrastructure costs associated with developing different types of location in Forest Heath. At the lowest growth levels, costs are high for Towns (blue colours) but gradually reduce, with the most marginal benefit for towns occurring at the high growth scenarios. This perhaps supports the proposition that it is the towns that should support the most levels of growth. The Key Service Centres (red colours) experience low costs at small growth, which rise as key infrastructure is required before large levels of growth ensure the marginal benefit increases with costs per dwelling falling. This suggests that the Key Service Centres received most marginal benefit at either low or higher growth, but require significant infrastructure investment at medium levels, where they may not be a critical mass of infrastructure that needs to come forward to support more significant growth.
- 7.39 The Primary Villages (green colours) have relatively high initial costs reflecting current lack of services, such as GPs, and receive most marginal benefit at small to medium levels of growth once initial investment has been made. At high levels of growth in the Primary Villages it becomes necessary for major infrastructure works, such as new road networks and new schools, to come forward to support the greatly expanded population, suggesting that potentially these areas are not suited, in infrastructure terms, for much growth (i.e. beyond the identified tipping points for these 'costly' infrastructure types for each settlement), unless growth goes well beyond this to alter the nature of the settlement and justify costs through maximising the cost benefit per dwelling.

Marginal Costs of Additional Infrastructure in St Edmundsbury

- 7.40 In St Edmundsbury the two towns and the seven Key Service Centres identified in the Draft Core Strategy (December 2008) have very different profiles in terms of their infrastructure requirements and the marginal costs associated with providing infrastructure at different levels of growth. This has been particularly skewed by the large deficits in sports pitch and non-pitch provision in Bury St Edmunds and Haverhill, which significantly increase the upfront costs of 'required' infrastructure. In light of this requirement, additional provision has been phased across the number of new homes tested, as is likely if provision were to be brought forward.
- 7.41 The marginal costs are identified in Table 22. This table highlights the cost per new dwelling for the different levels of growth using a colour coding system to identify costs that are significantly above average (red), costs that are within a reasonable level (amber) against the average, and costs that offer the greatest marginal benefit (green). For each settlement housing growth levels that cannot be delivered within the identified Opportunity Areas (identified in Section 5.0) based on our constraints analysis have been indicated in grey.

		New Homes	100	250	500	1,000	2,000	5,000
		Fundamental & Essential	£400	£400	£400	£1,900	£12,400	£7,500
Bury St Edmunds	Town	Required	£20,000	£12,000	£10,300	£8,600	£7,600	£7,500
		Total:	£20,400	£12,400	£10,700	£10,500	£20,000	£15,100
		Fundamental & Essential	£50,000	£20,000	£10,000	£6,500	£11,500	£7,600
Haverhill	Town	Required	£32,000	£16,000	£12,000	£10,000	£8,000	£6,600
		Total:	£82,000	£36,000	£22,000	£16,500	£19,500	£14,200
	Key	Fundamental & Essential	£400	£12,000	£6,000	£4,000	£5,000	£10,000
Barrow	Service Centre	Required	£3,200	£1,500	£1,500	£2,000	£2,250	£2,000
	Contro	Total:	£3,600	£13,500	£7,500	£6,000	£7,250	£12,000
	Key	Fundamental & Essential	£6,000	£10,000	£5,000	£3,300	£4,500	£9,000
Clare	Service	Required	£500	£450	£2,400	£2,100	£2,200	£2,200
	oentre	Total:	£6,500	£10,450	£7,400	£5,400	£6,700	£11,200
	Kev	Fundamental & Essential	£5,900	£9,800	£5,100	£3,300	£4,600	£9,000
Ixworth	Service Centre	Required	£400	£400	£2,500	£2,200	£2,000	£2,000
	Contro	Total:	£6,300	£10,200	£7,600	£5,500	£6,600	£11,000
	Kev	Fundamental & Essential	£5,900	£9,800	£5,100	£6,300	£6,600	£10,000
Kedington	Service Centre	Required	£400	£400	£2,700	£2,300	£2,300	£2,000
	Contro	Total:	£6,300	£10,200	£7,800	£8,600	£8,900	£12,000
	Key	Fundamental & Essential	£18,400	£7,600	£6,200	£4,400	£5,900	£9,700
Risby	Service Centre	Required	£400	£400	£2,500	£1,750	£2,300	£2,300
	oonae	Total:	£18,800	£8,000	£8,700	£6,150	£8,200	£12,000
	Kev	Fundamental & Essential	£5,900	£2,600	£6,200	£3,300	£4,600	£8,900
Stanton	Service	Required	£500	£440	£440	£1,400	£2,300	£2,200
	Centre	Total:	£6,400	£3,040	£6,640	£4,700	£6,900	£11,100
	Key	Fundamental & Essential	£400	£2,600	£5,100	£2,600	£6,700	£9,800
Wickham- brook	Service	Required	£400	£440	£440	£1,700	£1,300	£1,700
	Sondo	Total:	£800	£3,040	£5,540	£4,300	£8,000	£11,500

Table 22 Marginal Costs of Required Infrastructure Provision per Dwelling – Source: NLP

7.42 The marginal costs of infrastructure highlight the levels of growth in each settlement that provide the maximum marginal cost/benefit from infrastructure

provision. In Bury St Edmunds up front costs for 'fundamental' and 'essential' infrastructure at the lower levels of growth is minimal, highlighting the existing infrastructure capacity of schools, health services and the transport network, however 'required' infrastructure is at its maximum cost/benefit at the higher levels of growth, illustrating that infrastructure provision to support growth in Bury St Edmunds achieves critical mass at higher levels of growth.

In Haverhill a current deficit in the provision of GP's ('essential' infrastructure, although there are planned improvements which will have an attendant cost) and a deficit in the provision of allotments and outdoor sports provision ('required infrastructures') means costs at the low growth scenarios are high. Growth and infrastructure provision in Haverhill is optimal at 1,000 homes or more. In the Key Service Centres 'required' infrastructure generally has good provision, though only small levels of growth in a number of the Key Service Centre's yield requirements for significant levels of investment in key infrastructure. High levels of growth in the Key Service Centres require more significant investment in 'fundamental' infrastructure, particularly the road network, although constraints make higher levels of housing growth unfeasible in most of these settlements. Figure 25 shows the average infrastructure costs for the two towns in comparison with the Key Service Centres in St Edmundsbury.



Fig 25 Cost per Dwelling of Infrastructure Provision in St Edmundsbury

7.44 This illustrates the infrastructure costs associated with developing different types of location in St Edmundsbury. Existing deficits in provision of outdoor sports facilities in Bury St Edmunds and health services in Haverhill mean lower growth costs per dwelling are high. Though this falls as growth increases, the

requirement for new schools increases the costs at a medium growth. At high growth levels the towns receive most marginal benefit, with costs per dwelling reasonably low, reflecting the existing network of infrastructure in the two towns. Notably, whilst total costs remain above those of the Key Service Centres, the costs associated with 'fundamental and essential' infrastructure for the Towns is lower at the higher growth scenario than Key Service Centres, reflecting the substantial infrastructure that would be required to support high levels of growth in the Key Service Centres.

7.45 The marginal costs for infrastructure at the Key Service Centres are generally greatest at reasonably small growth levels of circa 1,000 units. This underlines the importance of creating a critical mass of people that is sufficient to support services and ensure their provision is efficient, without tipping the balance to a point where a Key Service Centre becomes a Town and will require a much greater level of infrastructure provision. This balance should be a key consideration in distribution of growth within the spatial pattern of development, to reach St Edmundsbury's housing targets.

Consideration of Phasing and Marginal Costs

Locational Benefits

7.46 The analysis of phasing and the costs associated with provision of infrastructure at different levels of growth is a key consideration in the levels of growth that should come forward in each settlement. This analysis supports the policy proposition for locating higher levels of growth in the towns as it is likely that the most marginal benefit arises with higher levels of growth in the towns. However, consideration must also be given to the role growth can play in the rural areas.

Rural Growth

- 7.47 Key Service Centres need a critical mass of enough population to support services and, as identified in our tipping point's analysis, between 250-1,000 new homes in some of the Key Service Centres will help support their viability and ensure the smaller settlements can sustain their roles. It is acknowledged that this represents a significant level of growth for some settlements and this does not mean that smaller levels of growth cannot sustain shops and services where they are viable within the community they serve. This highlights the need to consider rural growth carefully and balance its sustainability benefits and drawbacks.
- 7.48 Going beyond 1,000-2,000 new homes will generally create thresholds beyond which significant investment is needed. Very small or no growth in the Key Service Centres (and particularly Primary Villages in Forest Heath) may mean services become unviable over time, as has occurred to many post offices in rural areas, and will increase the reliance of those settlements on other larger centres for services, with attendant travel and amenity implications.

7.49 This approach was highlighted in Matthew Taylor's report 'Living Working Countryside - The Taylor Review of Rural Economy and Affordable Housing'. The Taylor Review advocated that the characteristics of rural economies and rural demographics impact on the 'demand for local services, particularly schools, Post Offices and public transport, and so their overall viability'. It highlights that in both larger and smaller rural settlements growth can help to underpin rural economies and the viability of local shops. The Review also discusses the 'sustainability trap' whereby beneficial development may be stymied because the settlement is not considered sustainable in the first place, when in essence development may help to contribute towards sustainability, by underpinning the viability of shops, services and economies that may already exist or may be attracted to the area due to development. The Review states:

> 'Since we are not going to bulldoze our villages and start again, and people are going to continue to live in them, the key emphasis of the planning system (at all levels) needs to move away from asking "is this settlement sustainable?", to "will this development enhance or decrease the sustainability of this community – balancing social, economic and environmental concerns?"

- 7.50 Recommendations 1 and 2 of the Taylor Review relate to: creating a more coherent planning policy to reduce apparent conflicts between interpretations of sustainability; and clearly setting out the requirement to take account of the strands of sustainability in a balance way and to have a long term vision of the contribution that planning can make to enhancing sustainability, economically, socially and environmentally. These recommendations were well received by the Government in their response to The Review in March 2009, with a 'generally agree' summary response and highlighting the intention to 'rural proof' planning policy.
- 7.51 The provision of rural shops and services is not static, and as such will change over time. Consideration should particularly be given to secure sufficient growth in smaller settlements so that either existing services and rural economies can be sustained and enhanced, or where there are existing deficits to use growth as a catalyst for the provision of such shops and services.
- 7.52 This Study is one input to the process of looking at a spatial pattern of development and the allocation of sites should take consideration of all material factors, including the planning strategy for each local authority.

Costs, Funding and Delivery

- 8.1 The challenges of delivering the scale of growth outlined in the preceding sections are multiple, and include major decision-making in terms of spatial strategy, phasing, and masterplanning – many of these are matters for other parts of the LDF and planning process.
- 8.2 This section of the Study focuses on the other key challenge for housing growth – the funding and delivery of infrastructure needed to support growth, in what is referred to as a 'Delivery Toolkit'. In this case, the costs are potentially significant, circa £96-150m to 2021 and £185-305m for the period to 2031 excluding transportation and affordable housing, which has the potential to add significant further costs.
- In order for required and identified infrastructure to be delivered alongside housing growth, robust funding and delivery structures need to be in place.
 This section first looks at the appropriate funding mechanisms for government, local authorities, private or public and private partnerships.
- 8.4 Next, the current funding sources and delivery models for the different infrastructure types and scales of infrastructure are set out and analysed in terms of opportunities and risks.
- 8.5 This section then suggests the possible approaches to the existing and future role of developer contributions and emerging infrastructure funding mechanisms, including the potential role of the Community Infrastructure Levy (CIL) and rolling funds which finance sub regional strategic infrastructure.
- 8.6 To conclude, this section considers the coordination and management critically required to govern and manage the delivery of strategic and local infrastructure in light of potential local government reorganisation

Costs of Infrastructure

8.7 The costs identified in the preceding analysis for infrastructure are summarised below:

Infractructure Type	Cost to 2021		2008 - 2031			
initastructure Type	(RSS)	Low Growth	Medium Growth	High Growth		
Green Infrastructure & Outdoor Sport	£35.1m	£58.30m	£69.20m	£87.10m		
Health	£31.7m	£56.40m	£68m	£87m		
Emergency Services	£4.9m	£8.80m	£10.60m	£13.50m		
Education	£13.1m	£42.90m	£60.80m	£89.90m		
Community Facilities	£5.5m	£9.90m	£11.90m	£15.30m		
Leisure, Culture & Indoor Sport	£5.7m	£8.40m	£9.70m	£12m		
Retail & Key Services		N/A				
Transport		Overall transport costs are not available				
Total (excl. Affordable Housing)	£96m	£184.70m	£230.20m	£304.80m		
Cost Per Dwelling excl. Affordable Housing	£4,600	£8,900	£9,200	£9,500		
Affordable Housing	£205m	£363m	£438m	£560m		
Cost Per Dwelling (incl. affordable housing)	£14,450	£26,300	£26,600	£26,900		

Table 23Infrastructure Costs across the Study Area

8.8

These costs should be regarded as a starting point for discussion on the implications of housing growth across the two authorities. This is because there are a number of uncertainties, highlighted in the Study, and summarised below:

- In many cases, these estimates will not include the investment that is required to address underlying investment requirements or restructuring. For example, the costs for education (which are relatively low at just ± 13.1 m in SEBC and nil in FHDC) are based on assumptions around the use of existing capacity (there is surplus capacity in a number of schools in the two districts, especially Forest Heath) and do not take account of the restructuring that is currently underway (the move from three to two tier)
- Importantly, the costs above exclude transport, which is generally among the most significant costs to be born by development. The County Council has just commenced a study to investigate the transport issues associated with growth and the outputs of this and the associated costs will need to be built into future infrastructure planning.

- The costs do not reflect the distribution of housing numbers within the districts or the types of infrastructure that might be required in one location and not another
- Costs are estimates based on benchmark unit costs and not location specific or based on precise requirements that might be needed on particular locations. More detailed planning and feasibility studies will be needed to refine these.
- Costs are expressed at 2008 prices. Infrastructure costs can change markedly, including as a result in different requirements for specification, and construction cost inflation. Thus, something delivered in 2021 may cost more (or possibly less) than something to be delivered in 2010.
- The above figures should therefore be treated as a starting point.

What these costs do show is that it is the post 2021 period where the costs per dwelling are significantly increased (even averaged out over the whole 2008-2031 period). This potentially represents an overall infrastructure 'tipping point' for the Study Area that requires careful consideration.

Infrastructure Prioritisation and Phasing

- 8.10 As discussed earlier in the report, there will be a need, as the spatial strategy for growth is refined through the LDF process, for a framework to support the local planning authorities and other stakeholders in prioritising the provision of infrastructure and making, where appropriate, the trade-offs and choices about what is provided and when, taking account of emerging picture on viability, phasing, and funding. This is particularly relevant for the so-called 'Essential' and 'Required' infrastructure types.
- 8.11 In advance of having a more detailed phasing programme for development (based upon the identification of sites for development), it would be inappropriate to determine the approach to phasing of infrastructure. Cambridgeshire Horizons, for example, did not identify its Long Term Delivery Plan and total costs and phasing judgements until it had established its key sites for development.

Funding and Delivery Mechanisms

8.12 Infrastructure requirements associated with growth, alongside other underlying investment, may have access to various funding streams. In general terms, the funding sources, like most public sector funding, is constrained by Spending Review periods meaning that it is difficult to have certainty on the ability to secure resources for long term investment. Notwithstanding, it should be recognised that infrastructure costs do not fall exclusively on development. Some of the increased demand for infrastructure flows from existing demographic dynamics and investment plans, and the Government's existing and future capital programme will therefore have significant potential. Although it has not been possible to quantify this, it should be taken into account in future funding and delivery plans.

8.9

- 8.13 Although St Edmundsbury is a designated Growth Area these funds (GAF) are for the short term only and therefore only cover the period 2008-2011. Beyond this it is unknown whether this funding will be available in subsequent allocation rounds. It should also be noted that emerging ideas for funding such as Tax Increment Financing/Accelerated Development Zones, alongside policy proposals relating to retention of local Council Tax revenue could play a role in supporting future infrastructure delivery but are not currently available for consideration in this study.
- 8.14 The following paragraphs outline the headline delivery issues for different types of infrastructure.

Green Infrastructure & Outdoor Sport

- 8.15 The need for green infrastructure and outdoor sport facilities will increase with a growing population and the growing multi-generational demand for increased participation in sport and recreation.
- 8.16 Green infrastructure, including open space and recreation areas in new developments are typically funded through developer contributions. With ever changing trends in sport and fitness activity, it can be difficult to predict with certainty the future needs and the form this infrastructure will and should take.
- 8.17 In terms of service, there has been a recent trend which is likely to continue whereby local authorities commission services rather than being the main supplier.

Lead Agencies	Sport England EEDA SEBC / FHDC
	Suffolk County Council
	Mixed market including public, private and third sector provision
Infrastructure Issues	Requirement for new and expanded facilities
	Funding pressures in local government as a result of Comprehensive Spending Review
	Developer Contributions
	Prudential Borrowing
	PPP Joint Venture
Funding Courses	Asset Disposal
Funding Sources	Sport England
	Suffolk County Council
	Lottery
	Department for Culture, Media and Sport
Daliyany Madala	Public Sector Joint Ventures
	Local Authority Led
Derivery woulds	Trust Structures
	PPP models, including PFI and joint ventures

Health

- 8.18 With an ageing population and changing demographic, future healthcare will need to reflect the needs of a changing society. The restructuring of these services includes a shift to greater provision in primary care located in community settings, integrated with social care services.
- 8.19 The provision of future healthcare in the Study Area will be primarily funded by the Department of Health, which allocates funding to primary care trusts (PCTs). This funding is based on a formula that calculates the needs of a given population.

Lood Agonaiaa	PCT's
Leau Agencies	Hospital Trusts
	Funding required facilities to accommodate housing growth
	The LAA and Strategic Commissioning environment
Infrastructure Issues	Funding pressures of a changing demographic
	Funding of developments in medical treatment, demand for drugs and staffing
	PFI
	PCT
Funding Sources	Private sector - GP Practices
Funding Sources	Third Sector
	Restructuring of property assets
	Developer contributions
Delivery Models	PFI
	LIFT
	Commissioning

Emergency Services

- 8.20 The Suffolk Fire and Rescue Service, Suffolk Police Authority and Suffolk Joint Emergency Planning Unit are the emergency service providers in the Study Area. Although separate services, they aim to deliver an integrated service.
- 8.21 The Suffolk Police Authority agrees a budget annually with the Suffolk Constabulary and sets its priorities and targets for policing each year in line with the national policing plan as well as local strategies and needs.
- 8.22 The Suffolk Fire and Rescue Service, Service Plan (2008 2009) sets out its major projects for 08/09 period which includes working with the County Council to deliver the 'Securing the Future' project which will create a new structure and support system in the County for this and other services. Additionally, a new National Framework document for Fire and Rescue Services was issued by CLG in May 2008 setting out the Government's objectives and expectations for a modernised fire and rescue service.

Lead Agencies	Suffolk Fire and Rescue Service		
Leau Agencies	Suffork Fonce Authonity		
	Suttoik Joint Emergency Planning Unit		
	Aligning Emergency Business Strategies with emerging / adopted growth strategy		
Infrastructure Issues	Growing delivery pressures for emergency services to address counterterrorism, and serious organised crime.		
	The need for enhanced collaborative back office activities across forces		
	Developer Contributions		
Funding Sources	Third Sector		
	Range of different PPP models, including both PFI and joint ventures		
Delivery Models	Public Sector Joint Ventures		

Education

- 8.23 As Suffolk is currently undergoing a School Organisation Review which involves the proposal of significant changes (around the shift from three to two-tier), it is an opportune time for the long-term future of education across the Study Area to be considered alongside housing growth.
- 8.24 Discussion with SCC's education departments indicates that SCC is examining the Building Schools for the Future Programme (BSF) as a key element to aid in funding changes as a part of the reorganisation of schools in Suffolk. However, SCC are only considering BSF for the first wave of schools in the overall transition which only includes schools in the south and east of the county including part of the south of SEBC covering Haverhill.
- 8.25 As a number of middle schools throughout the County are likely to close as a result of the restructuring, the second stage of the School Organisation Review will need to consider how this shift in provision can be accommodated elsewhere through forms of entry. Discussions indicated that although in some cases this may mean the closure of middle schools and the expansion of first schools to become Primary schools, and High Schools to become Secondary Schools, there will be locations where different shifts may take place.
- 8.26 This could include, for example, a middle school site being redeveloped to provide a primary school and the first school site being used for another purpose. It may involve middle school sites providing other educational services (e.g. off-shoots of secondary or further education). Any of this could involve more complicated approaches to funding and delivery, including the potential use of site value from surplus land and buildings, and the adoption of further PPP models.

Lead Agencies	Suffolk County Council		
	Learning and Skills Council		
Infractructure Iccuse	Ongoing review of education provision in light of growth and existing facilities.		
Infrastructure issues	Investment needed in existing school and further education infrastructure.		
	BSF		
Funding Sources	DfES funding		
	Private Sector sponsorship		
	Developer Contributions		
	Third Sector (including faith organisations)		
Delivery Models	BSF is the funding, but a Local Education Partnership (LEP) is a delivery model that allows local authorities 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.		
	Investment from faith-based school, Academy school routes, independent bodies / trusts or through the LEA.		

Community Facilities

- 8.27 With local authorities struggling to maintain their current provision of libraries, without considering creating increased provision, there is a need to establish innovative funding tools and partnerships to deliver community facilities which will form an essential part of civic life in the Study Area for the plan period and beyond.
- 8.28 Determining the location for future need of community facilities will enable the local authority to ensure funding will be provided either through developer contributions which is the most likely source of funding or through any of the potential sources set out below. The determination of existing deficiencies in community facility provision will also need to be assessed and programmed for delivery.

8.29

Lead Agencies	Suffolk County Council SEBC / FHDC		
	Other agencies (for shared / community hubs)		
	New facilities will need to cater for growth in new developments		
	Funding pressures of future financial savings		
Infrastructure Issues	Capturing appropriate development value for funding		
	Existing community facilities within existing settlements will need to be enhanced		
	Developer Contributions		
	Third Sector (Trusts and Foundations)		
Funding Sourcos	DCMS		
Funding Sources	Lottery		
	Sponsorship		
	Prudential Borrowing		
Delivery Medale	Public Sector Joint Ventures		
	Local Authority Led		
Delivery woulds	Trust Structures		
	PPP models, including PFI and joint ventures		

Leisure, Culture & Indoor Sport

- 8.30 Nationally there is a backlog of investment in local authority sport and leisure facilities of circa £4.5 billion.
- 8.31 With Government funding concentrated on delivering sports and leisure facilitates for the 2012 London Olympics, there are significant constraints in the current grant regimes for areas not hosting the Olympic games or linked activities.
- 8.32 With this lack of dedicated national capital investment and a limited amount of PFI credits, local authorities are required to work more effectively and efficiently with partners to deliver these important infrastructure types that help ensure a high 'quality of life' across the Study Area. There is a particular issue for the Study Area, where much of the identified 'required infrastructure' costs that are front loaded for many settlements are a function of addressing this backlog.

Lead Agencies	Sport England EEDA SEBC / FHDC Suffolk County Council	
Infrastructure Issues	New facilities will need to cater for growth in new developments Funding pressures of future financial savings Capturing appropriate development value for funding Existing community facilities within existing settlements will need to be enhanced	
Funding Sources	Developer Contributions Prudential Borrowing Private Sector Asset Disposal Sport England Suffolk County Council Lottery Department for Culture, Media and Sport initiatives	
Delivery Models	odels Public Sector Joint Ventures Local Authority Led Trust Structures PPP models, including PFI and joint ventures	

Retail & Key Services

- 8.33 The delivery of retail and key service infrastructure is essential to the vitality and viability of towns throughout the Study Area. In determining retail need and potential location, it is essential to consider and deliver key services alongside retail uses.
- 8.34 The provision of retail and key services are normally provided for by the market, with the local authorities setting the overall retail and hierarchy strategy. However, there are opportunities for local authorities to enter into partnership with developers to help deliver regeneration and more sustainable patterns of development such as land exchanges, various public-private partnership models as well as the use compulsory purchase order (CPO) to assist with site assembly.

Lead Agencies	SEBC FHDC SCC
Infrastructure Issues	Ensuring retail is phased appropriately alongside housing growth Forecasting demand Delivery of appropriate level and type of retail to serve existing and new housing developments
Funding Sources	Developer Funded Land Exchange
Delivery Models	Privately Funded PPP Models CPO

Transport

- 8.35 Transport funding was originally anticipated to be an infrastructure sector where more innovative models might be applied. Transport 2010, issued by DfT, was anticipated to increase predictability of funding and planning, including the use of road user (e.g. congestion) charging to fund improvements. However, high profile failures to secure public support in Edinburgh and Manchester, and the reversal of the West London Congestion Charge Zone have stymied growth in that direction.
- 8.36 Clearly identified sources include the Community Infrastructure Fund (CIF) and Local Transport Plan.
- 8.37 The Housing Green Paper (July 2007) announced a £300m Community Infrastructure Fund available for transport schemes to support Growth Areas, Growth Points and Eco-towns. The CIF is designed to complement mainstream transport funding, linking the provision of funding for transport infrastructure to the delivery of housing. The CIF is designed to unlock large housing development sites, to enable housing development to move forward in growth areas.
- Bids for CIF were welcomed from designated growth areas in the East of England including St Edmundsbury. St Edmundsbury submitted to DfT for North-West Haverhill Relief Road for £6.5 million, however, the scheme was not determined to be a regional priority. A bid for the Tayfen Corridor Urban Traffic Management and Control (UTMC) System of £1.43 million which would have helped fund improvements to the access arrangements around Station Hill and Tayfen Road areas was not chosen as its impact on supporting housing for the cost were not considered a viable option.
- 8.39 Transport Block Allocations are made to implement projects below £5m that are set out in Local Transport Plans.

8.40

In addition to funding for major transport schemes, funding for improvements to the wider public realm can be sought through developer contributions. Alternative funding sources for public realm improvements could include a Business Improvement District (BID) whereby businesses in an area elect to pay an additional tax (e.g. a percentage based levy against their rateable value) to fund improvements to the areas public realm. If agreed by the businesses this could be a viable option in the Study Area's town centres with Bury St Edmunds Town Centre Management currently exploring possibilities, with a ballot anticipated in early 2010.

	Local Authorities / County Council	
Lead Agencies	DfT	
	Network Rail	
	Highways Agency	
	Upfront funding to deliver infrastructure to enable development	
	Underlying improvements in highways to address localised	
Infrastructure Issues	congestion and road safety	
	Improvements to public transport	
	Improvements to public realm	
	Local Transport Plan	
	CIF	
	DfT Major Schemes	
Funding Sources	Network Rail	
	Developer Contributions	
	Revenue from parking/road user charging	
	BID Levy	
Delivery Models	Range of PPP models for delivering infrastructure schemes on top direct grant. Examples, such as street lighting PFIs, may have benefits in enabling up-front funding of early phase infrastructure.	

Utilities

8.41 Asset Management Plans (AMPs) are submitted by utility companies to their regulators. For example, Anglian Water submits its AMP to OFWAT for its development commitments for the next five years. The coordination of utility AMPs and housing growth strategies is crucial in ensuring that utilities are planned alongside the LDF.

Lead Agencies	Suffolk County Council National Grid All major utility providers		
Infrastructure Issues	Lead in times for certain infrastructure types and cash flow issues, including uncertainty of take-up Emergence of higher environmental standards, increasing the specification of service delivery		
Funding Sources	Developer Contributions Private Sector / Utility Providers PFI Credits (Waste) Customers		
Delivery Models	Rolling Fund Developer – Delivered PFI / PPP Models		

Affordable Housing

8.42 The funding of affordable housing will come principally from a mixture of National Affordable Housing Programme (NAHP) funding from the Homes and Communities Agency (HCA) allocated according to regional allocations; RSL investment (generally based on debt securitised against its asset base), and developer contributions (in the form of land and direct contributions).

8.43 The impact of affordable housing levels is also that it reduces the number of private homes built on a given site and hence the gross development value available to support developer contributions.

Lead Agencies	Housing Corporation SEBC / FHDC (Strategic Housing)
Infrastructure Issues	Availability of NAHP Funding Funding to deliver affordable housing on non-strategic sites Ensuring adequate funding is secured through Section 106 agreements
Funding Sources	Developer Contributions National Affordable Housing Programme RSL resources / borrowing
Delivery Models	RSL Development Joint Venture with private developers

8.44 Affordable housing, according to PPS 3

"includes social rented and intermediate housing, provided to specified households whose needs are not met by the market".

8.45 Forest Heath's adopted Local Plan affordable housing policies have been superseded by an interim statement that reflects national and regional guidance whereby planning decisions will have regard to the 15 dwelling threshold set out in PPS 3 and the percentage of required affordable housing provision at or above this threshold will be 35%. FHDC's emerging Core Strategy suggests a requirement 35% affordable housing in new developments in the towns and key service centres, with affordable housing contributions required in all proposals of five dwellings and above.

- 8.46 St Edmundsbury's affordable housing policies in the Replacement Local Plan set a threshold for providing affordable housing and introduce site area thresholds depending on the location of the site. SEBC's emerging Core Strategy provides alternatives to this policy in order to deliver more affordable housing than has been achieved recently.
- 8.47 Policy H3 of the SEBC Replacement Local Plan sets a 40% affordable housing requirement on sites of: 0.5 hectares and above or 15 dwellings or more in settlements of 3,000 population and above; sites of 0.17 hectares and above or five dwellings or more, in settlements, of less than 3,000.
- 8.48 SEBC's Core Strategy (Preferred Options November 2008) **suggests** the following affordable housing policies:
 - Bury St Edmunds and Haverhill:
 - 40% on sites of 0.5 and above or 15 dwellings or more;
 - 30% on sites between 0.3 and 0.5 hectares or between 10 and 14 dwellings;
 - 20% on sites between 0.17 and 0.3 hectares or between 5 and 9 dwellings
 - Other Settlements:
 - 40% on sites of 0.17 hectares and above or 5 dwellings.
- 8.49 Utilising the two authorities' emerging LDF affordable housing policies, it is possible to make a calculation of the affordable housing units to be built under the low, medium and high levels for the periods of 2008 2021, 2021 2031 and 2008 2031. For FHDC, 35 % affordable housing is assumed for the growth figures set out earlier in this report. For SEBC 40% affordable housing is assumed. Clearly, the precise requirements for affordable housing will need to be tested and will be subject to the findings of the SHMA and take account of an assessment of affordable housing viability, in line with PPS3.
- To arrive at a cost for affordable housing given these growth assumptions, NLP has assumed that the NAHP will fund 50% of the affordable housing through grants. The other 50% is assumed to be funded by RSLs and Section 106 Agreements. For the purpose of this Study NLP has assumed that RSLs and Section 106 Agreements will each split the residual cost; (i.e. each taking 25% of the total build cost). Recent work by the Housing Corporation (now HCA) has benchmarked the costs of social rented and low cost housing in the East of England of an average total build cost per unit of £80,000. With the requirement

to meet the Code for Sustainable Homes Level 3 minimum requirements and the high spec this entails, we have calculated an additional 15% onto this resulting in an average build cost per unit of £92,000.

8.51 The implications of this are set out below.

	Low	Medium	High
2008 - 2021	1,670	2,013	2,576
2021 - 2031	1,295	1,561	1,999
Total	2,965	3,574	4,575
Estimated S106 Costs 2008 - 2031	£68.2m	£82.2m	£105.2m

Table 24 Forest Heath Affordable Housing Requirements

	Low	Medium	High
2008 - 2021	2,784	3,356	4,296
2021 - 2031	2,160	2,604	3,332
Total	4,944	5,960	7,628
Estimated S106 Costs 2008 - 2031	£113.7m	£137.1m	£175.4m

 Table 25
 St Edmundsbury Affordable Housing Requirements

8.52 There is a real debate underway as to the appropriateness of the current delivery model for affordable housing in light of the fall in house prices and land values, and both LPA's will need to monitor the situation going forward.

Economic Development

- 8.53 Economic development activities are currently provided by the local authorities, including the County Council and a range of other organisations. Activities include the following:
 - MENTA An organisation to help businesses start and grow, improve their performance and encourage their potential through advice, workshops and network opportunities. It runs two business centres; Bury St Edmunds and Haverhill, which provide 49 small business units.
 - Business Link Free advice through a team of business advisers helping business on a one-to-one basis analyse needs and develop plans of action. They have an office in Bury St Edmunds, but also work on-site.

- Choose Suffolk Inward investment agency for the county run by the Suffolk Development Agency. They provide information on premises for firms looking to expand or relocate in Suffolk, as well as providing economic and business information for all Suffolk companies.
- Foundation East A not for profit organisation that lends money to new businesses, existing business, charities and social enterprises that cannot get a loan from a bank or need additional funds to match bank lending.
- 8.54 There is no evidence around the current effectiveness of these agencies or proposals for change. The output of the Employment Land Review and any wider economic strategy review may result in evolution of the current approach to business support and economic development, but for the purposes of this Study, it is considered that there is unlikely to be a need to provide more business support initiatives in the period to 2021, but to grow the existing services in line with demand, subject to the revenue and grant resources of the local authorities and agencies, in liaison with EEDA. This may need to be reassessed following possible local government reorganisation, to analyse whether gaps have occurred in the provision of such a network of business support agencies.

Capital and Revenue Costs of Providing Identified Infrastructure

- 8.55 The Study has principally identified the capital costs of infrastructure. In terms of revenue costs, it is more difficult. This is because, firstly, revenue costs for different infrastructure varies enormously from area to area, and depends on the operational model applied, as well as the challenges of unpicking different accounting treatments (e.g. around how centralised costs are treated etc). Secondly, the bulk of revenue costs will be met by the local authorities or existing providers based on the application of funding allocations. For this reason, it is not considered appropriate to seek developer or specific funding for the revenue costs associated with many types of infrastructure (e.g. schools, etc)
- 8.56 However, revenue costs can be relevant to developer contribution negotiations where particular type of infrastructure (typically strategic open space/public realm) are considered to give rise to particular management and maintenance costs that could not be absorbed through existing local authority revenue streams. Here, a typical model is to transfer the facility over to either the local authority or some type of management body or Trust with a commuted sum/endowment that 'capitalises' the revenue cost for a set period, to provide the basis for its ongoing management. The precise quantum is difficult to estimate centrally, and will depend on precise specification, and negotiations between the developer, local authority, and management body.

Developer Contributions

8.57 The use of developer contributions will obviously form a crucial component to funding infrastructure for growth in the Study Area. The current and future

means by which the local authorities obtain contributions from developers to fund identified infrastructure is considered below.

Section 106 Agreements

- 8.58 Currently Section 106 agreements are being used in the Study Area as the lone mechanism for developer contributions. These contributions must relate to the development itself and do not fund wider infrastructure projects such as strategic transport projects and other identified infrastructure requirements.
- 8.59 The current policy position in respect of developer contributions is the use of Suffolk County's Supplementary Planning Guidance Relating to Section 106 Obligations adopted in 1999 by both local authorities and the Obligations and Circular 05/2005 which was published by the Government in July 2005.
- 8.60 Through NLP discussions with numerous stakeholders including statutory infrastructure providers, it is apparent that the current mechanism and policy of using Section 106 agreements in the Study Area can be improved. Agencies such as the Highways Agency report that they have been unable to regularly secure required developer contributions through Section 106 agreements.
- An example of an area for improvement in policy relates to education, whereby the current Section 106 SPG only requires developer contributions for education provision on residential development proposals of 15 or more dwellings. Unique to the East of England, affordable housing is exempt from developer contributions in the County's SPG even though more pupils are now coming from affordable housing. This was identified as another issue for schools receiving appropriate levels of funding from developers.
- 8.62 The Housing Corporation (now HCA) on the other hand has been a vocal advocate of using Section 106 agreements to fund necessary affordable housing as part of new developments.
- 8.63 Section 106 agreements clearly still have a useful, if not always integrated, function in securing funding for new developments. There are a number of issues that need to be addressed however in taking Section 106 agreements forward to ensure adequate infrastructure funding at the local and sub regional level. These are:
 - A common failure to establish requirements with sufficient clarity at an early enough stage to enable developers to plan their developments accordingly;
 - 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;

- Difficulties of establishing a shared approach to pooling contributions to pay for sub-regional infrastructure;
- The difficulty in estimating the values of a development as a means to establishing the amount it can contribute to Section 106 agreements, specifically to infrastructure requirements.
- 8.64 In order to address the above issues and to ensure infrastructure requirements for new developments are realised through Section 106 agreements, a planning obligations SPD as part of the LDF suite of documents is recommended for both local authorities. Depending on delivery and governance arrangements, a joint LDD should be considered and should obviously be linked to other LDDs.
- 8.65 There is also a need to ensure there are adequate contributions made to managing developer contributions and possibly top slice any S106 contributions to fund a S106 officer position.

Community Infrastructure Levy (CIL)

- 8.66 CIL is a new charge that will be discretionary for local authorities (LAs) to choose to introduce but mandatory in its application to all qualifying development proposals once a charging scheme has been implemented in a LA area. The CIL will then be payable on most types of development, with the proceeds from the levy being used to help fund (usually) previously identified local and sub-regional infrastructure needed to support new development in the area.
- 8.67 Regulations to introduce the Community Infrastructure Levy (CIL) will not be finalised before Spring 2010, it has emerged. The CLG is looking to consult on draft regulations in the summer 2009 (now expected to be delayed further) but the powers will not come in until April 2010 at the earliest.
- 8.68 Currently, it is unclear whether CIL will fill the infrastructure funding gap, assuming one exists, in light of strategic and local infrastructure requirements. The detailed design of CIL is on-going with stakeholders.
- 8.69 Despite the uncertainty around its implementation detail it is clear that authorities need to anticipate and prepare for its formalisation. In doing so there are a number of issues for local authorities planning to utilise CIL to consider, prior to adopting a CIL approach to securing developer contributions. These are notably around developing a robust evidence base and mechanism for:
 - Determining infrastructure need
 - Linking CIL with Development Plan Documents
 - Delivery of infrastructure provision
 - Cross-boundary working where appropriate

- Where CIL will be operating across local authority boundaries, putting in place the appropriate mechanisms for governance of CIL receipts and investment:
- Alignment of CIL with infrastructure need
- Prioritising Spending who decides?
- Linking to other infrastructure funding and financing mechanisms (e.g. Regional Infrastructure Funds / Rolling Funds)
- 8.70 The local authorities will need to coordinate these multiple strands of work, whilst managing the delicate balance with viability, particularly in the downturn, whilst ensuring uplift is captured as the market recovers.
- 8.71 A standardised 'roof tax' (or tariff) mechanism whereby developers pay, for instance, £10,000 per home, as a developer contribution to fund required infrastructure has been utilised in Milton Keynes to fill the gap of infrastructure funding required for the city's growth. However, there has been criticism of this standardised tariff approach as it does not reflect differing land values across a sub region or local authority area, and in Milton Keynes it is also, in effect, underwritten by English Partnerships (now HCA) funds to up-front fund infrastructure.
- 8.72 In this context, a variable tariff, applied to different locations and site sizes may be appropriate, subject to detailed viability testing.
- 8.73 The use of a central resource to fund up-front is a model that is being explored further through so-called Infrastructure Funds and Rolling Funds being considered by RDAs including EEDA, SEEDA, SWRDA, AWM and by SPVs in Growth Areas. Such funds use public sector investment to fund investment in up-front infrastructure and then recycle subsequent receipts from either land sales or S106/CIL.

How much can development value contribute to infrastructure costs?

8.74 This question has dogged the land use planning system since its inception in 1947. The ultimate ability of development to make a contribution to meet infrastructure costs is a function of the complex 'balance sheet' of development, which can be summarised below:



8.75 The above framework, which should be applied in considering affordable housing viability, drawing on SHMA data, and engagement with developers and market information, is not applied as part of this Study.

- 8.76 However, in order to arrive at a high level estimate of the potential quantum of development value that might contribute to the costs of infrastructure, NLP have applied three broad tariff rates to give a flavour to the scale and range of receipts. This is done without reference to viability tests, or site specific issues, and should not be taken to imply what the rate should be. Tariff rates of £10,000, £15,000 and £20,000 were applied against market housing (i.e. total requirement net of affordable provision) to be delivered under low, medium and high growth rates as set out earlier in this report.
- 8.77 Under a 'High' level of growth for the 2008 2031 period, FHDC could potentially secure between £85 and £170 million if the average CIL rate was between £10,000 and £20,000 respectively.

Level of Growth	Low			Med			High		
CIL Rate	10 K	15 K	20 K	10 K	15 K	20 K	10 K	15 K	20 K
2008 - 2021	£31.0	£46.5	£62.0	£37.4	£56.1	£74.8	£47.8	£71.8	£95.7
2021 - 2031	£24.1	£36.1	£48.1	£29.0	£43.5	£58.0	£37.1	£55.7	£74.2
Total (Millions)	£55.1	£82.6	£110.1	£66.4	£99.5	£132.7	£85.0	£127.4	£170

Table 26 Forest Heath Developer Contribution Rates - Numbers do not add due to rounding.

8.78 Under a 'High' level of growth for the 2008 – 2031 period, SEBC could potentially require from developers between £114.4 and £228.8 million if the average CIL rate per dwelling was between £10,000 and £20,000 respectively.

Level of Growth	Low			Med			High		
CIL Rate	10 K	15 K	20 K	10 K	15 K	20 K	10 K	15 K	20 K
2008 - 2021	£41.8	£62.6	£83.5	£50.3	£75.5	£100.7	£64.4	£96.7	£128.9
2021 - 2031	£32.4	£48.6	£64.8	£39.1	£58.6	£78.1	£50.0	£75.0	£100.0
Total (Millions)	£74.2	£111.2	£148.3	£89.4	£134.1	£178.8	£114.4	£171.6	£228.8

Table 27 St Edmundsbury Developer Contribution Rates - Numbers do not add due to rounding.

To give a flavour of how these scale of receipts relate to the costs of infrastructure outlined earlier, the charts below show the total costs of infrastructure (excluding transport costs) and affordable housing (assuming 50% of the cost is met by NAHP/RSL investment), compared to potential S106/CIL receipts at rates of £10K, £15K, and £20K per unit of market housing (i.e. net of affordable housing provision). This assumes, in contrast to the current situation, that <u>all</u> market housing irrespective of site size, makes a contribution, but that affordable housing developed does not make a contribution. If this proved not to be the case, obviously, the burden would need to be born by a smaller amount of development. Clearly, this is based on assumptions around the extent to which affordable housing is able to make a contribution. It is assumed in the above, that it makes no contribution (on the basis that any contribution would need to be delivered through funding or land value).





What this shows is that, at the ± 20 or ± 15 K level per unit of market housing, the scale of developer contributions equates broadly to the infrastructure costs (excluding transport and affordable housing), but that delivering even 25% of the cost of the respective portions of affordable housing will add significant cost and give rise to a major funding gap. Obviously, if the proportion of

8.80



affordable housing delivered was lower than the 40% and 35% targets, this would increase the CIL yield.

Fig 28 Funding Gaps to 2021 and 2031

8.81 What this implies is one or more of the following:

- a Making trade-offs/choices over what infrastructure needs to be provided, including identifying whether some of the 'required infrastructure' can actually be provided;
- b Pushing efficiencies in the cost of infrastructure below the benchmark costs identified in his report;
- c Identifying other funding sources (no external funding is assumed within the above calculations and as stated above, a degree of capital funding can be anticipated from other sources)
- d Identifying whether it is possible to capture increased share of development value, perhaps by trading off the requirements for infrastructure against regulatory costs (e.g. around the Code for Sustainable Homes)
- 8.82 In respect of d. above, the sensitivity of the local market and location of development will play a crucial determinate role in shaping the extent of developer contributions and in ensuring viability for developers and delivering required infrastructure across the Study Area. This is particularly acute in the context of the recent market changes and the fall in values, which gives rise to the challenges illustrated in Figure 30:




8.83

To demonstrate the sensitivity and variability of the local housing and land market to the costs of development, the table below illustrates a typical (and very much simplified) residual valuation of a development scheme using benchmarked costs:

		SCENARIO: 2 MAF	007 PEAK OF KET	SCENARIO: 2 MARKET	2009 FALL IN OF 15%
а	Gross Development Value	£22,500,000		£19,125,000	
b	Cost of Development		£10,136,000		£10,136,000
с	Affordable Homes (assume 25% of total cost of affordable housing)		£920,000		£920,000
d	Developer Margin on Construction Cost		£1,437,280		£1,437,280
е	Land		£6,000,000		£4,500,000
f	Residual (a-b-c-d-e)	£4,006,720		£2,131,720	
g	Amount for s.106/CIL e.g. @£20k per unit)	£2,000,000		£2,000,000	
h	Amount for Regulatory Costs (e.g. at 15% of total build cost)	£2,534,000		£2,534,000	
i	Gap (f-g-h)	-£527,280		-£2,402,280	

Table 28 Simple Development Viability Scenario

8.84 What this illustrates is that a 15% fall in sales value (even if accompanied by a 15% fall in land values) results in the amount of residual value available for S106/CIL and cost of regulation (e.g. to achieve increased standards of energy efficiency) reducing by c.45%, all other things being equal.

There is a need for the above, which will change over the lifetime of the plan 8.85 period (e.g. with potential market values recovering to their 2007 peak by 2012/13) to drive the creation of a cohesive and strategic approach to making trade-offs over infrastructure requirements, taking account of funding, recognising that it may not be possible to deliver all the 'required infrastructure' or the 'essentials' either at all or at the right time. This should be the function of a Long Term Delivery Plan once the spatial strategy for Growth begins to take shape through the planning process, and the specific infrastructure requirements are identified.

Rolling Fund/Infrastructure Fund Mechanisms

- One of the issues for provision of infrastructure is the need to upfront fund 8.86 delivery, particularly for infrastructure that is not directly related to individual sites, where the need is cumulative, or where development value is not available to cash flow up-front delivery.
- The approach to infrastructure funds is one that involves the use of funds to 8.87 upfront infrastructure delivery, the capture of the development value released by the investment (or captured from multiple developments) through tariff or Section 106, and use of the funds to then delivery future projects.



Fig 30 Illustration of Rolling Fund Principles



This is illustrated below:

- Scope what will it fund?
- Funding where will it secure resources from?

8.88

- Control who determines what infrastructure it funds and monitors its performance?
- Delivery what will it actually do?
- Time how long will it last?
- Exit what happens when it is completed?
- 8.90 Decisions on this will need to flow from assessments around the infrastructure programme once it is developed, and the relationship to broader issues of coordination which are discussed below.

Coordination of Development and Infrastructure Provision

- 8.91 Currently SEBC and FHDC function within an established two tier framework as local authorities with a range of shared and individual governance and management responsibilities alongside Suffolk County Council.
- 8.92 In a number of locations where housing growth and other planning issues span local authority boundaries, there has been a move towards increased crossboundary working. Indeed, this Study is an example of this. Other examples in the Study Area include the West Suffolk Local Strategic Partnership which includes Forest Heath, St Edmundsbury and the western part of Babergh. The two authorities are currently finalising their work on a joint Strategic Housing Land Availability Assessment (SHLAA) which was undertaken with Mid Suffolk District and Babergh District Councils. An Employment Land Review for the two districts and other parts of the County is also under preparation.
- 8.93 In some locations, the joint working has included the move towards crossboundary policy and decision making, and even delivery. Examples include:
 - the formation of Cambridgeshire Horizons as an SPV responsible for coordinating growth, and the use of joint development control committees (partly in response to some specific cross boundary planning issues with major development sites). It is also looking at the establishment of a Rolling Fund covering the sub-region;
 - The establishment of Development Corporations in some other Growth Areas (e.g. Northampton, Thames Gateway)
 - The formation of unincorporated bodies, such as Housing Growth Partnerships (e.g. the Greater Norwich Partnership) which have a coordination role.
- 8.94 Any or a combination of these might be a possibility for the Study Area. Although the cross-boundary planning issues associated with individual schemes are less likely to be relevant (with the likely growth areas being fairly well defined), there are a number of potential areas for progressing further cross-boundary working:
 - Defining the evidence base for complex issues and best practice for infrastructure provision and delivery

- Establishing a consistent approach to policy, including on use of s.106/CIL and application of appropriate site thresholds/standard tariffs consistent across the two authorities;
- SEBC already has an established Growth Area Partnership Board. However it might be necessary to develop a group or an accountable body to manage some form of infrastructure fund if required to cash flow infrastructure provision – the issue would be in judgements on the governance arrangements associated with co-funding/co-decision making especially on cross border decision making; and
- Decision making and prioritisation over key infrastructure; including apportionment of costs to developments, particularly for sub-regional or town-wide infrastructure, notably transport and/or education.
- 8.95 As there is current uncertainty over Local Government Reorganisation it is difficult to arrive at any definitive conclusions.
- 8.96 In advance of the conclusions on these models, any of which would impact on the structures for taking forward and overseeing housing growth, it is recommended that the local authorities:
 - 1 Continue to work together to develop and frame their approach to housing growth and infrastructure provision. NLP's initial view, based on the Study, is that a key area to focus on is around the integration of transport issues, and linking the outputs of this and other planning work to the transport analysis recently commenced by the County Council;
 - 2 Begin to work through what the alternative scenarios around local government structures might mean for delivery – having a strong story to tell on approach to delivery will be important for any funding bids made in advance of any local government reorganisation taking effect.

^{9.0} Conclusions and Recommendations

- 9.1 This Study presents the findings of the environmental and infrastructure capacity Study. The findings are wide ranging and cover a broad canvas of issues. The five objectives indentified in the introduction have been drawn together in order to present the environmental capacity identified for each settlement together with the understanding of infrastructure requirements (in the form of tipping points developed by the Infrastructure Model) to generate 'optimum' levels of growth by settlement. The optimum levels of growth are used to test and confirm the funding toolkit and are presented in a summary table for ease of reference (Table 29).
- 9.2 This section therefore summarises the salient points of these interrelated objectives and then identifies key issues for moving forward.

Environmental Capacity Conclusions

- 9.3 The environmental capacity has been identified based on the following approach to identified constraints:
 - An overall policy assumption has been taken that where there are identified fundamental constraints development should be avoided pending further analysis at a detailed level.
 - Opportunity areas have been identified by a process of elimination in respect of fundamental constraints and imposed buffers to potential growth.
 - All opportunity areas are capable of supporting a degree of development without significant impact on these constraints.
- 9.4 A preliminary dwelling yield has been identified as a total initial capacity, after the application of the fundamental constraints. Using benchmark density assumptions a yield of circa 13,000 – 22,500 dwellings has been identified in the FHDC area and 16,500 – 29,000 identified for the SEBC area.
- 9.5 However it should be noted that it is unlikely that this total will be or should be built by 2031.
- 9.6 Opportunity Areas have in part been determined by protection buffers around landscape and settlement features. These buffers are, in turn, related to policy decisions taken independently by each Council. The two Councils therefore may decide that specific benefits of development warrant negotiation with the relevant bodies over reduction in the buffer to either a landscape (for example, SPA) or between settlements allowing coalescence for the benefit of combined provision of services and facilities.
- 9.7 Certain designations, for example locally designated nature reserves, will be open to mitigation from carefully designed development proposals and thereby

reduce the constraint from potential impact or need for a protective buffer to development. There may be scheme-specific reasons that justify development in what would otherwise be inappropriate locations. It is not for this Study to pre-empt such possibilities. The identified Opportunity Areas, however, are considered preferable location in comparison to additional sites which rely heavily on mitigation to overcome impacts.

- 9.8 The Opportunity Areas identified have been carefully located to avoid significant impact on fundamental constraints to development. However, there is also a need to recognise that whilst individual development may avoid impact on sensitive features, the cumulative impact of development within the various Opportunity Areas will continue to need to be considered. These should be the subject of a detailed Habitat Regulations Assessment at a district level.
- 9.9 Encouraging sustainable growth requires the provision of facilities and employment linked by sustainable networks to growth areas, rather than a focus specifically on avoiding congestion. Congestion, for private vehicles at least, may encourage people to use more sustainable options if they exist reducing the overall perceived constraint. Therefore large scale development needs to ensure that it fulfils infrastructure requirements at a local level within the development but also to address the need for sustainable links to the centre of the settlement.
- 9.10 Opportunities should be taken in strategic locations to create and protect beneficial green infrastructure links. Identifying at an early stage where existing green infrastructure designations can be linked by green corridors and the critical role that development can play in protecting and funding the maintenance of these links can be a major benefit to arise from large scale developments. Particular examples where the benefits could be realised are the maintaining and enhancing of a river corridor along the River Linnet to the west of Bury St Edmunds creating a green link from the town centre to Ickworth Park, and the potential opening of culverts through Newmarket to reduce potential flood risk and create small scale green links through the town.
- 9.11 It is important to note overall across the Study Area, that the two authorities are distinctive and in respect of the constraints it must be realised therefore there are far more significant constraints to be mitigated within the district of Forest Heath than in St Edmundsbury. This highlights the need for further site specific analysis before any development is planned.

Environmental Capacity Key Findings

- 9.12 The Study has identified that, as expected from the outset, settlement optimising development across the two districts is the development type least likely to impact on existing green infrastructure within the two districts.
- 9.13 Small scale growth within settlements towards the lower end of the settlement hierarchy can be accommodated in all identified Opportunity Areas without

fundamental impact to existing landscape, habitat or settlement constraints. However, Opportunity Areas with potential to link to or create and sustain long term sustainable infrastructure networks should be considered in preference, for example Stanton and Ixworth.

- 9.14 Existing congestion in and around Mildenhall is likely to require mitigation as a result of potential development within Mildenhall and the surrounding settlements. Mitigation options should be investigated prior to further development, potentially including the previously identified relief road linking to the A11, particularly in light of alternative growth and funding options as a long term strategy, not necessarily linked to the Marshalls Aerospace relocation as previous discussions have been. A strategic approach to the relief of congestion within Mildenhall should have the additional benefit of freeing up capacity in other locations within the district.
- 9.15 Mildenhall East Opportunity Area would require significant mitigation of potential impacts to the Special Protection Area to the east. Any development in this location should be negotiated in detail on a site specific basis with Natural England.
- 9.16 Lakenheath, Beck Row, West Row and Mildenhall opportunities must be considered in further consultation with MOD as they fall within airbase safeguarding zones and should be developed in discussion over any long term expansion plans for the Airbases.
- 9.17 It is recommended that any further greenfield development in Red Lodge should be considered once the existing masterplan is completed in order to allow employment uses and service opportunities to establish. This will allow wider cumulative impacts on further growth in this location to be properly evaluated as Red Lodge currently performs as an unsustainable development location in comparison to other Opportunity Areas within the district. Notwithstanding this, brownfield allocations may still be considered in accordance with PPS3.
- 9.18 Safeguarding the unique character and economy of Newmarket (Horse Racing Industry) and Bury St Edmunds (Rich Heritage and Historic Culture) are integral to the Study Area as they are both valued assets for the areas economic and lifestyle offer to residents.
- 9.19 Bury St Edmunds has the capacity to accommodate growth in several locations around the existing settlement. Opportunity Areas to the north and east of the settlement provide clear opportunities to minimise any potential impact on sensitive landscapes however, development to the south east and the west have benefits of opportunities for creating sustainable links into the facilities of the town centre minimising the risk of additional impacts to the town centre from congestion. Given the key aim of safeguarding the historical assets of Bury St Edmunds, this includes lckworth Park although not in the centre of the settlement, these two potential impacts will need to be balanced. The

Opportunity Area to the west of Bury St Edmunds appears to offer the greatest potential in achieving this balance.

Infrastructure Conclusions

Infrastructure

9.20 Infrastructure requirements have been identified using a benchmarking approach to identify existing surplus provision or under provision. These benchmark standards have then been used to calculate what the requirement for infrastructure related to different levels of housing growth is. Where using standard ratios was not applicable or the baseline data to use this approach was not available NLP has used qualitative assessments to identify required provision. This has been supported by the key infrastructure issues identified through stakeholder consultation.

Infrastructure Key Findings

- 9.21 Overall both Forest Heath and St Edmundsbury have good infrastructure provision, particularly in the higher order settlements, which, dependent on location, can generally support growth to 2021. This is underlined by the cost of infrastructure to support planned growth up until 2021 being comparatively low (excluding transport). Beyond 2021 there is an overall infrastructure tipping point with infrastructure costs per dwelling disproportionately high for growth between 2021 and 2031.
- 9.22 This infrastructure costs (identified in the table below) illustrate how the costs per dwelling rise between 2021 and 2031. The cost of infrastructure including affordable housing at the low growth (RSS) scenario to 2021 is £14,450. At the same trajectory of growth dwellings built between 2021 and 2031 will have an associated infrastructure cost of £27,100 per dwelling.

Infrastructure Type	Cost to 2021		To 2031	
	(RSS)	Low Growth	Medium Growth	High Growth
Green Infrastructure & Outdoor Sport	£35.1m	£58.3m	£69.2m	£87.1m
Health	£31.7m	£56.4m	£68m	£87m
Emergency Services	£4.9m	£8.8m	£10.6m	£13.5m
Education	£13.1m	£42.9m	£60.8m	£89.9m
Community Facilities	£5.5m	£9.9m	£11.9m	£15.3m
Leisure, Culture & Indoor Sport	£5.7m	£8.4m	£9.7m	£12m
Retail & Key Services			N/A	

Infractructure Type	Cost to 2021		To 2031	
	(RSS)	Low Growth	Medium Growth	High Growth
Transport		Overall transport	costs are not available	9
Total (excl. Affordable Housing)	£96m	£184.7m	£230.2m	£304.8m
Cost Per Dwelling excl. Affordable Housing	£4,600	£8,900	£9,200	£9,500
Affordable Housing	£205	£363	£438	£560
Cost Per Dwelling (incl. affordable housing)	£14,450	£26,300	£26,600	£26,900

9.23 One key finding is that smaller settlements require some levels of growth to ensure they have a critical mass of population that is sufficient to ensure the provision of local services is viable. This will also ensure that such settlements are sustainable by minimising the need to travel for key services.

Infrastructure Conclusions and Recommendations

- 9.24 When identifying a finalised pattern of growth and assessing the identified Opportunity Areas, consideration should be made to the level of existing infrastructure provision in supporting growth and the infrastructure requirements that are likely to come forward from the level of development. Particularly in small settlements growth should reflect the level of growth required to underpin the key services that will ensure sustainability in rural housing growth.
- 9.25 Further work should be undertaken to underpin the transport requirements to support housing growth. This infrastructure will form a large proportion of the costs faced in delivering infrastructure to support growth. All further development of a growth strategy should be undertaken in consultation with infrastructure providers to ensure that phasing and cumulative impacts do not overload infrastructure provision.

Overview of Potential Settlement Growth

- 9.26 Taking the range level of capacity derived from the upper level of environmental and physical capacity identified in the constraints and opportunities analysis as a basis these have been tested against the infrastructure impacts that growth at these levels would present. By looking at the infrastructure requirements to support the level of growth at each location and wider settlement suitability issues, a judgement has been made using this evidence base as to what the potential 'optimal growth' within that range would be.
- 9.27 'Optimal growth' is a judgement on the impact that growth will have on the provision and requirement for infrastructure and the costs of mitigating this

requirement. It seeks to identify where abnormal costs may be incurred for little amounts of growth benefit. For example 8,000 homes may require one upper school but 10,000 new homes may require two upper schools, meaning that the cost of a whole new upper school is incurred for only 2,000 additional homes. The 'optimal growth' ranges also seek to take account of the suitability of the settlement for sustainable growth related to the provision of infrastructure and factors such as the need to travel. For example a settlement with a population of 2,000 may not be able to sustain a doctor's surgery, but growth to expand the population will create critical mass to support the service and ensure it remains viable. This can help to ensure the smaller settlements are well served by key day-to-day services and also reduce the need to travel by car to larger nearby settlements.

- 9.28 The 'optimal growth' does not seek to take account of a wide range of other factors that will be material to the location and phasing of growth, but does provide a long term view on the total potential levels of growth achievable within the constraints identified. Particular regard should be had to the fact that optimal levels are not tied into RSS housing target figures. Levels of 'optimal growth' do not represent a basis for pushing for higher completions over a shorter period, although the 'optimal growth' may be reached over a longer period beyond the RSS time-frame. Optimal growth may also practically be achieved at lower levels of growth below the range of the environmental and physical capacity upper limit that has been identified. This is likely to include optimising growth potential within the capacity constraints of existing infrastructure, which will be the most cost effective way of providing growth in the short term, but is unlikely to provide the required levels of growth to meet RSS targets.
- 9.29 The optimal growth range is described in more detail and illustrated in Appendix 8.

Settlement Key Findings

9.30 The analysis, findings and conclusions are identified in the following table.

	Range of Environmental Capacity Upper Limit	Infrastructure Issues, Marginal Benefit from Required I	Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on
	(New Homes)			Considerations
Forest Heath				
Brandon	630 – 1,000	Growth to support provision of GPs and Dentis:	ts which is currently poor	Across whole
		Capacity in schools and capacity in utilities unl	likely to constrain levels of growth	range of
		Growth dependent on ability of suitable sites w	vithout environmental and landscape	capacity upper
		constraints to come forward		limit
Newmarket	1,740 – 3,050	Capacity of Newmarket's highway network to s	upport large strategic growth. Requirement	Low end of
		for greater transport mitigation at higher levels	of growth	range of
		Existing capacity in health services at lower en	d of range	capacity upper
		Potential requirement for new Primary School		limit
		 Existing character of Newmarket 		
Mildenhall	3,340 – 5,860	New Primary Schools and New Upper Schools	will be required at level of growth with most	High end of
		benefit from the infrastructure investment deriv	ved at high growth	range of
		Upgrades to wastewater and substation capac	ity will be required, particularly given	capacity upper
		cumulative impacts of growth around Mildenha		limit
		New green infrastructure, sports and social inf	rastructure to support growth	
Lakenheath	2,660 – 4,660	New Primary Schools and New Upper Schools	will be required at level of growth with most	Low end of
		benefit from the infrastructure investment deriv	ved at high growth	range of
		Upgrades to wastewater and substation capac	ity will be required, particularly given	capacity upper
		cumulative impacts of growth around Mildenha		limit
Red Lodge	1,140 - 2,000	SFRA and Water Cycle Study identifies existing	wastewater treatment works has limited	Low end of
		capacity, with issues identified around the upg	rade of the existing wastewater facility due to	range of
		further constraints. Potential major investmen	t required to allow for growth.	capacity upper
		Existing poor range of services, which will need	I to be addressed as per the requirements in	limit
		the existing masterplan.		
		Impact on the rural road network for eastward -	travel due to lack of an eastbound A11/A14	
		junction. Potential investment in rural road net	twork required to support growth.	
Exning	1,240 - 2,170	Capacity of the existing highway network to acc	commodate significant levels of growth is a	Mid/High end
		key risk particularly with junction capacity on the	ne A14.	of range of
		Close proximity to Newmarket, however, sustai	inable links such as bus services and cycle	capacity upper
		routes should be sought and promoted.		limit
		High levels of growth within the range will ensu	ire most benefit of any new primary school	
		required to support the upper range of growth.		

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	Range of Environmental Capacity Upper Limit (New Homes)	2	nfrastructure Issues, Marginal Benefit from Required Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on Considerations
Kentford	240 - 440	• • •	Lacks majority of social infrastructure types, will need to ensure that services and facilities are provided across the board in line with growth. Without these facilities growth in Kentford will not have good access to services and the settlement will not be a sustainable option with heavy reliance on services in Newmarket. For sustainable growth to come forward infrastructure investment should particularly seek to improve links to Moulton for the primary school, either reopen the community centre or seek a new facility and provide outdoor recreation space.	Across whole range of capacity upper limit
West Row	140 – 250	• • •	Existing capacity in the primary school and small levels of development will help to ensure the primary school and other local services such as shops and services remain viable. Residents will continue to rely on employment and higher order services from further afield, particularly Mildenhall, and sustainable transport links should be sought to support growth. Upgrades to wastewater and substation capacity will be required, particularly given cumulative impacts of growth around Mildenhall.	Across whole range of capacity upper limit
Beck Row	240 - 420	• • •	Limited Primary School capacity with a tipping point being reached at the low end which will need to be mitigated through upgrades/expansion to the existing primary school as it would not be appropriate to provide a whole new primary school for small levels of growth. Growth in Beck Row should support provision of a GP surgery as the settlement is at a size where it could theoretically support one, providing an important local service within walking catchment of residents. Upgrades to wastewater and substation capacity will be required, particularly given cumulative impacts of growth around Mildenhall.	Across whole range of capacity upper limit
St Edmundsbury				
Bury St Edmunds	12,000 – 21,020	• • • •	Growth range is beyond the RSS requirements to 2021 and 2031 and as such growth levels will not come forward within this time period, but may do over a significantly longer period. Lower levels of growth will minimise costs associated with substantial infrastructure provision such as mitigating highway congestion and upgrading/providing new sites for wastewater treatment. Provision of schools and health facilities will need to be phased in line with growth Ensure sustainable growth by providing and public transport.	Polarised, with marginal benefit at low end or high end of range of capacity upper limit

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	Range of Environmental Capacity Upper Limit (New Homes)		nfrastructure Issues, Marginal Benefit from Required Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on Considerations
Haverhill	1,480 – 2,600	• • • •	Provision of new primary and secondary schools will be required, particularly in recognition of the wider role Haverhill has in upper school provision across the south of the Borough. High growth will provide most benefit of these. Higher levels of growth will ensure the most marginal benefit per additional dwelling through the provision of required infrastructure, particularly given existing deficits within some infrastructure types, such as GPs and outdoor sports. Investment in utilities including substation capacity and wastewater capacity Out-commuting should to be addressed through suitable employment growth in Haverhill as well as improvements in inter-city bus links to Cambridge, which may become more viable with greater levels of growth. Potential for greater capacity if appropriately masterplanned in the north east and mitigation of potential environmental and heritage issues is identified.	High end of range of capacity upper limit
Barrow	420 - 740	• • •	There are likely requirements for provision of new infrastructure including GPs, a Dentist and a new or expanded primary school. Higher range of development will ensure that there is a sufficient critical mass in Barrow to support a wide range of services, minimising the need to travel to Bury St Edmunds for such services. Requirement for upgrades to the wastewater treatment works.	High end of range of capacity upper limit
Risby	440 - 770	• • •	Risby Primary School will require investment to accommodate additional pupils as it is currently oversubscribed. Given Risby's current limited provision of infrastructure and the potential costs associated with providing infrastructure for levels of growth that is limited by environmental and physical constraints a lower level of growth is appropriate. Constrained on western side by Special Protection Area	Low end of range of capacity upper limit
Kedington	130 - 220	• •	Kedington Primary School is likely to require investment to accommodate additional pupils associated with growth at Kedington, with higher growth levels likely to ensure there are sufficient additional pupils to make investment in the school more beneficial. Higher levels of growth would be able to take advantage of existing excellent infrastructure provision and capacity such as the GP surgery.	High end of range of capacity upper limit

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	Range of Environmental Capacity Upper Limit (New Homes)	Ē	frastructure Issues, Marginal Benefit from Required Infrastructure and Other Growth Considerations	Suggested Optimal Range Based on Considerations
lxworth	560 - 980	• •	Wastewater treatment works will require upgrades if higher levels of development in both lxworth and Stanton are pursued which may represent a high costs for the ability to accommodate small amounts of additional growth. Additional primary school capacity may be required, although this may come from the migration to a two tier education system.	Low end of range of capacity upper limit
		•	Ixworth currently supports a good range of services and lower levels of growth from the identified test range would be sufficient to continue this.	
Stanton	1,020 – 1,790	•	Wastewater treatment works will require upgrades if higher levels of development in both Ixworth and Stanton are pursued which may represent a high costs for the ability to	Low end of range of
		•	accommodate small amounts of additional growth. Stanton currently supports a good range of services and lower levels of growth from the identified test range would be sufficient to continue this.	capacity upper limit
Clare	520 - 910	• •	Provision of infrastructure that represents large investment such as the requirement for a new primary school to support growth would be supported by higher levels of growth to ensure that the most benefit is derived from the investment into that infrastructure. Clare may require new upgrades to the electricity substation which is a key risk, although capacity for wastewater is good.	Mid/High end of range of capacity upper limit
Wickhambrook	150 - 250	••	There is existing infrastructure capacity within GP and Dentist provision and a good level of spare pupil capacity within the Primary School. Although Wickhambrook is reasonably isolated from higher order services found in Haverhill or Bury St Edmunds, it does have a range of local services that can provide for a day-to-day local need and small levels of growth will continue to support these.	Across whole range of capacity upper limit

Summary Schedule Table 29

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Settlement Conclusions and Recommendations

- 9.31 Consideration needs to be given to the way growth and infrastructure should be delivered together to ensure that the people living and working in settlements derive the most benefit from infrastructure and that infrastructure is provided to ensure the most efficiency and marginal benefit from the investment in providing it. The optimal growth range represents this over a long term period up to the existing physical capacity of settlements based on existing constraints and issues.
- 9.32 In any case, the analysis contained within this Study identifies that in consideration of the environmental capacity there are ample opportunities for both St Edmundsbury and Forest Heath to meet their RSS housing targets over the period to 2021 and 2031. However, the funding and delivery of sufficient infrastructure to meet the targets at the right time may be an issue without the appropriate funding mechanisms being in place. Site specific analysis may identify further barriers to delivery and the deliverability of opportunities will be subject to the respective strategies set our in the local authorities' LDFs.

Funding and Delivery

- 9.33 A key challenge for housing growth is the funding and delivery of infrastructure needed to support growth. The costs are potentially significant, circa £96-150m to 2021 (and £185-305m for the period to 2031) excluding transportation and affordable housing, which has the potential to add significant further costs. At the low growth scenario (RSS aligned) 11,730 homes across the Study Area to 2021 would have an infrastructure cost (excluding affordable housing and transport) totalling £96 million equivalent to £4,600 per dwelling.
- 9.34 In order for the required and identified infrastructure to be delivered alongside housing growth robust funding and delivery structures need to be in place.

Funding and Delivery Key Findings

- 9.35 The Study has analysed the current funding sources and delivery models for the infrastructure that has been considered.
- 9.36 The possible approaches to the existing and future role of developer contributions (s106) including emerging infrastructure funding mechanisms and the potential role of the Community Infrastructure Levy (CIL) has been assessed.
- 9.37 The current approach to the use of s106 in the Study Area can be improved, where specific agencies such as the Highways Agency have been unable to secure developer contributions through s106 agreements.
- 9.38 The key messages from assessing the approach to S106 are that in order to address its challenges and to ensure infrastructure requirements for new

developments are realised through Section 106 agreements, a planning obligations SPD as part of the LDF suite of documents is recommended for both local authorities. Depending on delivery and governance arrangements, a joint LDD should be considered and should obviously be linked to other LDDs.

- 9.39 The emerging challenges of applying CIL pose uncertainty around its practical use due to the regulations not being finalised until autumn 2009. It is also unclear whether CIL will fill the infrastructure funding gap and the consultation around the details of its design is still ongoing.
- 9.40 The series of issues identified for local planning authorities to consider prior to adopting a CIL approach to securing developer contributions notably around developing a robust evidence base and mechanisms for its application highlight the need to co-ordinate the multiple strands of work especially within the current economic climate.
- 9.41 The ultimate ability of development to make contribution to meet infrastructure costs is a function of the complex 'balance sheet' of development illustrated within this report. In order to arrive at a high level estimate of the potential quantum of development value that might contribute to the costs of infrastructure, we have applied three broad tariff rates to give a flavour to the scale and range of receipts. Application of a range of CIL tariffs illustrates the impact on funding gaps between the cost of infrastructure and the likely levels of funding coming forward from development for infrastructure.
- 9.42 Under a 'High' level of growth for the 2008 2031 period, FHDC could potentially secure between £85 and £170 million if the average CIL rate was between £10,000 and £20,000 respectively.
- 9.43 Under a 'High' level of growth for the 2008 2031 period, SEBC could potentially require from developers between £114.4 and £228.8 million if the average CIL rate per dwelling was between £10,000 and £20,000 respectively. With affordable housing included, these still leave large funding gaps as identified below.



Fig 31 Funding Gaps to 2021 and 2031

Funding and Delivery Conclusions and Recommendations

- 9.44 The two respective authorities need to continue to work together to develop and frame an approach to housing growth and infrastructure provision. A key area to focus on is around the integration of transport issues, and linking the outputs of this and other planning work to the transport analysis recently commenced by the County Council. However, it is already clear that:
 - a Even with NAHP funding the cost of affordable housing adds significant costs burden to the private housing development and creates a large part of the funding gap;
 - b In light of this, there is a need to consider alternative funding models and the potential to make choices and trade-offs to achieve the best outcome in terms of viability, housing mix, and infrastructure provision.
- 9.45 It is necessary for the authorities to begin to work through what the alternative scenarios around local government structures might mean for delivery having a strong story to tell on the approach to delivery will be important for any funding bids made in advance of local government reorganisation taking effect.
- 9.46 Beyond 2021 the infrastructure required and associated costs increase incurred by illustrating the significant tipping points that come into play.

Next Steps for FHDC and SEBC

9.47 The key next steps for the two local authorities is to synthesise the results of this Study with:

- The outputs of the other parts of the planning process (including SHLAA, SHMA, affordable housing viability and employment land review)
- Emerging outputs from further analysis contained with the SFRA Study and the County Council's Transport analysis
- The planning strategy process.
- 9.48 From this, further, more site specific analysis will be required to ascertain specific impacts infrastructure requirements, with co-ordination and joint working amongst infrastructure providers. The Study has identified orders of magnitude at a strategic level and it is for the local authorities to make the specific choices and trade-offs within these parameters.
- 9.49 There is a need to continue to work together to develop and frame an approach to housing growth and infrastructure provision, and how this relates to the capturing of land value and synergy with other funding sources, notably around school restructuring.
- 9.50 Another key area to focus on is around the integration of transport issues, and linking the outputs of this and other planning work to the transport analysis recently commenced by the County Council



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